

[Etusivulle](#)

ETUSIVU



HS VISIO



UUSIMMAT



LEHDET

**5.1.2.e** Adelen uutuu levy on niin murheellinen, että se tuntuu jopa liialliselta – Parhaat kappaleet ovat silti liki täydellisiä

**5.1.2.e** Psykoterapeutti kohtaa jäätäviä parisuhteita, joiden taustalla saattaa olla lapsuudessa opittu ajatusmalli – Moni on laitettu lapsena yksin "nurkkaan häpeämään"

**5.1.2.e** Ei timanttisällöt käyttösi maksutta. Lunasta etusi!

[Mieli](#) | [Lukijan mieli](#)

## EU:n geenitekniikkalainsäädäntö on tuotava nykyaikaan

Sääntelyn tulee perustua nykytietämykseen ja -teknologiaan.

5.11. 2:00

**5.1.2.e** HS 31.10.) toi esille tärkeitä näkökulmia EU:n geenitekniikkaa koskevasta lainsäädännöstä. Juttu kertoi, että ihminen on jalostanut kasveja aina, ensin valinnalla ja myöhemmin risteyttämällä.

Geenitekniikkaa alettiin ymmärtää ja hyödyntää kasvinjalostuksessa 1980-luvulla. Uudet 2000-luvulla kehitetyt genominmuokkaustekniikat ovat luonnollinen jatkumo kasvinjalostustyökalujen kehitykselle. Ne tarjoavat uusia mahdollisuuksia, kun ihmiskunta on uusien globaalien haasteiden edessä. Uusilla nopeilla ja täsmällisillä jalostustekniikoilla voidaan esimerkiksi poistaa haitallisia aineosia kasveista, parantaa tautien, tuholaisten, talven tai kuivuuden kestävyyttä tai muuttaa kasvien ravitsemuksellisia ominaisuuksia.

Geenitekniikkaa hyödynnetään maailmalla jo laajasti. Muuntogeenisten kasvien turvallisuudesta on tutkimustietoa jo 30 vuoden ajalta ja erittäin laaja tieteellinen yhteisymmärrys. Lainsäädännön tulee seurata tieteen kehitystä, ja geenitekniikkaa tulee arvioida paitsi sen mahdollisesti aiheuttamien riskien myös siitä saatavien hyötyjen kautta.

On tosiasia, että EU:n 1990-luvulla kehitetty geenitekniikkalainsäädäntö on vanhentunut. Se ei enää vastaa nykytietämystä eikä ota huomioon teknologista kehitystä. Euroopan komissio on tänä vuonna todennut, että

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lainsäädännön valmistelun tiekartasta. Luonnoksen mukaan komissio antaisi uuden säädösehdotuksen keväällä 2023.

Suomi edisti jo EU:n puheenjohtajakaudella vuonna 2019 aktiivisesti keskustelua uusien genominmuokkaustekniikoiden lainsäädännön selkeyttämisestä. Maa- ja metsätalousministeriö suhtautuu myönteisesti lainsäädännön nykyaikaistamiseen ja tukee vahvasti EU:n tiekartan mukaista geenitekniikkalainsäädännön uudelleenarviointia. Lainsäädännön päätavoite on ihmisten, eläinten ja ympäristön terveyden suojeleminen. Sääntelyn kohteena tulee olla lopputuote ja sen ominaisuudet eikä tekniikka, jolla kasveja jalostetaan.

# 5.1.2.e

Lukijan mielipiteet ovat HS:n lukijoiden kirjoittamia puheenvuoroja, joita HS:n toimitus valikoi ja toimittaa. Voit jättää mielipidekirjoituksen tai tutustua kirjoitusten periaatteisiin osoitteessa [www.hs.fi/kirjoitamielipidekirjoitus/](https://www.hs.fi/kirjoitamielipidekirjoitus/).



## Artikkeliin liittyviä aiheita

Mielipide



Euroopan unioni



Geenit



Kasvit



Tiede



Ympäristö



Finland's largest daily newspaper, the *Helsingin Sanomat* - opinion piece by a senior expert in the Ministry of Agriculture, Sanna Viljakainen sees the current GM legislation as no longer fit for purpose:

Original article: <https://www.hs.fi/mielipide/art-2000008378414.html>

The Google translate:

## **EU genetic engineering legislation needs to be modernized**

**Regulation must be based on current knowledge and technology.**

5.11. 2:00

**5.1.2.e** (HS 31.10.) Highlighted important aspects of EU legislation on genetic engineering. The story said that man has always bred plants, first by selection and later by crossing.

Genetic engineering began to be understood and utilized in plant breeding in the 1980s. New genomic engineering techniques developed in the 21st century are a natural continuation of the development of plant breeding tools. They offer new opportunities as humanity faces new global challenges. For example, new fast and accurate breeding techniques can remove harmful ingredients from plants, improve the resistance to diseases, pests, winter or drought, or change the nutritional properties of plants.

Genetic engineering is already widely used around the world. There has been research data on the safety of genetically modified plants for 30 years and a very broad scientific consensus. Legislation must follow scientific developments and genetic engineering must be assessed not only in terms of its potential risks but also in terms of its benefits.

It is a fact that the genetic engineering legislation developed in the EU in the 1990s is obsolete. It no longer corresponds to current knowledge and does not take into account technological developments. The European Commission has stated this year that the legislation is no longer appropriate. It should be adapted to scientific and technological developments. In September, the Commission published a draft roadmap for the preparation of EU legislation on new plant genomic engineering techniques. According to the draft, the Commission would present a new legislative proposal in spring 2023.

Already during the EU Presidency in 2019, Finland actively promoted the debate on clarifying the legislation on new genome modification technologies. The Ministry of Agriculture and Forestry welcomes the modernization of legislation and strongly supports the reassessment of genetic engineering legislation in line with the EU Roadmap. The main objective of the legislation is to protect human, animal and environmental health. The final product and its properties should not be regulated, nor should the technology used to process the plants.



[EU:n geenitekniikkalainsäädäntö on tuotava nykyaikaan - Mielipide | HS.fi](#)

**5.1.2.e** (HS 31.10.) toi esille tärkeitä näkökulmia EU:n geenitekniikkaa koskevasta lainsäädännöstä. Juttu kertoi, että ihminen on jalostanut kasveja aina, ensin valinnalla ja myöhemmin risteyttämällä. Geenitekniikkaa alettiin ymmärtää ja hyödyntää kasvinjalostuksessa 1980 ... [www.hs.fi](http://www.hs.fi)



## **Two promising recent developments regarding GE in Switzerland, 23.11.2021**

### **1) Establishment of a new association with the title “Varieties for tomorrow” in November 2021.**

See the following website for more information (in German and French only):  
<https://sortenfuermorgen.ch/>

#### Translation of the press release:

For an open and differentiated view of new breeding processes.

The association "Varieties for Tomorrow", founded today, calls for an open and differentiated approach to molecular biological methods of plant breeding. Conventional plant breeding should be able to be supplemented by sensible breeding methods in the molecular biological field in order to address future environmental protection challenges more effectively.

Various actors from the Swiss agriculture and food industry today founded the “Varieties for Tomorrow” association. This advocates strong plant breeding and openness to new breeding methods in the molecular biological field. Modern technologies should be given a chance. Their potential for a sustainable agriculture and food industry should be examined impartially. The association restricts its activities to plants and thereby to those new breeding processes in which no alien DNA is introduced into organisms. It promotes the debate, provides information and wants to actively help shape the framework.

Our agriculture and food industry will also need robust and high-performance varieties in the future, which can be used for resource-saving food production. The climatic changes in recent years have made the need for action very clear to us. The topic of molecular biological breeding processes is extremely topical due to the current parliamentary debate about the extension of the growing moratorium, as well as due to the rapidly advancing technical development. The association will participate in this debate.

### **2) On 6.11.2021 the Science Commission of the Council of States has for the first time voted in favor of gene technology!**

See <https://www.parlament.ch/press-releases/Pages/mm-wbk-s-2021-11-16.aspx?lang=1031> for details (in German, French and Italian).

#### Excerpt from the press release:

“The Council of States' science commission gives the green light to a four-year extension of the moratorium on the cultivation of genetically modified organisms (GMOs) in agriculture. However, it would like to exempt genetically modified organisms into which no transgenic genetic material has been inserted and is also demanding a report from the Federal Council on the possibilities of exempting breeding processes with genome editing methods from the moratorium.”



5.1.2.e

**Van:** 5.1.2.e )  
**Verzonden:** woensdag 15 december 2021 14:37  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls  
**Bijlagen:** Dutch reaction on the EC NGT roadmap.pdf

Dear 5.1.2.e

Thank you for the information and interesting meeting on the 4<sup>th</sup> of November. In the attachments you can find the NL response to the EC NGT roadmap. For me both 28.4.2022 and 5.5.2022 are still available.

Merry Christmas and a happy new year!

Best regards,  
5.1.2.e

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**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** dinsdag 14 december 2021 09:44  
**Aan:** 5.1.2.e @epsomail.org>  
**cc:** 5.1.2.e @julius-kuehn.de); 5.1.2.e @julius-kuehn.de>; 5.1.2.e @slu.se) <5.1.2.e @slu.se>; 5.1.2.e @helsinki.fi) <5.1.2.e @helsinki.fi>; 5.1.2.e @wur.nl>  
**Onderwerp:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls  
**Urgentie:** Hoog

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the **files we mentioned** during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group.**

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, 5.1.2.e (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no  
 Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

5.1.2.e

EPSO on EC strategies, Food and Nutritional Security ...:

- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\)](#), 25.10.2021
- Opinion paper: [Designing the Crops for the Future: The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

5.1.2.e

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European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32-2-5.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

**Van:** 5.1.2.e nl>  
**Verzonden:** maandag 10 januari 2022 08:31  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e  
**Onderwerp:** Viewpoint: Salmon, apples and potatoes — 3 healthy and sustainable foods that you can buy now under the new “bioengineered” label  
**Bijlagen:** geneticliteracyproject.org-Viewpoint Salmon apples and potatoes 3 healthy and sustainable foods that you can buy now under the .pdf

Dag,

Nog de beste wensen voor 2022.

Attached een stukje over cisgene en transgene producten die in de US vanaf 1 januari 2022 moeten worden verkocht onder het nieuwe 'bioengineered' label. Interessant is dat dit producten voor consumenten zijn.

Groet, 5.1.2.e

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** Fact finding missie NGT's in NL 7 t/m 11 feb  
**Datum:** woensdag 12 januari 2022 10:59:38

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Ha 5.1.2.e en 5.1.2.e

Ik hoop dat jullie goede en fijne feestdagen hebben gehad!

Van 7 t/m 11 februari zal er een fact finding missie plaatsvinden door de audit dienst van de Commissie in Nederland. Als doel heeft deze missie zich gesteld:

*"The objective of the mission will be to investigate the implementation of controls on new genomic techniques under Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms."*

Uiteraard is deze missie niet los te zien van de huidige beweging op het onderwerp NGTs. Naast NL heeft de audit dienst ook een fact finding missie op de planning staan in Duitsland. Ze zullen ook verder gaan vragen op een door NL ingevulde questionnaire, met name op vraag 3, 4 en 24 [gmo\\_mod-bio\\_ngt\\_eu-study.pdf \(europa.eu\)](https://gmo-mod-bio.ngt.eu-study.pdf).

We zijn druk bezig op korte termijn een programma op te stellen. Eén van de zaken, waarbij jullie ons een flinke hand zouden kunnen helpen, is bij het vinden van geschikte bedrijven die bereid zijn om een presentatie te geven aan deze fact finding missie over de ontwikkeling van producten met NGTs/NBTs (ze hoeven nog niet op de markt te zijn, meer de intentie om deze in de toekomst te ontwikkelen). De missie wil deze bedrijven graag spreken. Ik zat zelf te denken aan bijvoorbeeld een Rijk Zwaan, ENZA of Bejo, maar wellicht hebben jullie daar een beter overzicht voor?

Wellicht even bellen binnenkort?

Met vriendelijke groet,

5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**  
**Ministerie van Landbouw, Natuur en Voedselkwaliteit**

Bezuidenhoutseweg 73 | 2594 AC | Den Haag

Postbus 20401 | 2500 EK | Den Haag

.....  
**M** 065.1.2.e

www.rijksoverheid.nl/Inv

5.1.2.e

Van: 5.1.2.e  
 Verzonden: maandag 21 februari 2022 09:48  
 Aan: 5.1.2.e  
 CC: 5.1.2.e @wur.nl); 5.1.2.e  
 Onderwerp: RE: EPSO: Genome editing April / May 2022 - YOUR availability by 27 Feb pls

Dear 5.1.2.e

Thank you for your email. For me both dates are available.

Best regards,  
 5.1.2.e

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Van: 5.1.2.e @epsomail.org>  
 Verzonden: vrijdag 18 februari 2022 16:41  
 Aan: 5.1.2.e @minInv.nl>  
 cc: 5.1.2.e @wur.nl); 5.1.2.e @wur.nl>; 5.1.2.e @wur.nl>  
 Onderwerp: EPSO: Genome editing April / May 2022 - YOUR availability by 27 Feb pls  
 Urgentie: Hoog

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**Therefore, pls send us your availability by 27 February to decide the date:**

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Thank you and have a nice weekend

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 European Plant Science Organisation, EPSO  
 Rue de l'Industrie 4, 1000 Brussels, Belgium  
 5.1.2.e "epsomail.org" ; T/F: +32.5.1.2.e  
[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09  
 \*\*\*\*\*

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From: 5.1.2.e Sent: 14.12.2021 To: 5.1.2.e : chairs Bcc: participants  
 Subject: EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

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5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** maandag 21 februari 2022 10:51  
**Aan:** 5.1.2.e )  
**CC:** 5.1.2.e @wur.nl; 5.1.2.e  
**Onderwerp:** RE: EPSO: Genome editing April / May 2022 - YOUR availability by 27 Feb pls

Excellent, 5.1.2.e

I hope to confirm the date next week. Until then, pls block both.

With best wishes

5.1.2.e

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**From:** 5.1.2.e @minlnv.nl>  
**Sent:** 21 February 2022 09:48  
**To:** 5.1.2.e @epsomail.org>  
**Cc:** 5.1.2.e @wur.nl) 5.1.2.e @wur.nl; 5.1.2.e @wur.nl>  
**Subject:** RE: EPSO: Genome editing April / May 2022 - YOUR availability by 27 Feb pls

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**CC:** 5.1.2.e @wur.nl) 5.1.2.e @wur.nl; 5.1.2.e @wur.nl>  
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Dr. 5.1.2.e

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25.10.2021

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\*\*\*\*\*

Dit bericht kan informatie bevatten die niet voor u is bestemd. Indien u niet de geadresseerde bent of dit bericht abusievelijk aan u is gezonden, wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

De Staat aanvaardt geen aansprakelijkheid voor schade, van welke aard ook, die verband houdt met risico's verbonden aan het elektronisch verzenden van berichten.

This message may contain information that is not intended for you. If you are not the addressee or if this message was sent to you by mistake, you are requested to inform the sender and delete the message.

The State accepts no liability for damage of any kind resulting from the risks inherent in the electronic transmission of messages.

Van: 5.1.2.e  
 Aan: 5.1.2.e  
 Onderwerp: RE: Plantum - Info over fact-finding mission?  
 Datum: maandag 24 januari 2022 16:40:16

---

Ha 5.1.2.e

Fijn! Ik zal dan proberen rond 12 u te bellen!

Vriendelijke groet,

5.1.2.e

---

Van: 5.1.2.e @plantum.nl>

Verzonden: maandag 24 januari 2022 16:36

Aan: 5.1.2.e @minInv.nl>

Onderwerp: RE: Plantum - Info over fact-finding mission?

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Let op, in deze e-mail verzonden door 5.1.2.e @plantum.nl, zijn één of meerdere verdachte links gevonden die uit voorzorg aangepast zijn, zodat deze opnieuw gecontroleerd worden bij het aanklikken. Links kunnen misbruikt worden om malware op uw systeem te installeren. Klik alleen op nog aanwezige links als de e-mail afkomstig is van een door u vertrouwde afzender.

**Indien dit niet het geval is dient u deze e-mail direct te verwijderen.**

DICTU Servicedesk

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Hoi 5.1.2.e

Geen probleem, kan gebeuren. Dank voor de informatie in ieder geval!

Morgen bellen lijkt me een goed idee, ik kan 11.00-13.00u en na 14.00u. Daarna kan ik bedrijven bellen om te vragen of zij een presentatie kunnen/willen geven.

Groeten,

5.1.2.e

---

Van: 5.1.2.e @minInv.nl>

Verzonden: maandag 24 januari 2022 16:34

Aan: 5.1.2.e @plantum.nl>

Onderwerp: RE: Plantum - Info over fact-finding mission?

---

Ha 5.1.2.e

Excuses dus dat deze mail vertraagd komt.

Over de presentaties:

- Het zou fijn zijn als de bedrijven een presentatie van rond de 20 minuten kunnen geven en dat er dan daarna ruimte is voor vragen en gesprek.
- Onderwerpen waar het auditteam naar zoekt:
  - Hoe ver zijn ze in het gebruik van NGTs/NBTs (of wat willen ze er eventueel mee doen)
  - Waar lopen bedrijven tegenaan om NGTs/NBTs te gebruiken
  - Verwacht ook vragen in de regelgevende context vanuit het auditteam.
- De CIE wil graag de bedrijven los van elkaar spreken (dus niet dat de bedrijven ook bij de andere presentaties zitten), op die manier kan er ook vrijer worden gesproken
- Jullie suggestie om een korte introducerende presentatie te geven als koepelorganisatie is ook positief ontvangen. Lijkt me fijn als jullie kort kunnen neerzetten wat NGTs voor jullie sector algemeen kan betekenen.

Wellicht morgen even kort bellen?

Vriendelijke groet,

5.1.2.e

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Van: 5.1.2.e @plantum.nl>

Verzonden: vrijdag 21 januari 2022 11:58

Aan: 5.1.2.e @minInv.nl>

**Onderwerp:** Plantum - Info over fact-finding mission?

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Let op, in deze e-mail verzonden door **5.1.2.e** [@plantum.nl](mailto:5.1.2.e@plantum.nl), zijn één of meerdere verdachte links gevonden die uit voorzorg aangepast zijn, zodat deze opnieuw gecontroleerd worden bij het aanklikken. Links kunnen misbruikt worden om malware op uw systeem te installeren. Klik alleen op nog aanwezige links als de e-mail afkomstig is van een door u vertrouwde afzender.

**Indien dit niet het geval is dient u deze e-mail direct te verwijderen.**

DICTU Servicedesk

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Ho **5.1.2.e**

Ik hoop dat je een fantastische vakantie hebt!

Ik vroeg mij af of er al iets meer bekend is over de fact-finding mission qua tijden en welke bedrijven ik moet benaderen?

Met vriendelijke groet,

**5.1.2.e**  
Beleidsmedewerker  
06 **5.1.2.e**  
**Plantum**



adres: Vossenburchkade 68 | 2805 PC Gouda  
telefoon: 0182-**5.1.2.e**  
KvK: Rotterdam 24319599  
[http://secure-web.cisco.com/1l2dzY3kM3yIOrhUgBqkE7uytKcd\\_dT\\_YT6U6coN90Rxrz55TKpx1aKORNpgidJdBtXA-YXz-heXeloLLCYoXgKs2sV6\\_cc7IV-32QZ5P7WJ-huy\\_4eoxChsDUNh0uhZUO9Ag2R13yIDCaw4GqTaHCj1a-aJ6WsaXpneOve18Mljf9q070ZG7RigEY05uqWwZt3AG3yYbQY4ZhE6FVCLh\\_XHMHIESHyFbP-shXTpPmTijLDbsVObsW6UqnjWoMFmX5yzJBu19nYxfFnCqfQQ/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1l2dzY3kM3yIOrhUgBqkE7uytKcd_dT_YT6U6coN90Rxrz55TKpx1aKORNpgidJdBtXA-YXz-heXeloLLCYoXgKs2sV6_cc7IV-32QZ5P7WJ-huy_4eoxChsDUNh0uhZUO9Ag2R13yIDCaw4GqTaHCj1a-aJ6WsaXpneOve18Mljf9q070ZG7RigEY05uqWwZt3AG3yYbQY4ZhE6FVCLh_XHMHIESHyFbP-shXTpPmTijLDbsVObsW6UqnjWoMFmX5yzJBu19nYxfFnCqfQQ/http%3A%2F%2Fwww.plantum.nl)  
website: [www.plant-kracht.nl](http://www.plant-kracht.nl)  
volg ons via: [Twitter](#) | [YouTube](#)

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## BO-projectrapportage 2021

### *Duiding kansen van nieuwe veredelings technieken voor verduurzaming landbouw (BO-43-121-001)*

5.1.2.e

Contact: 5.1.2.e [@wur.nl](mailto:5.1.2.e@wur.nl), 5.1.2.e [@wur.nl](mailto:5.1.2.e@wur.nl)

#### Highlights

De wetenschappelijke ontwikkeling in nieuwe veredelings technieken gaan zeer snel. In dit BO-project wordt de wetenschappelijke literatuur gevolgd en ontwikkelingen nader geduid ten aanzien van kansen en bedreigingen voor verduurzaming van de landbouw. De ontwikkelde kennis heeft LNV benut onder andere in het kader van afstemming en duiding ten aanzien van het op 29 april gepubliceerde rapport van de EU-Commissie *"Study on the status of new genomic techniques under union law and in light of the Court of Justice ruling in Case C-528/16"*. In dit EU rapport wordt geconcludeerd dat de huidige GM regelgeving voor toelating van GM-gewassen niet meer "fit for purpose is". Vanuit het BO project is een reactie gegeven op het de op dit rapport volgende *Inception impact assessment Legislation for plants produced by certain new genomic techniques* (16 oktober) en is deelgenomen aan de EU *High level event on new genomic techniques – the way forward for safe and sustainable innovation in the agri-food sector* (29 November). Meer dan in de huidige regelgeving ten aanzien van toepassing van GM in gewassen, staat voor de Commissie centraal dat de nieuwe veredelings technieken kunnen bijdragen aan de doelen van de European Green Deal en de Farm to Fork and biodiversity strategies voor een meer veerkrachtige en duurzaam agri-food systeem. Dit project heeft afgelopen tijd daar verschillende voorbeelden van getoond, casussen daarvoor uitgewerkt en randvoorwaarden geschetst.

In het huidige debat wordt geregeld de angst uitgesproken dat gebruik van nieuwe veredelings technieken om rassen te ontwikkelen die bijvoorbeeld minder gevoelig zijn voor ziekten en plagen, automatisch leidt tot een landbouwsysteem waarin multinationals domineren door middel van patenten. Het projectteam heeft in een **wetenschappelijke publicatie** een nieuw aspect aan dit debat toegevoegd door te onderbouwen dat patenten op intellectueel eigendom van gewassen juist ook gebruikt kunnen worden om te waarborgen dat deze gewassen geteeld worden volgens "goede landbouwpraktijk". De boodschap van deze wetenschappelijke publicatie heeft in 10 vakbladartikelen e.d. aandacht gekregen.

LNV heeft kennis vanuit dit BO-project benut in de beantwoording van twee Kamervragen, respectievelijk gesteld door de PvdD en door het CDA. Als voorbeeld van kennisdoorwerking gaan we hier kort nader in op de beantwoording van de tweede vraag, die kamerlid Boswijk stelde over het bericht 'Rooiseizoen voor biologische aardappeltelers in rook op door schimmelziekte' (kenmerk 2021Z13881, ingezonden op 19 juli 2021), 6 september 2021. Uit het antwoord van de Minister van LNV aan de Kamer: ".... Bent u ermee bekend dat klassieke veredeling de sector op dit moment onvoldoende in staat stelt om tijdig de juiste resistenties tegen *Phytophthora* in te bouwen bij de juiste aardappelsrassen met de juiste eigenschappen (ook qua opbrengstpotentieel, smaak en uiterlijk)? Hoe kunt u de sector hierbij helpen, bijvoorbeeld via nieuwe veredelings technieken als CRISPR-Cas en cisgenese? Erkent u dat dit een enorme milieuwinst kan betekenen voor de aardappelsector? **Antwoord** In het geval van *Phytophthora* heeft de aardappelsector al veel resistentiegenen met klassieke veredeling kunnen opnemen. Met nieuwe veredelings technieken als CRISPR-Cas en cisgenese kunnen de resistenties echter nog sneller worden opgenomen in bestaande succesvolle rassen en daarmee opbrengst en hun geschiktheid voor specifieke afzet behouden. Bovendien kunnen verdelers met deze technieken meer en sneller resistentiegenen voor *Phytophthora* en andere aardappelziekten stapelen, waardoor de resistentie duurzamer wordt. ...." (<https://www.rijksoverheid.nl/documenten/kamerstukken/2021/09/06/antwoorden-op-kamervragen-over-schimmelziekte-in-biologische-aardappelen>).

**Met opmerkingen [LM(1):** Volgens mij heeft WUR of hebben WUR wetenschappers gereageerd en heeft de rijksoverheid gereageerd. Maar er is niet vanuit dit project gereageerd. Wel akkoord om in de output lijkt op te nemen.



In totaal heeft dit project in 2021 in totaal **54** gedocumenteerde kennisproducten, bijdragen aan debat/dialogoog en communicaties opgeleverd. Zie voor een gedetailleerd overzicht onderstaande Bijlage.

**Knelpunten:** Vanwege corona-beperkingen is een aangekondigde workshop speciaal voor Europese beleidsmakers en stakeholders uitgesteld. Deze workshop zou oorspronkelijk gaan over de kansen die de nieuwe plantenveredelingstechnieken bieden ter verdere verduurzaming van de landbouw (inclusief realisering Kringlooplandbouw).

Vanwege corona zijn er ook nauwelijks fysieke bijeenkomsten/debatten/dialogen geweest waarin het projectteam kon deelnemen of daaraan kon bijdragen. Online alternatieven bleken echter te voldoen. Tenslotte, net als in 2020 waren er geen interviews voor de nationale dagbladen. De wetenschapsjournalisten waarmee normaal contacten lopen (o.a. **5.1.2.e**, Volkskrant) gaven aan alle journalistieke aandacht te moeten schenken aan wetenschappelijke inzichten over de corona pandemie.

**Planning:** Behalve de onder knelpunt genoemd corona impact, verder geen afwijkingen t.a.v. de planning van het goedgekeurde werkplan 2021.

#### Producten

Met name te noemen twee wetenschappelijke publicaties (zie Bijlage).

De site [Genetische modificatie - WUR](#) krijgt veel bezoeken, o.a. van scholieren die informatie vragen ten behoeve bijvoorbeeld hun profielwerkstuk (zie Bijlage). Dit laat zien dat de kennis die onder andere door dit BO-project wordt gegenereerd, laagdrempelig beschikbaar is voor een breed publiek.

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#### Bijlage

##### **Output en kennisdoorwerking *Duiding kansen van nieuwe veredelingstechnieken voor verduurzaming landbouw* (BO-43-011.04-003)**

Jaar: 2021

Contact **5.1.2.e**, Wageningen University & Research

**5.1.2.e** [@wur.nl](mailto:5.1.2.e@wur.nl)

#### Beleidsondersteuning (15)

**5.1.2.e** (2021) Beknopt verslag van Global Forum for Food and Agriculture GFFA 13 (2021), Live Stream by Federal Ministry of Food and Agriculture, Berlin, Germany  
Panel 16 Grain Club/OVID: Climate-proof food systems: the role played by new breeding techniques – globally and in Europe (22 januari 2021)

**5.1.2.e** R (2021) Kort literatuuroverzicht over nieuwe veredelingstechnieken in relatie tot agroecologie opgesteld voor **5.1.2.e** tbv Franse collega's. 8 feb 2021

**5.1.2.e** (2021) Deelname aan Stakeholdersessie over laatste ontwikkelingen rond groene biotechnologie. Georganiseerd door LNV samen met I&W, 2 maart 2021.

- 5.1.2.e (2021) Presentatie over MMIP Sleuteltechnologie BO Biotechnologie en Veredeling. Workshop Missie Kringlooplandbouw, WR-presentatie van Beleids- en Topsectoronderzoek A2-A5-ST2. 4 maart 2021.
- 5.1.2.e (2021) Bijdrage aan voorbereiding en deelname aan de online stakeholderbijeenkomst Groene biotechnologie naar aanleiding van de verwachte rapportage van het onderzoek van de Europese commissie over genomische technieken. Organisatie ministeries LNV, I&W en VWS, 30 maart 2021.
- 5.1.2.e (2021) Overleg met Robert van Rijssen (LNV-PAV) over duiding van het op 29 april gepubliceerde rapport van de EU-Commissie "Study on the status of new genomic techniques under union law and in light of the Court of Justice ruling in Case C-528/16", 4 mei 2021
- 5.1.2.e (2021) Notitie gemaak na 5.1.2.e met duiding vanuit het onderzoek over de inhoud van de op 29 april gepubliceerde rapport van de EU-Commissie "Study on the status of new genomic techniques under union law and in light of the Court of Justice ruling in Case C-528/16", 6 mei 2021
- 5.1.2.e (2021) Informatie en literatuurverwijzingen verstrekt aan 5.1.2.e (LNV-PAV) ten behoeve van beantwoording van een Kamervraag van de Partij van de Dieren: "Kan de minister bevestigen dat de eerste Europese importaanvraag voor een gewas dat met de CRISPR/Cas-techniek is gemanipuleerd een type mais is dat resistent is gemaakt tegen het landbouwgif glufosinaat? Waarom gelooft de minister dat de nieuwe genetische technieken, zoals CRISPR/Cas, toch de duurzame beloftes zullen vervullen? Heeft zij hier concrete aanwijzingen voor en kan zij die delen? 17 mei 2021.
- 5.1.2.e ) Deelname aan een digitale bijeenkomst over het rapport van de Europese Commissie over de status van nieuwe genomische technieken, georganiseerd voor stakeholders door I&W, VWS en LNV. 14 juli 2021.
- 5.1.2.e 2021) Beantwoording vragen gesteld kamerlic 5.1.2.e (CDA) over het bericht 'Rooiseizoen voor biologische aardappeltelers in rook op door schimmelziekte' (kenmerk 2021Z13881, ingezonden op 19 juli 2021), 6 september 2021. Zie onder highlights.
- 5.1.2.e (2021) Deelname aan een digitale bijeenkomst met als doel kennismaken nieuwe beleidsmedewerkers op het NPBT-beleidsdossier en elkaar bijpraten over de ontwikkelingen betreffende de status van nieuwe genomische technieken, georganiseerd voor stakeholders door I&W, VWS en LNV. 10 september 2021.
- 5.1.2.e (2021) Mail aan 5.1.2.e met verwijzingen naar eerdere Duurzaamheidsstudie (2011) en publicaties als vervolg daarop om teelt van gewassen die veredeld zijn met GM of NPBT te telen binnen kaders van *good agricultural practice*. Dit als input voor een Europese dialoog in kader van de Impact assessment uitgezet door de EU Commission. 13 oktober 2021
- 5.1.2.e ) Feedback gegeven op de Inception impact assessment legislation for plants produced by certain new genomic techniques. 16 oktober 2021
- 5.1.2.e 2021) Inleiding getiteld "Nieuwe teeltconcepten en ontwikkelingen in veredeling" in kader van de online themadag van de NVWA Inspectie vaktechnische dag met als thema *De Toekomst is gisteren begonnen*. Aansluitend discussie. 25 november 2021.
- 5.1.2.e 5.1.2.e 2021) deelname aan de EU *High level event on new genomic techniques – the way forward for safe and sustainable innovation in the agri-food sector*. Online event, opened by commissioner Frans Timmermans on the 29 November 2021.

**Met opmerkingen [LM(2)]:** Moet de beantwoording van een kamervraag door onze minister gezien worden als output van dit project?

## Wetenschappelijke Output (2)

- 5.1.2.e (2021) The Use of Intellectual Property Systems in Plant Breeding for Ensuring Deployment of Good Agricultural Practices. *Agronomy* 11, 1163. <https://doi.org/10.3390/agronomy11061163>
- 5.1.2.e (2021) Then and Now: A Scientific View on Plant Breeding and Technological Innovation. Pp 21-25 IN: Institute on Science for Global Policy (ISGP), eds: Sustainable Agriculture: The Role of Plant Breeding Innovation. A program and conference organized, facilitated, moderated, and convened by the ISGP with support from the American Seed Trade Association and Euroseeds (Internet Format), November 17—18, 2020. ISBN: 978-1-7334375-2-

3. <http://scienceforglobalpolicy.org/publication/sustainable-agriculture-the-role-of-plant-breeding-innovation-sa-pbi/>; <http://scienceforglobalpolicy.org/wp-content/uploads/6037d0bc53ad4-SA-Plant%20Breeding%20Innovation.pdf>

### Ondersteuning van initiatieven van derden (6)

- 5.1.2.e ) Gesprek met 5.1.2.e , wetenschapsjournalist voor NEMO Kennislink over een artikel over glutenvrije tarwe, 9 februari 2021.
- 5.1.2.e ) Gesprek met filmmaker 5.1.2.e over het script van een 'grounded' SF film De Indringer (Videoland) waarin een onderzoek gedaan wordt op een eiland in de Noordzee aan gewassen die zoutresistent gemaakt zijn met behulp van genetische modificatie, [Indringer - Filmkrant](#), 10 feb 2021.
- 5.1.2.e ) Bijdrage aan film (opnamen van interviews, demonstraties in kas) over phytophthora resistente aardappelen mbv cisgenese en CRISPR technieken in kader van thema "tovenaars en profeten". Initiatief/cast 5.1.2.e en 5.1.2.e . Beoogd gebruik in kader van de Floriade (2022) en NPO-programmering. Crew: Regisseur-5.1.2.e , 5.1.2.e , Geluid-5.1.2.e , Productie 5.1.2.e , Productie Assistent: 5.1.2.e . SUGARRUSH FILM, Draaidag 28 september 2021
- 5.1.2.e ) 'Duurzaam' en 'biologisch' staan elkaar in de landbouw nog in de weg. Opinie & Debat, De Volkskrant, 13 oktober 2021, p. 27 [voorbeeld van directe kennisdoorwerking van het BO-project]
- 5.1.2.e Interview by 5.1.2.e (Food Inspector in the island of Jamaica) as part of a training program. Central question: If the world was facing a famine could biotechnology (genetic modification) be one of or the main answers to the dilemma? 29 November 2021.
- 5.1.2.e Testimonial, belang van het als onderzoeker van GM gewassen aan gaan van een dialoog met de samenleving, [Wageningen dialogue: Bert Lotz Testimonial - YouTube](#), in kader: A hands-on navigator to explore why, when and how to engage with dialogue in research for more impact in society. Wageningen Dialogue Centre, <https://edepot.wur.nl/549568>

### Bijdrage aan onderwijs (17)

- 5.1.2.e (2021) Scholier 5.1.2.e (Libanon Lyceum, Rotterdam) ten behoeve van een profielwerkstuk informatie gemaild over genetische modificatie en ethische aspecten daarvan. 5 februari 2021.
- 5.1.2.e (2021) Online gesprek met 5.1.2.e en 5.1.2.e s (SVWO, Odulphuslyceum in Tilburg) over een praktische opdracht over het onderwerp genetische modificatie voor het vak Biologie, 1 maart 2021.
- 5.1.2.e (2021) Online interview tbv profielwerkstuk over biotechnologie en ethiek. 5.1.2.e , Janieke van Ierland en 5.1.2.e , VWO5, Odulphuslyceum, Tilburg. 4 maart 2021.
- 5.1.2.e (2021) Interview door 5.1.2.e student University College 5.1.2.e t, Middelburg) over sociaal-psychologische en ethische aspecten van het debat rond genetisch gemodificeerde gewassen. 10 maart 2021.
- 5.1.2.e (2021) Lecture and discussion on "Biotechnology, agriculture and ethics" (online), 2e jaars studenten Tuinbouw en akkerbouw /Horticulture and business management. HAS Hogeschool Den Bosch, 15 maart 2021.
- 5.1.2.e (2021) Interview door 5.1.2.e , studente van THUAS (Den Haag) tbv scriptie-onderzoek naar het gebruik van GGO's in relatie tot de "Van boer tot bord" strategie van de Europese Commissie. 23 maart 2021.
- 5.1.2.e (2021) Interview door eerstejaars studenten 5.1.2.e en 5.1.2.e (honourstraject, Universiteit Leiden) over kansen en bedreigingen door gebruik van GMO's in de landbouw. Toespitsing op ecosysteemeffecten. Online, 20 april 2021
- 5.1.2.e (2021) Interview door 5.1.2.e , Master student Universiteit Utrecht t.b.v. scriptie over maatschappelijke implicaties van genome editing technologies, in bijzonder de implicaties m.b.t.

werkgelegenheid in de agrarische en gerelateerde sectoren. 29 april 2021,  
<https://studenttheses.uu.nl/handle/20.500.12932/193?show=full>

- 5.1.2.e (2021) Interview door 5.1.2.e (BSc student Global Sustainability Science UU) over haar bachelor scriptie over de publieke perceptie van CRISPR geproduceerde voedsel, 27 mei 2021.
- 5.1.2.e (2021) Interview door 5.1.2.e, master student RUU. Onderwerp "The attitude of consumer groups towards CRISPR-produced foods in the Netherlands". Interview 31 mei 2021
- 5.1.2.e (2021) Vragen beantwoord van 5.1.2.e (VWO 5) over de schaal waarop GM gewassen worden verbouwd. 2 juni 2021.
- 5.1.2.e (2021) Interview met 5.1.2.e, second-year international student at the HAS University of Applied Sciences in Den Bosch. Bachelor's Degree program Horticulture and Business Management. Writing an article as part of a module on Future Farming, 3 juni 2021
- 5.1.2.e (2021) Vragen tbv een profielwerkstuk van 5.1.2.e en 5.1.2.e uit klas 5 van het Vossius Gymnasium te Amsterdam over toepassingen van genetische modificatie tbv aanpassingen van gewassen aan klimaatverandering. Doorverwezen ook naar online colleges van WU. 16 juni 2021.
- 5.1.2.e (2021) Moderator in WU Master course Current Topics on Biotechnology, on the topic NPBT/GMO/nonGMO; GeneSprout in dialogue with students. In collaboration with the GeneSprout Initiative (young researcher working on Plant Biotech at WUR and at Gent University), Wageningen University, 30 September 2021.
- 5.1.2.e (2021) Moderator in WU Master course Current Topics on Biotechnology, on the topic NPBT and organic agriculture: opportunities and ethical frictions, in collaboration with Leonie white (HollandBio) and 5.1.2.e (Emeritus Professor Organic breeding, WU), 1 October 2021
- HollandBio (2021) Dialoog NGT versus biologische landbouw. Verslag van studenten bijeenkomst op 1 oktober, gemodereerd door Bert Lotz in kader van WU Master course Current Topics on Biotechnology, Nieuwsbrief HollandBio, 12 oktober 2021, [Dialoog NGT versus biologische landbouw - HollandBio](#)
- 5.1.2.e (2021) Interview door 5.1.2.e en 5.1.2.e (Montesori Lyceum, Flevoland) over toepassingen van genetische modificatie in de landbouw; tbv een PPS. 23 november 2021

### Lezingen (3)

- 5.1.2.e. Opportunities of gene editing for breeding crop varieties that fit in sustainable agriculture. Lecture at the First EPSO Plant Science Seminar, 18 March 2021 (online)
- 5.1.2.e (2021) Lezing gehouden getiteld *Gentechnologie en verduurzaming landbouw*, Maatschappij tot Nut van 't Algemeen, Departement Zelhem, 20 september 2021
- 5.1.2.e. The importance of innovation; need and challenges to reform agriculture. Lecture at the 5th international conference for agricultural biotechnology, entitled 'New Genomic Techniques: Science – Legal framework – Public Awareness' organized by AgrobiotechRom (ABR) and the Alliance of the Seeds Industries from Romania (AISR), Bucharest, Romania, 21st September 2021 (hybrid)

### Lijst van overige communicatie (11)

- WUR (2021) Nieuwsberichten bericht naar aanleiding van publicatie 5.1.2.e et al 2021  
<https://www.wur.nl/nl/Onderzoek-Resultaten/Onderzoeksinstituten/plant-research/show-wpr/Patent-op-basis-van-innovatieve-plantenveredeling-kan-bijdragen-aan-verduurzaming-van-de-landbouw.htm>
- <https://www.wur.nl/en/Research-Results/Research-Institutes/plant-research/show-wpr/Patents-based-on-innovative-plant-breeding-can-contribute-to-more-sustainability-in-agriculture.htm>

- AgriHolland (2021) Patenten in plantenveredeling kunnen bijdragen aan verduurzaming. Nieuwsbericht, [AgriHolland Nieuws: 'Patenten in plantenveredeling kunnen bijdragen aan verduurzaming'](#)
- BoerenBusiness (2021) [Octrooi op planten kan helpen bij verduurzaming - Achtergrond Veredeling | Boerenbusiness.nl](#)
- ENP Newswire (2021) [-Wageningen University Research: Patents based on innovative plant breeding can contribute to more sustainability in agriculture, 21 juni 2021](#)
- HollandBio (2021) Evenwichtig octrooisysteem voor innovatieve plantenveredeling kan bijdragen aan verduurzaming van de landbouw. [Lees meer](#), HollandBIO Weekly 2021 - no. 25
- HortiDaily (2021) Patents based on innovative plant breeding can contribute to more sustainability, <https://www.hortidaily.com/article/9332089/patents-based-on-innovative-plant-breeding-can-contribute-to-more-sustainability/> 22 juni 2021
- 5.1.2.e (2021) WUR: patent op veredeling kan zinvol zijn voor landbouw. Patent op basis van innovatieve plantenveredeling kan volgens Wageningen University & Research (WUR) bijdragen aan verduurzaming van de landbouw. Nieuwe Oogst, Akkerbouw, 22 juni 2021
- Akkerbouwbedrijf (2021) Patent innovatieve plantenveredeling voor verduurzaming van de landbouw. [Patent innovatieve plantenveredeling voor verduurzaming van de landbouw \(akkerbouwbedrijf.nl\)](#), 22 juni 2021.
- 5.1.2.e e.a. (2021) Gentech nieuwe impuls land- en tuinbouw. De Boerderij 106 – no 44 (27 juli 2021) Ondernemen, p 7-10.
- 5.1.2.e E (2021) 'Planten zijn ingewikkeld en dus de veredeling ervan ook', Interview, Belgisch digitaal tijdschrift Apache, 28 juli 2021: <https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.apache.be%2F2021%2F07%2F28%2Fplanten-zijn-ingewikkeld-en-dus-veredeling-ervan-ook%3Fcdlink%3DRFdmSmQ1L0picUtxdjFJTWWVL2p2UFUwU1M0VGNKeXB4NnZiMGtPL0IKNIhrVkfOZ21IT3ZodkpJaVRMOjoxMTQzN2Q0ZDYxNDg1MjgzZTc0YmFiN2M3MTg4YmZiMA%253D%253D&data=04%7C01%7Cberty.lotz%40wur.nl%7Ce965cdf6083f425b34fd08d95c2e9b66%7C27d137e5761f4dc1af88d26430abb18f%7C0%7C0%7C637642177557647416%7CUnknown%7CTWFnbgZsb3d8eyjWljoIMC4wLjAwMDAiLCJQIjoIV2luMzIiLCJBTiI6IklhaWwWwIiLCJXVCi6Mn0%3D%7C1000&data=HLh2ONfCR9ZQfzB1sc9JCb8L5ClgVqz6k%2BpeLRqZi20%3D&reserved=0>

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** Namen factfinding missie  
**Datum:** dinsdag 1 februari 2022 17:52:10

---

Ha 5.1.2.e

Hierbij de namen van de Nationale experts:

- 5.1.2.e – Spanje ([https://www.aesan.gob.es/AECOSAN/docs/documentos/eventos/2021/07\\_Nuevas\\_tecnicas\\_genomicas.pdf](https://www.aesan.gob.es/AECOSAN/docs/documentos/eventos/2021/07_Nuevas_tecnicas_genomicas.pdf))
- 5.1.2.e – Oostenrijk ([https://ec.europa.eu/info/persons/panellist-dietmar-vybiral\\_en](https://ec.europa.eu/info/persons/panellist-dietmar-vybiral_en))
- 5.1.2.e – Italië (<https://www.researchgate.net/profile/Ugo-Marchesi>)
- 5.1.2.e – Bulgarije (<https://www.researchgate.net/profile/Ivelin-Rizov>)
- 5.1.2.e (<https://be.linkedin.com/in/swartenbroux-frank-a9471296>)

Ik kon helaas niet de namen van de auditdienst achterhalen, daar moet ik dan morgen even voor bellen.

Met vriendelijke groet,

5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**  
**Ministerie van Landbouw, Natuur en Voedselkwaliteit**

Bezuidenhoutseweg 73 | 2594 AC | Den Haag

Postbus 20401 | 2500 EK | Den Haag

.....  
**M 06 5.1.2.e**

[www.rijksoverheid.nl/Inv](http://www.rijksoverheid.nl/Inv)



**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Schema presentaties bedrijven  
**Datum:** woensdag 2 februari 2022 09:39:40  
**Bijlagen:** [image001.png](#)

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DICTU Servicedesk

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Yes, dankjewel! Als jij mij de links stuurt, dan zal ik die met de bedrijven delen. Ik zal ze ook vragen of ze er bezwaar tegen hebben dat ik ook aansluit. Ik verwacht het niet, maar dan is het in ieder geval netjes gevraagd.

De bedrijven moeten dus pas aansluiten op moment dat hun individuele 'tjidslot' begint lijkt mij? En bedankt voor het sturen van de namen!

---

**Van:** 5.1.2.e@minlnv.nl>  
**Verzonden:** woensdag 2 februari 2022 09:00  
**Aan:** 5.1.2.e@plantum.nl>  
**Onderwerp:** FW: Schema presentaties bedrijven

Heb je hier wat aan?

---

**Van:** 5.1.2.e@nvwa.nl>  
**Verzonden:** dinsdag 1 februari 2022 18:13  
**Aan:** 5.1.2.e@minlnv.nl>  
**Onderwerp:** RE: Schema presentaties bedrijven

Hoi 5.1.2.e

Perfect. Ik zal de namen van de bedrijven ook delen. Dan kunnen ze zich ook over de bedrijven inlezen. Wat betreft de vragen:

1. Krijgen wij de vergaderlink via jullie?

**Je mag de WebEx link die ik je stuurde delen met de deelnemers.**

2. Zou ik ook mogen meeluisteren bij de presentaties van de bedrijven, als vlieg op de muur? Hoeft niet per se maar lijkt me reuze interessant.

**Vanuit HFAA zal de geen probleem zijn. Dan niet als spreekwoordelijke vlieg op de muur (dus anoniem), maar wel aangekondigd, en uiteraard dan met medeweten van de bedrijven.**

3. Wat is het kennisniveau ongeveer van de audit dienst/Commissie? Dan kunnen we ons taalgebruik daar een beetje op aanpassen.

**Dat zal flink variëren. Leden van HFAA zullen niet heel technisch onderlegd zijn, maar hun taak zal ook vooral zijn om ervoor te zorgen dat de juiste vragen worden gesteld, en de antwoorden daarop vast te leggen. De Commissie nodigt landen experts uit die (potentieel) zeer technische vragen kunnen stellen om de (meer algemene) vragen van HFAA/de Commissie beantwoord te krijgen. Verstandig is om bij de presentatie het verhaal minder technisch te laten zijn (dan komt de gewenste boodschap toch beter over), waarbij bij het beantwoorden van vragen van een landenexpert aangesloten kan worden op het technisch niveau dat de landenexpert aangeeft.**

Met vriendelijke groet,

5.1.2.e

---

**Van:** 5.1.2.e <[redacted]@minlnv.nl>

**Verzonden:** dinsdag 1 februari 2022 17:49

**Aan:** 5.1.2.e <[redacted]@nywa.nl>

**Onderwerp:** FW: Schema presentaties bedrijven

Ha 5.1.2.e

Hierbij de bevestiging dat de bedrijven geregeld zijn! Onderstaand zie je nog 3 vragen vanuit Plantum, heb jij hier antwoorden voor of kan jij die vragen uitzetten bij de missieleider?

Vriendelijke groet,

5.1.2.e

---

**Van:** 5.1.2.e <[redacted]@plantum.nl>

**Verzonden:** maandag 31 januari 2022 14:52

**Aan:** 5.1.2.e <[redacted]@minlnv.nl>

**Onderwerp:** RE: Schema presentaties bedrijven

Ha 5.1.2.e

De boel is rond! Zie hieronder het schema:

13.00 – 13.30 Opening en een kort praatje van Plantum

13.30 – 14.30 Presentatie HZPC

14.30 – 15.30 Presentatie 5.1.2.e

15.30 – 16.30 Presentatie 5.1.2.e

Nog een paar vraagjes:

1. Krijgen wij de vergaderlink via jullie?
2. Zou ik ook mogen meeluisteren bij de presentaties van de bedrijven, als vlieg op de muur? Hoeft niet per se maar lijkt me reuze interessant.
3. Wat is het kennisniveau ongeveer van de audit dienst/Commissie? Dan kunnen we ons taalgebruik daar een beetje op aanpassen.

Ik hoor het graag!

Groeten,

5.1.2.e

---

**Van:** 5.1.2.e <[redacted]@minlnv.nl>

**Verzonden:** dinsdag 25 januari 2022 15:51

**Aan:** 5.1.2.e <[redacted]@plantum.nl>

**Onderwerp:** RE: Schema presentaties bedrijven

Thanks voor de update! Ik wacht het dan af

---

**Van:** 5.1.2.e <[redacted]@plantum.nl>

**Verzonden:** dinsdag 25 januari 2022 15:27

**Aan:** 5.1.2.e <[redacted]@minlnv.nl>

**cc:** 5.1.2.e <[redacted]@nywa.nl>

**Onderwerp:** Re: Schema presentaties bedrijven

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DICTU Servicedesk

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Hoi 5.1.2.e

Dank voor deze aanvullende informatie. Ik heb net de drie bedrijven gebeld maar ik kreeg helaas geen gehoor. Ik heb ze daarom een urgente mail (met veel caps lock en dat soort subtiliteiten) gestuurd. Ik zal ze blijven proberen te bereiken, ik houd je op de hoogte!

Met vriendelijke groeten,

5.1.2.e

*Beleidsmedewerker*

+316-5.1.2.e



adres: Vossenburchkade 68 | 2805 PC Gouda  
telefoon: 0182 5.1.2.e  
KvK: Rotterdam 24319599  
[http://secure-web.cisco.com/1krLUIDjKNOAEs11Wzd6k2bAHl31LTxKED0iD0pPvVEH-FOlVOeKxVqUuyd9Rpepuy-cqqdu\\_kJzg4l6J1gAmAfhNEA4geg-1NtOgTzNR6t40R3UesYc4yet8fMFDS58sm99UKzcz2OPvtp49rJ3pxYfZsV9j-nkdvi4NWsiqXniUxhxHxQDHYv8-IInd6WBgrmMaeTBMO54lo22AlrAvTBcInF2l\\_9aIo\\_gzgVHdHdxgi-XlysdJ5sAU939E3JYQ/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1krLUIDjKNOAEs11Wzd6k2bAHl31LTxKED0iD0pPvVEH-FOlVOeKxVqUuyd9Rpepuy-cqqdu_kJzg4l6J1gAmAfhNEA4geg-1NtOgTzNR6t40R3UesYc4yet8fMFDS58sm99UKzcz2OPvtp49rJ3pxYfZsV9j-nkdvi4NWsiqXniUxhxHxQDHYv8-IInd6WBgrmMaeTBMO54lo22AlrAvTBcInF2l_9aIo_gzgVHdHdxgi-XlysdJ5sAU939E3JYQ/http%3A%2F%2Fwww.plantum.nl) | [www.plant-kracht.nl](http://www.plant-kracht.nl)  
website:  
volg ons via: [Twitter](#) | [YouTube](#) | [LinkedIn](#)

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**Van:** 5.1.2.e @minlnv.nl>

**Verzonden:** dinsdag 25 januari 2022 14:18

**Aan:** 5.1.2.e @plantum.nl>

cc:5.1.2.e @nywa.nl>

**Onderwerp:** Schema presentaties bedrijven

Ha 5.1.2.e ,

Ik heb even overlegd. We hebben veel vrijheid hoe het de woensdagmiddag in willen richten. Ik stel daarom het volgende voor:

13.00 – 13.30 Opening en een kort praatje van Plantum en eventueel paar vragen en antwoord  
13.30 – 14.30 Presentatie 1 bedrijf (~30 min), daarna 15-20 min discussie en daarna korte pauze  
14.30 – 15.30 Presentatie 2 bedrijf  
15.30 – 16.30 Presentatie 3 bedrijf

Eventueel ook nog ruimte om op de dinsdag middag tussen 3 en 5 u een presentatie in te plannen  
Met vriendelijke groet,

5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**

**Ministerie van Landbouw, Natuur en Voedselkwaliteit**

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.....

**M 06 5.1.2.e**

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Nationale experts voor fact finding 2022-7397  
**Datum:** vrijdag 4 februari 2022 12:09:04  
**Bijlagen:** [image001.png](#)  
[image004.jpg](#)  
[Fact-finding\\_DG-SANTE\\_080222\\_WFSR\\_desk\\_team.pdf](#)

---

Beste allemaal,

Hierbij de presentatie van ons 5.1.2.e-team, 5.1.2.e en 5.1.2.e doen de presentatie namens het team.

5.1.2.e zorg jij er voor dat deze bij de experts komt?

Goed weekend,

5.1.2.e

5.1.2.e | Wageningen Food Safety Research (part of Wageningen University & Research)

PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands

5.1.2.e @wur.nl | +31 (0) 317 481892 (mobile) | [www.wur.nl/food-safety-research](http://www.wur.nl/food-safety-research)

Wednesday is my regularly day off

Emailh\_logowur



Our disclaimer: <https://www.wur.nl/en/disclaimer-1.htm>

---

**From:** 5.1.2.e

**Sent:** vrijdag 28 januari 2022 17:12

**To:** 5.1.2.e @nvwa.nl>; 5.1.2.e

@minienw.nl>; 5.1.2.e

@lLenT.nl>; 5.1.2.e @minInv.nl>

**Subject:** RE: Nationale experts voor fact finding 2022-7397

Thanks 5.1.2.e



5.1.2.e ken ik vanuit de ENGL werkgroep. Hij is ook passief 'lid' van Euginius.

Een gezellige vent en een 'wollige prater'.

Istituto Zooprofilattico Sperimentale del Lazio e della 5.1.2.e 5.1.2.e Biotechnologie  
 Centro di Referenza Nazionale per la ricerca di OGM Laboratorio Nazionale di Riferimento  
 per alimenti e mangimi geneticamente modificati Biotechnology Unit National Reference  
 Laboratory for GM food and feed

Verder is 5.1.2.e een belangrijke meneer vanuit de EC die weet waar hij het over heeft: 5.1.2.e @ec.europa.eu. DG SANTE, Unit E3

Biotechnology. Bijgevoegd een presentatie van hem over "Update from SANTE Study on the status of new genomic techniques under Union law and in light of the CJEU ruling in case C-528/16".

De andere mensen ken ik niet uit het GGO/ENGL wereldje.



Verder heb ik mijn presentatie af, en die laat ik nu circuleren binnen WFSR. Zodra deze volgende week spits is, stuur ik 'm ook aan jullie.

Goed weekend,

5.1.2.e

5.1.2.e | Wageningen Food Safety Research (part of Wageningen University & Research)

PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands

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Wednesday is my regularly day off

Emailh\_logowur



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---

**From:** 5.1.2.e @nvwa.nl>

**Sent:** vrijdag 28 januari 2022 16:20

**To:** 5.1.2.e minienw.nl>; 5.1.2.e

@lLenT.nl>; 5.1.2.e

@minlnv.nl>; 5.1.2.e @wur.nl>

**Subject:** Nationale experts voor fact finding 2022-7397

Ter info.

Ik kreeg de volgende namen van de personen die naast HFAA leden een bijdrage gaan leveren aan de fact finding missie NGT:

- 5.1.2.e 5.1.2.e – Spanje

(5.1.2.e

- 5.1.2.e – Oostenrijk 5.1.2.e

- 5.1.2.e – Italië (5.1.2.e )

- 5.1.2.e – Bulgarije 5.1.2.e )

- 5.1.2.e (5.1.2.e

De links heb ik bij de personen gezocht om na te gaan waar de kennis/competentie zit mbt het onderwerp van de missie.

Met vriendelijke groet,

5.1.2.e

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## Safety of NGT applications in food & feed production

8 February 2022, 5.1.2.e & 5.1.2.e



# Desk Research at WFSR

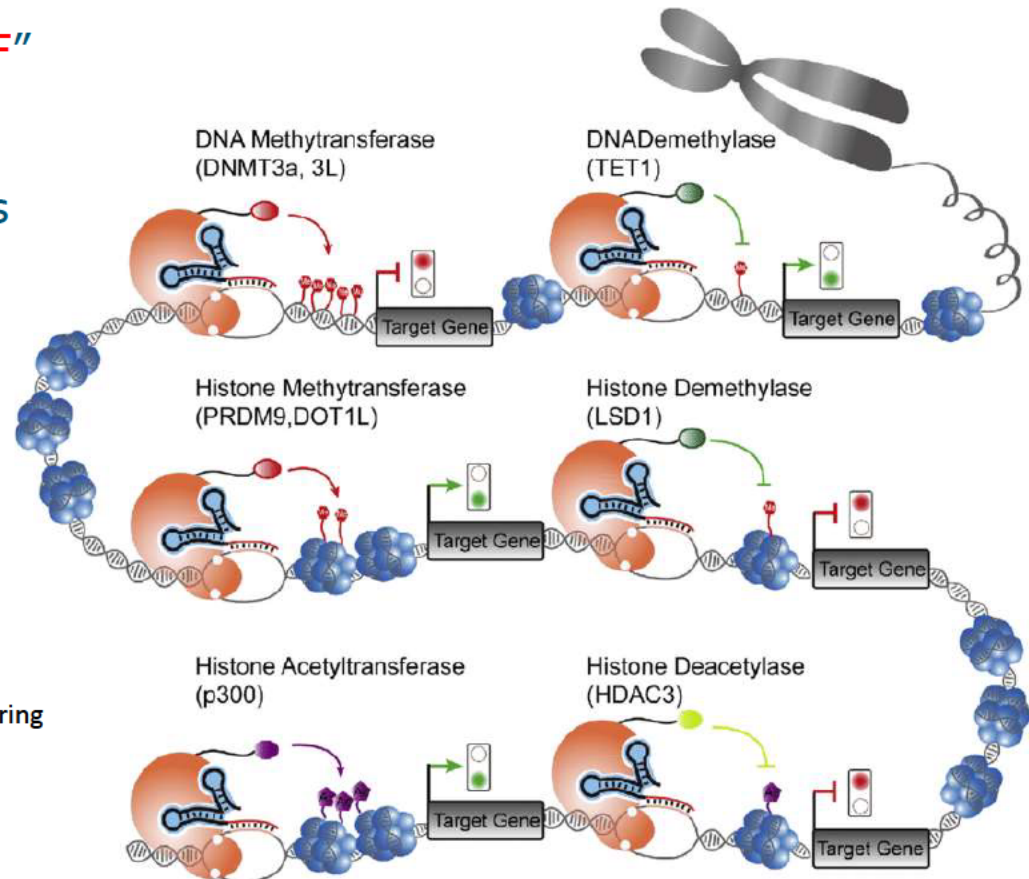
- Monitoring developments in biotechnology for food/feed applications
- Food & feed safety assessment GM plant dossiers for EU market authorization
- Dutch ministry of Agriculture, EU/EFSA, OECD, international agencies
- Collaboration with GMO detection team

## Topics in this presentation

- Developments epigenome editing
- Hazards in genome editing: off-target effects
- Product-based or Process-based risk assessment
- Options on how to deal with genome editing: Safe-by-Design
- OECD

# Epigenome editing

- Way “to turn genes **ON** or **OFF**”
- No edits in the genetic code, but modification of DNA bases or DNA-associated proteins
- Changes heritable, but transient (reversible)



X. Xu & L. S. Qi, A. CRISPR–dCas Toolbox for Genetic Engineering and Synthetic Biology, J. Mol. Biol. (2018), <https://doi.org/10.1016/j.jmb.2018.06.037>

# Epigenome editing: status & challenges

- Targeted modifications of DNA methylation status of genes FWA (flowering time) and AREB1 (drought stress) under research

- Examples epicrop:  
MSH-1 effect on DNA methylation pattern: soybean, tomato  
→ increased growth & yields



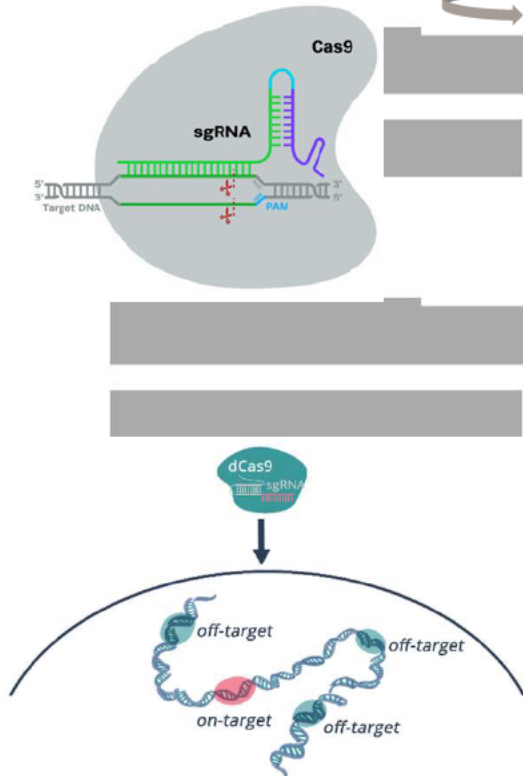
- Epigenome editing considered a NGT, and GM by European Commission
- In USA: not regulated
- Detection: epigenetic status of DNA and histones can be detected, but origin / cause of epigenetic state cannot be verified



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© 2005 Blackwell Publishing Ltd, *Journal of Internal Medicine* 258: 225–232

## s nucleases



11/11/2014

plate →  
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dom)

N-3



- 1) Which factors affect occurrence of off-target genome edits and what is the nature and frequency of off-target modifications?
- 2) What are potential food/feed safety risks of unintended modifications and what does this mean for risk assessment of genome-edited plants?

TTW Biotechnology & Safety Programme / KB-WOT

Off-target modifications by CRISPR-Cas:  
relevant for safety assessment strategies  
for new (GM) plant varieties?

Evvy Battaglia-de Wilde, Jan Pieter van der Berg, Lianne Bouwman, Adinda De Schrijver,  
Ruud A. de Maagd, Gijs A. Kester



WAGENINGEN  
UNIVERSITY & RESEARCH



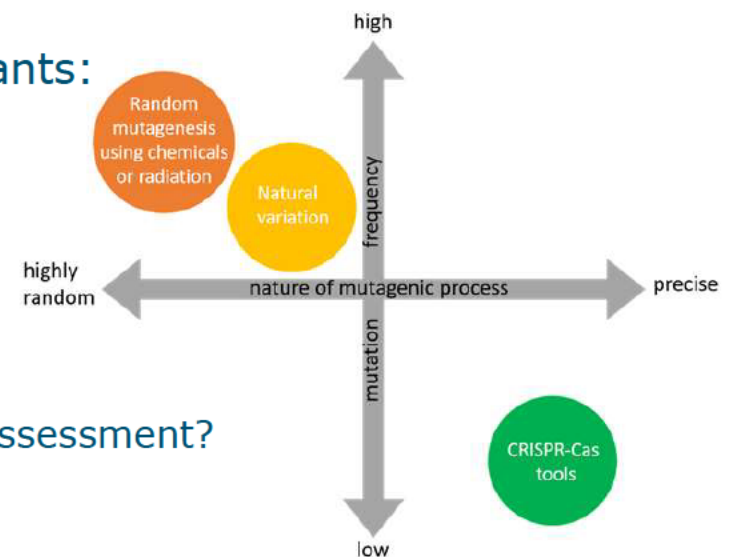
# Safety of genome-edited plants - main findings

Off-target modifications details (mainly in T0 generation):

- Small insertions/deletions (1-22 base pairs) or single nucleotide substitutions
- Insertion of vector DNA 1x observed (= transgenic event!)
- Few mismatches off-target vs on-target sequence (1-3 nucleotides)
- Off-target edits often in protein-coding regions & target gene homologs

Safety assessment of CRISPR-Cas gene-edited plants:

- Likelihood off-target mutations low(er) vs classical mutagenesis or vs natural variation
- Transgenic event relevant for safety discussion genome editing
- Off-target analysis needed within current GM safety assessment?



# Product- vs Process-based risk assessment

Map the Strengths and Weaknesses of scenarios for future GM legislation:  
Product-based regulation; Regulation with exemptions for certain types of edits  
Food safety, Traceability and enforcement, Economic & societal effects

- 3 Sectors:
  - Plant breeding
  - Industrial microbiology
  - Livestock farming



Most important distinctions between sectors (NL stakeholders):

- Contained use (microbiology)
- Conventional use of mutagenesis techniques (plant and microbiology)
- Potential severe consequences of off-target edits (animal)

# Product- vs Process-based experiences outside EU

Similarities: transgenic organisms/organisms with recombinant DNA are considered GMOs and require a safety assessment (food/feed and environmental) everywhere.

Exemptions of certain genome editing techniques from GM legislation

- Japan: exclusion of SDN-1; notifications requested for genome edited plants
- Argentina: Decision case-by-base by Biosafety committee
  - No GMO if: an organism does not have a novel combination of genetic material obtained through the use of modern biotechnology
  - Cisgenesis: often considered GMO



# Product vs Process-based experiences outside EU

Examples product-based legislation:



- **Canada**

All plants with novel traits require an assessment, regardless of methods used to obtain the plants. Genetic engineering = novel.  
Discussion regarding genome editing



- **USA**

- **USDA-APHIS:** Early consultations. Genome editing = genetic engineering. Exemptions possible for: plants with changes that could have been achieved by conventional breeding & plants with a previously assessed modification.
- **FDA:** Early consultations. Food from genetically engineered plants does not require approval, unless it contains an unapproved food additive.

Other regulations in place that enable action in case of (food) safety issues  
Both countries: guidance being drafted for genome edited plants

## Experiences outside EU: detection & traceability

- Japan: enforceability of regulation is a strength.

Products from exempted techniques cannot be distinguished from conventional products. Recombinant DNA and newly expressed proteins in GMOs are detectable



- USA: Once a product is approved, no need for a detection method.



- Canada: no detection method for GM food required. Authorized biotech products are considered safe. Risk-based approach towards enforcement.



# The question of labelling

In EU: labelling integrated in GMO legislation. Products containing GMOs (>0.9%) must be labelled.

View on labelling elsewhere:

- Japan: Mandatory labelling of GM foods. No mandatory labelling of genome edited food
- Many other nations: No mandatory labelling of GMO foods.
  - Labelling may be required based on product characteristics: health & safety purposes: e.g. high-oleic soybean oil, allergenicity
  - Voluntary labelling is possible.



Illustrations: Bing (CC\_BY)



# Safe-by-design in crop breeding

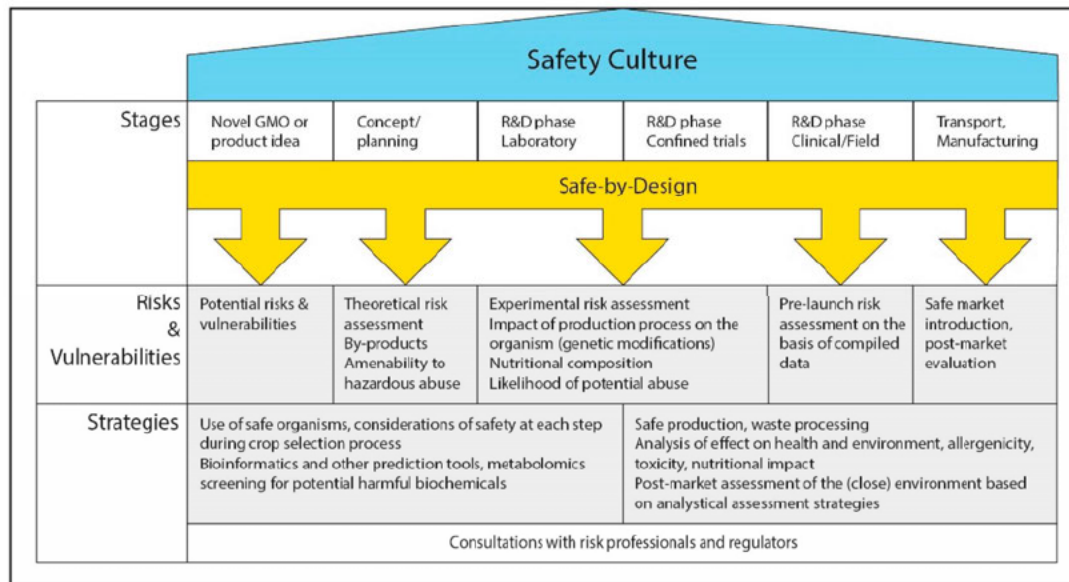
- Concept for safety, already a standard in other sectors, e.g. construction, nanotechnology
- Within WUR: biotechnology & safety research programme
- Safe development of novel biotechnology products
- Link with EU responsible research & innovation approach
- Safe-by-Design initiative at OECD (proposed by NL)





# Safety by Design in crop breeding innovation

- Focus on safe use of new genomic techniques



5.1.2.e et al, 2020,

DOI: 5.1.2.e

- Participatory project

- Involvement of relevant stakeholders in the drafting of a SbD framework

# New Plant Breeding Techniques at OECD

- 2 Working Parties on biosafety: Environment; Food & Feed
- Information sharing on developments in biosafety of NPBTs
  - Annual meeting reports (public)
  - Japanese proposal for permanent platform
- Revision of Council Recommendation (in progress)
  - Members ask: extension towards NPBTs?



---

# Thank you for your attention

---

5.1.2.e

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5.1.2.e



# Plantum

**The Dutch association for breeding, tissue culture, production and trade of seeds and young plants**

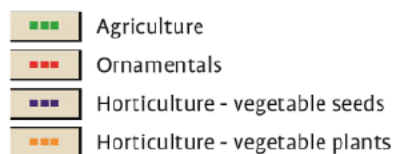
5.1.2.e

– policy advisor

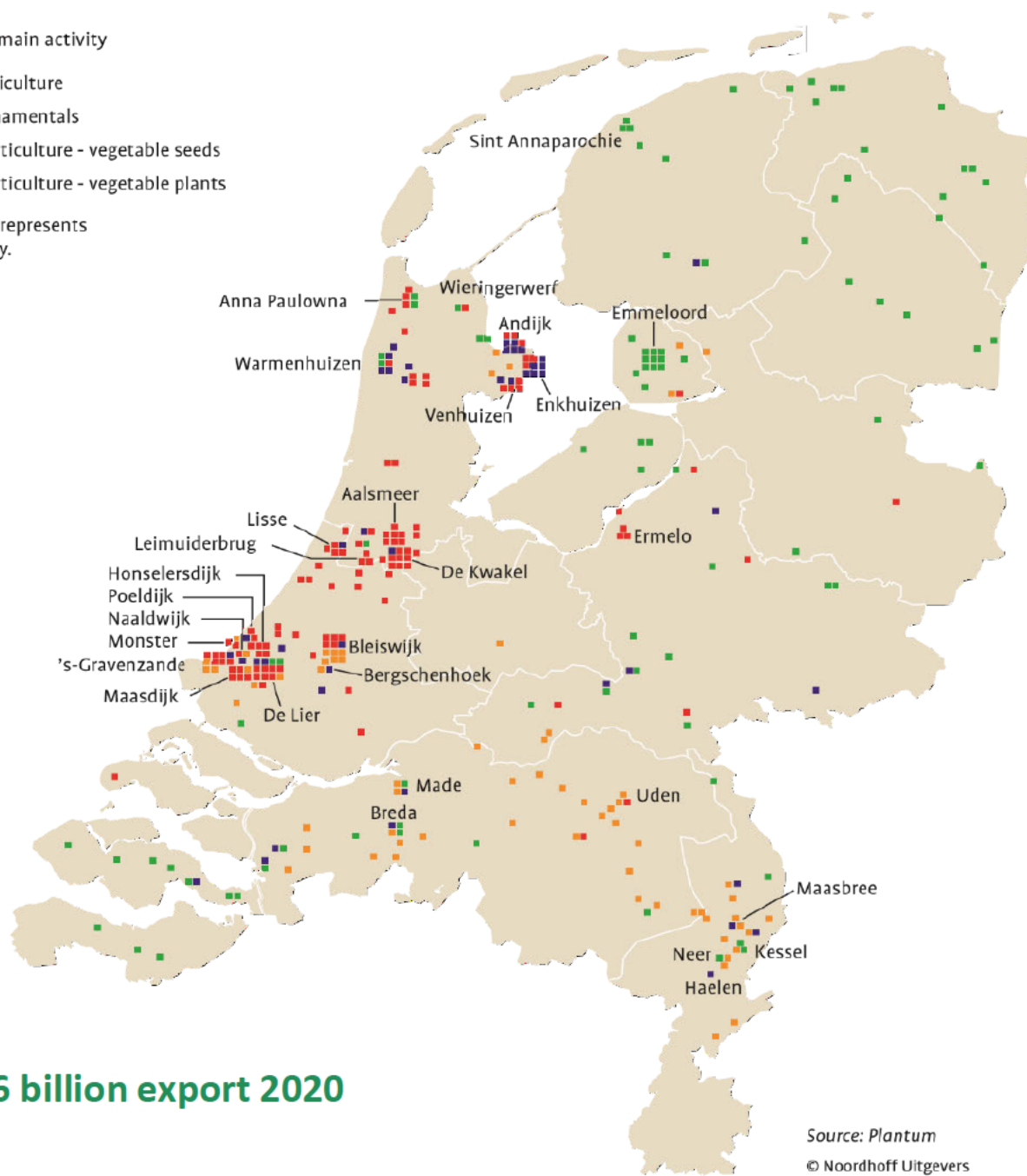




Companies' main activity



Each square represents one company.



**€ 3.6 billion export 2020**

Source: Plantum

© Noordhoff Uitgevers

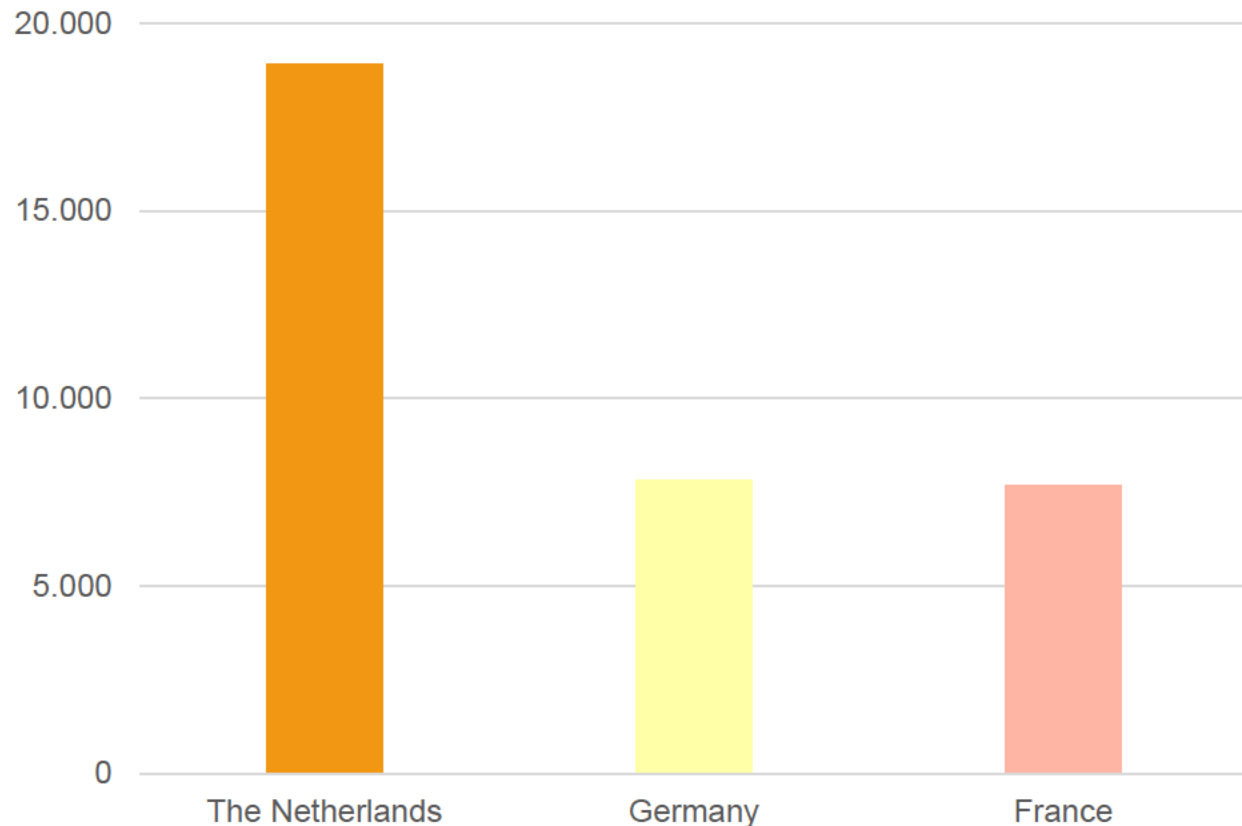
# Dutch companies in the world



# Innovation

Average 15% of turnover invested in R&D

Top applicants for plant variety protection in the EU  
(number of applications 1995 – March 2016)



# Horizontal committees

- **Breeding methods**
- Intellectual property
- Export and trade barriers
- Crop protection and environmental issues
- Research
- Biodiversity
- Image (Public affairs)
- Organic farming



# NGT: why?

- Speed up breeding process
- Contribution to Green Deal and UN SDG
- Different regulatory oversight for similar products not justified

# NGT: what do we need?

- No undue administrative and financial burdens
- Compulsory tracing and labelling is unenforceable
  - Instead focus on transparency and information sharing
- Level playing field

# NGT: the goal

- Broad access to breeding technologies
  - For all markets and stakeholders
  - Especially important in order to include SME



**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** Plantum - Presentatie fact-finding mission 9 februari  
**Datum:** maandag 7 februari 2022 11:44:37  
**Bijlagen:** [Outlook-FOTO42\\_log.png](#)  
[FactFindingMission\\_Plantum.pptx](#)

---

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DICTU Servicedesk

Beste 5.1.2.e ,

In de bijlage vindt u de presentatie die ik woensdag 13.00u zal geven namens Plantum voor de fact-finding mission. Mochten er nog vragen zijn, dan hoor ik dat uiteraard graag.

Met vriendelijke groeten,

5.1.2.e  
 Beleidsmedewerker  
 +316-5.1.2.e



**adres:** Vossenburchkade 68 | 2805 PC Gouda  
**telefoon:** 0182-5.1.2.e  
**KvK:** Rotterdam 24319599  
[http://secure-web.cisco.com/1F1kr6n7nGASGJctXxqjRlVlQwmwtDhXzRY4gCpvesQZ-ryqGth8ZyVIN0dKVQJotVKgNOkwnTETHYwDV6ivePA27ocqV1pWOOQYrob2KjCzL4RUlGNztUM1GB-irWfwm\\_GYSXtRmrRyfyQ5Vyo5ffrCFoBkBP0AriUebGX63r9fx79FXUvHto0KwgfMM71uMwadpxwW2fEWpNExt0d65lyG8t9MeKnWeS-MftOvftZwtVfi2\\_OVKo3d7EWS5Hm1GuPcc4-JpkRd0DPr3CD5AOPzA/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1F1kr6n7nGASGJctXxqjRlVlQwmwtDhXzRY4gCpvesQZ-ryqGth8ZyVIN0dKVQJotVKgNOkwnTETHYwDV6ivePA27ocqV1pWOOQYrob2KjCzL4RUlGNztUM1GB-irWfwm_GYSXtRmrRyfyQ5Vyo5ffrCFoBkBP0AriUebGX63r9fx79FXUvHto0KwgfMM71uMwadpxwW2fEWpNExt0d65lyG8t9MeKnWeS-MftOvftZwtVfi2_OVKo3d7EWS5Hm1GuPcc4-JpkRd0DPr3CD5AOPzA/http%3A%2F%2Fwww.plantum.nl) | [www.plantum.nl](http://www.plantum.nl) | [www.plant-kracht.nl](http://www.plant-kracht.nl)  
**website:**  
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**Cc:** 5.1.2.e  
**Onderwerp:** Re: Plantum - Presentatie fact-finding mission 9 februari  
**Datum:** maandag 7 februari 2022 20:57:48  
**Bijlagen:** [image001.png](#)

---

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DICTU Servicedesk

Beste 5.1.2.e

Mijn presentatie mag gedeeld worden en ik zal deze inderdaad in het Engels geven.  
 Hartelijk dank voor het delen van de aanwezigen! Mocht ik nog presentaties krijgen van bedrijven die gedeeld mogen worden, dan stuur ik die uiteraard door.

Met vriendelijke groeten,  
 5.1.2.e

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---

**From:** 5.1.2.e @nvwa.nl>  
**Sent:** Monday, February 7, 2022 8:34:43 PM  
**To:** 5.1.2.e @plantum.nl>  
**Cc:** 5.1.2.e @minlnv.nl>  
**Subject:** RE: Plantum - Presentatie fact-finding mission 9 februari

Beste 5.1.2.e

Dank voor jouw presentatie.  
 Mag ik die vooraf als pdf delen met de missie leidster? Zij zal ze delen met de landenexperts en de vertalers.  
 Mag ik aannemen dat je de presentatie ook in het Engels zal geven (en dus geen structureel gebruik zal maken van de vertalers)?

Ter info de personen vanuit de missie op woensdag aanwezig zullen zijn:

**Commission officials:**

- 5.1.2.e, Directorate F, Lead auditor (in spite of this not being an audit)
- 5.1.2.e, Directorate F, co-auditor
- 5.1.2.e, Directorate E, policy officer
- 5.1.2.e, Dir E, policy officer
- 5.1.2.e, Dir E, policy officer

**Interpreters:**

- 5.1.2.e
- 5.1.2.e

**National experts:**

- 5.1.2.e, Austria
- 5.1.2.e, Spain
- 5.1.2.e, Italy
- 5.1.2.e, Bulgaria

Met vriendelijke groet,  
 5.1.2.e

---

**Van:** 5.1.2.e @plantum.nl>  
**Verzonden:** maandag 7 februari 2022 11:44  
**Aan:** 5.1.2.e @nvwa.nl>  
**Cc:** 5.1.2.e 1.2.e @minlnv.nl>  
**Onderwerp:** Plantum - Presentatie fact-finding mission 9 februari

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Met vriendelijke groeten,

5.1.2.e

*Beleidsmedewerker*

+316 5.1.2.e



adres: Vossenburchkade 68 | 2805 PC Gouda  
telefoon: 0182-5.1.2.e  
KvK: Rotterdam 24319599  
website: [http://secure-web.cisco.com/1cGEaRSgfwyWZJLC\\_hylhl4SsbajclOha9LuzXLTaE5ZjTwJDXgv8oSDkYlpr3vFLybNlLm9-IJJ\\_6JRiuUDqCzvBIT7B3hXIA54nnb5Do784MxkDSm6psUeOD9HDPtPq\\_LPnMfrnDOURuqFYe-NscfoiLc2fHoM8o83x84MEULgmICswhoS\\_Zyn6r3rzcaCF96Jaa4E6rP4XwAg\\_tm2JIQWLgbl-NK2zch\\_JUzoIoyb0my4x7AfP3Qw8d3YYdNBMAcO8sdnrTxF4-tVA0Zyw/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1cGEaRSgfwyWZJLC_hylhl4SsbajclOha9LuzXLTaE5ZjTwJDXgv8oSDkYlpr3vFLybNlLm9-IJJ_6JRiuUDqCzvBIT7B3hXIA54nnb5Do784MxkDSm6psUeOD9HDPtPq_LPnMfrnDOURuqFYe-NscfoiLc2fHoM8o83x84MEULgmICswhoS_Zyn6r3rzcaCF96Jaa4E6rP4XwAg_tm2JIQWLgbl-NK2zch_JUzoIoyb0my4x7AfP3Qw8d3YYdNBMAcO8sdnrTxF4-tVA0Zyw/http%3A%2F%2Fwww.plantum.nl) | [www.plant-kracht.nl](http://www.plant-kracht.nl)  
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Van: 5.1.2.e  
 Aan: 5.1.2.e  
 Cc: 5.1.2.e  
 Onderwerp: FW: Participants list  
 Datum: dinsdag 8 februari 2022 13:41:00

---

Beste 5.1.2.e

Ter info de lijst met personen die morgen bij de HFAA missie aanwezig zullen zijn.

**Wednesday 9 Feb:**

- Ministry of Infrastructure and Water management
  - 5.1.2.e , Senior Policy Advisor Biotechnology
- Human Environment and Transport Inspectorate
  - 5.1.2.e , Senior Inspector
- Netherlands Food and Consumer Products Safety Authority
  - 5.1.2.e , Senior Inspector

**Company representatives**

- 5.1.2.e , Policy advisor Plantum (
- 5.1.2.e , Research & Development Director HZPC
- 5.1.2.e , Director Research & Development Bejo Zaden B.V.
- 5.1.2.e , Head of Research Bejo Zaden B.V.
- 5.1.2.e .2.e , Director Anthura
- 5.1.2.e , Manager Cell biology Anthura

**Commission officials:**

- 5.1.2.e , Directorate F, Lead auditor (in spite of this not being an audit)
- 5.1.2.e , Directorate F, co-auditor
- 5.1.2.e , Directorate E, policy officer
- 5.1.2.e , Dir E, policy officer
- 5.1.2.e , Dir E, policy officer

**Interpreters:**

- 5.1.2.e
- 5.1.2.e

**National experts:**

- 5.1.2.e , Austria
- 5.1.2.e , Spain
- 5.1.2.e Italy

- 5.1.2.e [redacted], Bulgaria

Met vriendelijke groet,  
5.1.2.e [redacted]

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** Re: Participants list  
**Datum:** dinsdag 8 februari 2022 11:14:44  
**Bijlagen:** [image001.png](#)

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DICTU Servicedesk

En de laatste:

5.1.2.e  
 Director Research & Development  
 Bejo Zaden B.V.

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**From:** 5.1.2.e @minlnv.nl>  
**Sent:** Tuesday, February 8, 2022 9:25:25 AM  
**To:** 5.1.2.e @plantum.nl>  
**Subject:** RE: Participants list

Bedankt!

---

**Van:** 5.1.2.e @plantum.nl>  
**Verzonden:** dinsdag 8 februari 2022 09:24  
**Aan:** 5.1.2.e @minlnv.nl>  
**Onderwerp:** Re: Participants list

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Hoi 5.1.2.e,

Hierbij alvast wat namen:

5.1.2.e	5.1.2.e
5.1.2.e	5.1.2.e
5.1.2.e	5.1.2.e
5.1.2.e	5.1.2.e
5.1.2.e	5.1.2.e

Ik wacht nog even op één akkoord van iemand van 5.1.2.e zij zullen de presentatie met zijn 2en doen, net als 5.1.2.e Maar deze heb je dan alvast.

Groeten,  
 5.1.2.e

Met vriendelijke groeten,

5.1.2.e

Beleidsmedewerker

+316 5.1.2.e



adres: Vossenburchkade 68 | 2805 PC Gouda  
telefoon: 0182 5.1.2.e  
KvK: Rotterdam 24319599  
[http://secure-web.cisco.com/1PgDHWCoSeUYU\\_9DbdSle6fPr5NTjwIdTw-TpMuLYmX8JEOWZ-lStRUKkIgJ25KhFoQ1dUZq-9KsUOAVFb43pRb6d0tCiQRhuGstsZtx6OWq8PSq3BVHB7AV78eVyivFKE8WqL-2awW99j38VyaEsA0aKh7EweQx5rVgzTWVqVDN\\_Sn1F0gnMgXaHbb5m0vikwBlyLCGZOigSHQbBWj-Ux48ukdbm-u4TdLzRpEp-DCGuC6eNpfHIJ1NceckR/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1PgDHWCoSeUYU_9DbdSle6fPr5NTjwIdTw-TpMuLYmX8JEOWZ-lStRUKkIgJ25KhFoQ1dUZq-9KsUOAVFb43pRb6d0tCiQRhuGstsZtx6OWq8PSq3BVHB7AV78eVyivFKE8WqL-2awW99j38VyaEsA0aKh7EweQx5rVgzTWVqVDN_Sn1F0gnMgXaHbb5m0vikwBlyLCGZOigSHQbBWj-Ux48ukdbm-u4TdLzRpEp-DCGuC6eNpfHIJ1NceckR/http%3A%2F%2Fwww.plantum.nl) | [www.plant-kracht.nl](http://www.plant-kracht.nl)  
website:  
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Verzonden: maandag 7 februari 2022 17:00  
Aan: 5.1.2.e <[5.1.2.e@plantum.nl](mailto:5.1.2.e@plantum.nl)>  
Onderwerp: FW: Participants list

Ha 5.1.2.e

Is het al bekend welke namen van de bedrijven de presentatie zullen doen? Of liever geen deelnemerlijst van de bedrijven?

Vriendelijke groet,  
5.1.2.e

Van: 5.1.2.e <[5.1.2.e@nvwa.nl](mailto:5.1.2.e@nvwa.nl)>  
Verzonden: maandag 7 februari 2022 15:55  
Aan: 5.1.2.e <[5.1.2.e@minlnv.nl](mailto:5.1.2.e@minlnv.nl)>  
Onderwerp: FW: Participants list

Ho 5.1.2.e

Kan jij een lijstje aanleveren om de woensdag hieronder aan te vullen?

Met vriendelijke groet,  
5.1.2.e

Van: 5.1.2.e <[5.1.2.e@ec.europa.eu](mailto:5.1.2.e@ec.europa.eu)>  
Verzonden: maandag 7 februari 2022 15:54  
Aan: 5.1.2.e <[5.1.2.e@ec.europa.eu](mailto:5.1.2.e@ec.europa.eu)>  
CC: 5.1.2.e <[5.1.2.e@ec.europa.eu](mailto:5.1.2.e@ec.europa.eu)>; 5.1.2.e <[5.1.2.e@minlnv.nl](mailto:5.1.2.e@minlnv.nl)>  
Onderwerp: Participants list

Dear 5.1.2.e,

Find below the participants from the Dutch side for today and tomorrow (with those in **bold** presenting the programmed topic(s)):

**Monday 7 Feb:**

- **Ministry of Infrastructure and Water management**
  - 5.1.2.e <[5.1.2.e@ec.europa.eu](mailto:5.1.2.e@ec.europa.eu)>, Senior Policy Advisor Biotechnology

Human Environment and Transport Inspectorate

- 5.1.2.e , Senior Inspector
- **Ministry for Agriculture, Nature and Food Quality**
  - 5.1.2.e , **Senior Policy Officer Biotechnology**
- Netherlands Food and Consumer Products Safety Authority
  - 5.1.2.e , Chief Food Safety Officer
  - 5.1.2.e , Senior Inspector

**Tuesday 8 Feb:**

- Ministry of Infrastructure and Water management
  - 5.1.2.e , Senior Policy Advisor Biotechnology
- Human Environment and Transport Inspectorate
  - 5.1.2.e , Senior Inspector
- Ministry for Agriculture, Nature and Food Quality
  - 5.1.2.e 5.1.2.e , Senior Policy Officer Biotechnology
- Netherlands Food and Consumer Products Safety Authority
  - 5.1.2.e , Senior Inspector
- **Wageningen Food Safety Research**
  - 5.1.2.e , **program manager Feed & Food**
  - 5.1.2.e , **Researcher GMO detection and Species identification**
  - 5.1.2.e , **Researcher**
  - 5.1.2.e , **Researcher**

**Wednesday 9 Feb:**

I do not yet have a list of participants for Wednesday. I will send it when it comes available.

**Thursday 10 Feb:**

- Ministry of Infrastructure and Water management
  - 5.1.2.e , Senior Policy Advisor Biotechnology
- **Human Environment and Transport Inspectorate**
  - 5.1.2.e , **Senior Inspector**
- Ministry for Agriculture, Nature and Food Quality
  - 5.1.2.e , Senior Policy Officer Biotechnology
- **Netherlands Food and Consumer Products Safety Authority**
  - 5.1.2.e , **Senior Inspector**

**Friday 11 Feb:**

- Ministry of Infrastructure and Water management
  - 5.1.2.e , Senior Policy Advisor Biotechnology
- Human Environment and Transport Inspectorate
  - 5.1.2.e , Senior Inspector
- Ministry for Agriculture, Nature and Food Quality
  - 5.1.2.e , Senior Policy Officer Biotechnology
- Netherlands Food and Consumer Products Safety Authority
  - 5.1.2.e , Manager Division Expertise
  - 5.1.2.e , Senior Inspector

Kind regards,

5.1.2.e

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Aanvullende info fact finding missie  
**Datum:** woensdag 16 februari 2022 17:57:03

---

Hoi 5.1.2.e

Dank je voor jouw hulp hierbij.  
 Het is geen probleem als het niet in 1 email past.

Met vriendelijke groet,  
 5.1.2.e

---

**Van:** 5.1.2.e @plantum.nl>  
**Verzonden:** dinsdag 15 februari 2022 16:03  
**Aan:** 5.1.2.e @minInv.nl>  
**CC:** 5.1.2.e @nvwa.nl>  
**Onderwerp:** Re: Aanvullende info fact finding missie

Hoi 5.1.2.e en 5.1.2.e

Ik ben de presentaties van bedrijven aan het verzamelen, alsmede de genoemde achtergrond info die gevraagd wordt en die bedrijven zelf nog willen aanleveren (sommige aanvullende info n.a.v. vragen die gesteld werden).

Ik hoop alles deze week op te kunnen sturen, bereid jullie voor op een vrij lang bericht met veel bijlagen. Ik hoop dat het in één mail kan.

Groeten,  
 5.1.2.e

[Outlook voor Android](#) downloaden

---

**From:** 5.1.2.e @minInv.nl>  
**Sent:** Tuesday, February 15, 2022 3:58:57 PM  
**To:** 5.1.2.e @plantum.nl>  
**Cc:** 5.1.2.e @nvwa.nl>  
**Subject:** Aanvullende info fact finding missie

Ha 5.1.2.e

Ik kreeg de volgende vragen van 5.1.2.e (zie CC) over aanvullende informatie voor de factfinding missie. Is het mogelijk deze te delen?

- Presentaties van bedrijven (voor zover ze die willen delen)
- Information on the frozen programmes (if anything is available), as explained by Robert Graveland/HZPC
- The link to the press release in relation to the agreement of Bejo
- A statement (if available) from the horizontal/standing committee of Plantum in relation to NGTs, including on labelling

Met vriendelijke groet,



5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**  
**Ministerie van Landbouw, Natuur en Voedselkwaliteit**

Bezuidenhoutseweg 73 | 2594 AC | Den Haag

Postbus 20401 | 2500 EK | Den Haag

.....  
**M 06 5.1.2.e**

[www.rijksoverheid.nl/Inv](http://www.rijksoverheid.nl/Inv)

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5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** vrijdag 18 februari 2022 16:41  
**Aan:** 5.1.2.e )  
**CC:** 5.1.2.e @wur.nl); 5.1.2.e  
**Onderwerp:** EPSO: Genome editing April / May 2022 - YOUR availability by 27 Feb pls

**Urgentie:** Hoog

Dear 5.1.2.e,

As agreed during the last meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

Therefore, pls send us your availability by 27 February to decide the date:

Best: Th, 28.4.2022: yes, possible, no  
 Reserve: Th, 5.5.2022: yes, possible, no

Thank you and have a nice weekend

5.1.2.e

\*\*\*\*\*

5.1.2.e  
 5.1.2.e

European Plant Science Organisation, EPSO  
 Rue de l'Industrie 4, 1000 Brussels, Belgium  
 5.1.2.e "epsomail.org ; T/F: +32-2-5.1.2.e  
[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

**From:** 5.1.2.e **Sent:** 14.12.2021 **To:** 5.1.2.e **Cc:** chairs **Bcc:** participants  
**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the files we mentioned during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group.

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, 5.1.2.e (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by 5.1.2.e, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

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**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

5.1.2.e and 5.1.2.e

EPSO on EC strategies, Food and Nutritional Security ...:

○ [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\), 25.10.2021](#)

○ Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

\*\*\*\*\*

5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

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5.1.2.e "epsomail.org ; T/F: +32-25.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

/o=CICWP/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bd5

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** maandag 7 maart 2022 09:41  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de'; 5.1.2.e @slu.se'; 5.1.2.e @helsinki.fi'; 5.1.2.e @wur.nl';  
**Onderwerp:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March  
**Bijlagen:** 22\_03\_04\_EPSO\_Genome editing - 6th informal meeting\_Participants\_send.pdf; 22\_02\_28\_EPSO\_UKR\_Statement.pdf

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the list of participants. Those in bold have confirmed already. Everybody else, pls kindly confirm to us by 21 March.

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e and 5.1.2.e

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European Plant Science Organisation, EPSO

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[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

**From:** 5.1.2.e **Sent:** 14.12.2021

**To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants

**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

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**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

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- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** maandag 7 maart 2022 09:34  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de); 5.1.2.e @slu.se);  
 5.1.2.e @helsinki.fi); 5.1.2.e @wur.nl)  
**Onderwerp:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March  
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5.1.2.e "epsomail.org ; T/F: +325.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

**From:** 5.1.2.e **Sent:** 14.12.2021

**To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants

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**5.1.2.e**

EPSO on EC strategies, Food and Nutritional Security ...:

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Plant ETP GA - Open session on NGTs and PRM - 30 March  
**Datum:** vrijdag 11 maart 2022 10:53:56

---

Ah top, dank!

---

**Van:** 5.1.2.e @minInv.nl>  
**Verzonden:** vrijdag 11 maart 2022 10:51  
**Aan:** 5.1.2.e @hollandbio.nl>  
**Onderwerp:** Plant ETP GA - Open session on NGTs and PRM - 30 March

Ha 5.1.2.e

Dit event bedoelde ik!

Vriendelijke groet,

5.1.2.e

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**Van:** 5.1.2.e @wur.nl>  
**Verzonden:** dinsdag 22 maart 2022 12:09  
**Aan:** 5.1.2.e )  
**CC:** 5.1.2.e  
**Onderwerp:** RE: BO  
**Bijlagen:** BAPS projectplan 2022 Duiding kansen NPBT.docx; Voorstel doorlopende BELEIDSONDERSTEUNEND ONDERZOEKSPROJECT biotechnologie .docx  
  
**Opvolgingsvlag:** Opvolgen  
**Vlagstatus:** Met vlag

Ha 5.1.2.e, ik probeerde je te bellen over BO na 2022 (zie je mail hieronder).

Bijgaand nog een keer het werkplan voor 2022. Ook bijgaand het document dat we in overleg met 5.1.2.e en 5.1.2.e hebben opgesteld in 2019 om het onderzoek te verlengen. De bedoeling was toen voor de normale 4 jaar, maar omdat toen de uitkomst van de NGT status studie opgedragen door de EU Council aan de Commissie, nog niet bekend was, is toen een voorstel voor doorloop gedaan voor 2 jaar (t/m 2022). De tekst is gedateerd en zal zeker aangepast moeten worden.

Alvast drie suggesties van mijn kant:

1. Gezien de ontwikkelingen Europese zou een nu een doorloop van 4 jaar mogelijk wel voor de hand liggen (dus t/m 2026). Naar verwachting zal een science based beleidsondersteuning gedurende deze jaren zeker nog nodig zijn.
2. Naar verwachting zullen onderwerpen waar we nu reeds verkenning naar doen als 1. keuzevrijheid (labelling), 2. duurzaamheidskader (inclusief bijdrage aan ontwikkeling weerbare teeltsystemen die ook economisch succesvol zijn) en 3. intellectueel eigendom (patent versus kwekersrecht) zeker op de agenda blijven staan, zowel beleidsmatig als in het maatschappelijk debat daarom heen.
3. Denk eraan. **Jouw aanvraag is een bedrag inclusief BTW!** In de normale rapportages etc, gebruiken we bedragen exclusief BTW. In 2022 was de projectsom **inclusief BTW** €166.199 en exclusief BTW €137.353.

5.1.2.e en ik denken graag mee om tot een doorloop van het onderzoek te komen die LNV zo goed mogelijk ondersteunt in de beleidsontwikkeling tav NGTs de komende jaren op basis van een mogelijke modernisering van de Europese wetgeving.

Hartelijke groet,

5.1.2.e

---

**From:** 5.1.2.e @minInv.nl>  
**Sent:** donderdag 17 maart 2022 11:06  
**To:** 5.1.2.e @wur.nl>  
**Subject:** BO

Hoi 5.1.2.e

Zou je me nog even kunnen bijpraten over het BO. Voor hoeveel jaren is er budget gereserveerd voor jouw BO project (Duiding van kansen.....)?  
 Ik wil me ervan verzekeren dat ik niet dit jaar (voor 2023) verlenging moet inzetten.

Met vriendelijke groet,

5.1.2.e

Senior Beleidsmedewerker



**Ministerie van Landbouw, Natuur en Voedselkwaliteit**  
Directie Strategie, Kennis & Innovatie

Bezuidenhoutseweg 73 | 2594 AC | DEN HAAG  
+31 6 5.1.2.e | 5.1.2.e@minlnv.nl  
[www.rijksoverheid.nl/lnv](http://www.rijksoverheid.nl/lnv)

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**Van:** 5.1.2.e @wur.nl>  
**Verzonden:** woensdag 23 maart 2022 17:03  
**Aan:** 5.1.2.e )  
**CC:** 5.1.2.e  
**Onderwerp:** Gedifferentieerde procedure onder Richtlijn 2001/18/EC

Beste 5.1.2.e

Hieronder volgt het stukje uit het denktank rapport van ReImagine Europe (\*) over de gedifferentieerde procedure. Naar deze procedure verwees Rob Duba eerder vandaag tijdens de lunchworkshop. In dit rapport wordt het in dezelfde categorie geschaard als ons scenario B. Hopelijk is dit nuttige info.

Groet, 5.1.2.e

\*) Uit [White Paper on the Regulation of Genome Editing in Agriculture - Reimagine Europa \(reimagine-europa.eu\)](https://reimagine-europa.eu) (blz. 14)

#### OPTION 2, MAKE DO WITH WHAT WE HAVE

This option would involve the use of existing provisions in EU law, notably Article 7, Directive 2001/18/EC, which allows for differentiated procedures for specific categories of GMOs involving simplified procedures while meeting the criteria set out in Annex V. One of the advantages of this procedure is that it might result in a desired outcome without opening the entire Directive. The uncertainty with option 2 is that Article 7 has never been invoked in practice, which is probably linked to difficulties in achieving a qualified majority among Member States [27]. Although the differentiated procedure option may not have been used for the environmental release of GMOs (remit of Directive 2001/18/EC), differentiations made by Member States are commonplace for low-risk GM microorganisms grown in containment (remit of Directive 2009/41/EC), which is under the oversight of national Member State authorities. This does beg the question whether a similar situation might be permitted in practice for plants under the same circumstances.

Another way to apply differentiation is not the procedural pathway but through specific risk assessment guidance. Risk assessment guidance for foods and feed derived from GM plants, for example, was initially drawn up by the EFSA GMO Panel in 2011 and became enshrined into law with only minor modifications, that is, Annex II of Commission Implementing Regulation (EU) 503/2013 [28]. The EFSA GMO Panel has indicated that for modifications using site-directed nucleases (such as CRISPR Cas9, TALENS, zinc-finger nucleases), lesser data requirements may apply. One could envisage that EFSA may be tasked with developing specific guidance for GMOs obtained with these techniques, which then subsequently could become annexed to a new implementing regulation. Hence it does not change the actual framework legislation [8] and GM food and feed Regulation (EU) 1829/2003 [9] but the scientific risk assessment that forms the basis of EFSA's advice to the European Commission.

8. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC - Commission Declaration. 17 April 2001 EU Official Journal: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590472034900&uri=CELEX:32001L0018>. p. 0001 - 0039.

9. Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed (Text with EEA relevance). 18 October 2003, EU Official Journal <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32003R1829>. p. 0001 - 0023.

27. Casacuberta, J.a.P.P., Proportionate and scientifically sound risk assessment of gene-edited plants. EMBO Reports, 2018. 19(e46907).

28. COMMISSION IMPLEMENTING REGULATION (EU) No 503/2013, in L 157/1. 3 April 2013, Official Journal of the European Union <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0503&from=EN>

**Van:** 5.1.2.e @wur.nl>  
**Verzonden:** woensdag 23 maart 2022 23:42  
**Aan:** 5.1.2.e  
**Onderwerp:** Onderwerpen voor desk studies in 2022 (nieuwe risico's)

Beste 5.1.2.e en 5.1.2.e

Zoals beloofd aan 5.1.2.e tijdens ons maandelijks LNV-WFSR overleg eerder vandaag volgt hieronder (\*) een overzicht van de vier literatuurstudie-onderwerpen voor 2022, uit het werkplan van het WOT02-02-052 project over nieuwe risico's. De vraag aan jullie is welke twee onderwerpen prioriteit zouden hebben om als eersten uitgevoerd te worden, wellicht als basis voor interventies in Brussel e.d. Zoals gezegd hadden wij bijvoorbeeld contact met de collega's van Plant Research hier in Wageningen gehad die bijvoorbeeld geïnteresseerd waren ook in de status van negatieve segreganten/null-segreganten. Deze worden al gebruikt in de plantenveredeling (USA) en/of zijn vrijgesteld van GGO regelgeving (Australië, Kenia etc.), terwijl dit in de EU waarschijnlijk niet zal worden erkend als een traditioneel gewas met een geschiedenis van veilig gebruik.

Ik ben benieuwd naar jullie bevindingen. Alvast dank voor jullie medewerking en advies.

Met vriendelijke groet,

5.1.2.e

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\*) Ideeën:

- Nieuwe ontwikkelingen in gene editing in planten en hun consequenties voor regelgeving, handhaving en veiligheidsbeoordeling
  - Ontwikkeling: Het in kaart brengen van de technologische vooruitgang in specifieke gene-editing methodes die gericht zijn op het veranderen van de activiteit van genen zonder deze zelf te verwijderen of te veranderen. In de biotechnologie worden namelijk steeds meer moleculair-genetische systemen ontwikkeld en gebruikt waarbij niet de genen zelf worden gemodificeerd of uitgeschakeld, maar de activiteit ervan wordt gereguleerd. Dit gebeurt door de doel-genen bijvoorbeeld te activeren of slechts ten dele te remmen. Voorbeelden hiervan zijn:
    - CRISPR Cas 3.0: een nieuwe vorm van regulering van gen-activiteit met behulp van een modulair systeem dat op elk gewenst gen kan worden toegepast
    - CRISPR interference (CRISPRi) voor remming van genen

- De nieuwe systemen voegen dus een nieuwe dimensie toe die zich leent voor o.a. “metabolic engineering” en andere synthetische biologie-toepassingen in planten.
  - Veiligheidsvraagstuk: Is de huidige beoordelingsmethodiek voldoende toegerust voor deze manier van modificatie? Zijn de conclusies over gene editing van o.a. het EFSA GMO Panel ook van toepassing op deze nieuwe technologieën? Welke mogelijke nieuwe, grotere of verminderde risico’s zijn te verwachten? Welke aanpassingen aan de risicobeoordelingsstrategie en het afwegingskader zijn wellicht nodig? Wordt bijvoorbeeld de rol van het internationaal aanbevolen vergelijkend samenstellingsonderzoek (Codex, OECD, EFSA) onderstreept om de effecten van veranderde gen expressie op eiwit en metaboliet niveau te identificeren? (NB in een voorgesteld parallel BO project wordt juist diepgaand naar de *gerapporteerde* moleculaire “off-target” effecten *op DNA niveau* in planten en microorganismen gekeken en de methodes voor hun identificatie, niet alleen voor deze specifieke gene-editing methodes maar voor gene editing in de hele breedte)
  - Handhavings- en regelgevingsvraagstuk: Onder welke regelgeving (o.a. GGO) vallen deze producten en hoe wordt dit in andere landen wellicht al gedaan? Kunnen producten wellicht binnenkort in importstromen voorkomen? Zijn deze gene-edited producten te traceren wanneer ze geen “vreemd” DNA bevatten? Welke producten zouden mogelijk al in de importstromen kunnen voorkomen en wat is de (verwachte) omvang van deze stroom?
- Veiligheid van diervoeders uit co-producten van biobased productie met GM micro-organismen
- Ontwikkeling: De conversie van bestaande biobased processen (productie van isobutanol in plaats van ethanol uit zetmeel van maïs, bijvoorbeeld <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0219016>) en nieuwe grondstoffen (stengels met celstof in plaats van granen met zetmeel) kunnen vrijwel alleen gedaan worden met behulp van genetisch gemodificeerde gisten en andere gemodificeerde micro-organismen. Er is daarnaast een trend naar circulariteit waarbij o.a. plantaardige reststromen uit de agri-food industrie voor voedsel en diervoeders worden ge-upgrade ten behoeve van meer duurzaamheid, door o.a. fermentatie met behulp van genetisch gemodificeerde micro-organismen
  - Veiligheidsvraagstukken: Terwijl deze ontwikkelingen bijdragen aan de duurzaamheid, rijst de vraag of de veiligheid van resten van de genetisch gemodificeerde micro-organismen (GMMOs) die als diervoeder worden gebruikt (zoals DDGS uit ethanol productie) ook gecoverd is. De focus is hierbij op de genetische modificatie en het mogelijk voorkomen van DNA en celrestanten in het diervoederproduct.
  - Handhavingsvraagstukken: In kaart brengen: Waar worden welke nieuwe processen (2<sup>e</sup> generatie bioethanol, of conversie 1<sup>ste</sup> generatie naar andere producten met toegevoegde waarde) ingezet met GM microorganismen (commercieel, pre-commercieel) die tot (co-) producten voor diervoeder (o.a. analogen van DDGS) kunnen leiden? Kunnen deze in importstromen vanuit deze landen voorkomen of geschiedt productie

(ook) binnen de EU? Wat is de omvang van deze stromen? Welke databronnen kunnen gescreend worden om ontwikkelingen hierin bij het houden, bijvoorbeeld import alerts, handelsstatistieken, vakbladen en websites? Lenen deze bronnen zich voor automatische screening, zoals web-scraping? Zouden de GM micro-organismen hierin gedetecteerd kunnen worden? (ook rekening houdend met invloed van processing op stabiliteit DNA)

- Null segreganten van GM events
  - Ontwikkeling: Sommige biotech bedrijven gebruiken technologieën waardoor het veredelingsproces versneld wordt om nieuwe gewenste eigenschappen in elite variëteiten in te brengen. Hierbij worden planten tijdelijk genetisch gemodificeerd. De ingebrachte stukken DNA kunnen op verschillende manieren weer verwijderd worden terwijl de nieuwe gewenste eigenschap behouden blijft. Het idee is dat deze vrij is van GGO DNA. In de EU zou dit echter niet als een non-GGO gewas met een geschiedenis van veilig gebruik worden gezien (o.a. vanwege het mogelijk optreden van modificaties elders in het DNA en de daarmee samenhangende onbedoelde effecten) terwijl dit elders (o.a. Australië) al wel expliciet zo is en daar nul-segreganten wordt vrijgesteld van regelgeving
  - Veiligheidsvraagstuk: Welke veiligheidsrisico's spelen een mogelijke rol voor de null-segreganten? Is een aangepaste benadering voor de risicobeoordeling van deze organismen nodig ten opzichte van conventionele en transgene tegenhangers?
  - Handhavingsvraagstuk: Welke technologieën worden waar al toegepast, en in welke importstromen zouden producten hiervan kunnen voorkomen? Zijn deze detecteerbaar?
- Genetische modificatie in kweekvleesproductie
  - Ontwikkeling: In een aantal voorbeelden worden stamcellen die voor kweekvleesproductie worden gebruikt eerst onsterfelijk gemaakt met behulp van gene editing of genetische modificaties die verouderingsprocessen tegengaan (zie o.a. <https://www.wired.co.uk/article/cow-cell-lines-cultured-meat>). Hierdoor vormen ze cellijnen met cellen die oneindig blijven delen, wat gunstig is voor de productie. Daarnaast worden tijdens de kweek recombinante eiwitten aan de groeimedia toegevoegd als vervanger van dierlijke sera. De vraag is of hierin mogelijk nog residuen voorkomen van GM microorganismen die voor de productie van deze recombinante producten gebruikt zijn, en hoeveel van de recombinante eiwitten zelf en deze eventuele residuen van GM productieorganismen in het uiteindelijke consumentenproduct terecht kunnen komen. In het onderzoek zal een inventarisatie gedaan worden van de vraag in hoeverre genetische modificatie een rol speelt in (pre-commerciële) kweekvleesproductie.
  - Veiligheidsvraagstuk: Aangezien deze producten als o.a. vervanger van vlees, vis, eieren en zuivel in substantiële hoeveelheden door de consument geconsumeerd zullen worden is de vraag welke risico's met deze vormen van genetische modificatie verbonden zijn. Ook is vraag of de huidige risicobeoordelingsstrategieën nog steeds toereikend zijn en op

welke punten deze wellicht zou dienen te worden aangepast. Ook de invloed van processing (o.a. bakken) hierop zou in de beantwoording van deze vragen moeten worden meegewogen. De focus is hierbij op de recombinante / edited componenten, terwijl de algemenere veiligheidsvraagstukken in andere parallelle activiteiten belicht zullen worden.

- Handhavingsvraagstuk: De detectie en traceerbaarheidsvraagstukken zijn divers, namelijk de mogelijkheid om nog resten van recombinante eiwitten (en wellicht van de recombinante organismen waarmee deze gemaakt zijn) aan te tonen *versus* de aanwezigheid van edits of vreemd DNA in de gekweekte stamcellen zelf.

De bedoeling is om over elk van de genoemde onderwerpen een briefrapport uit te brengen met een samenvatting met voor het beleid relevante informatie. Indien gewenst kan over het onderzoek tevens een uitgebreider rapport worden geleverd, met gedetailleerdere uitkomsten van de literatuuronderzoeken en andere bronnen (grijze literatuur, EFSA en andere officiële documenten, interviews). De vertrouwelijke rapporten dienen tevens als basis voor een publicatie (review en/of perspectief-paper in een wetenschappelijk tijdschrift), na instemming van het WFSR management en de LNV contactpersoon.





European Plant Science Organisation  
<https://epsoweb.org>

## *Invitation and agenda*

# **Genome editing Improving legislation and start flagships to better address climate, environmental, food and health challenges**

6<sup>th</sup> Informal meeting online 24.5.2022

11 am – 3 pm

Zoom

*Brussels, 25.3.2022*

The European Plant Science Organisation (EPSO) invites policy makers to join EPSO members in a 6<sup>th</sup> informal meeting exchanging views on the current situation of genome editing in Europe and possible next steps to enable Europe better addressing climate change, achieving food and nutritional security and establishing a sustainable agriculture in Europe and world-wide.

**Draft agenda: 11 am – 3 pm on 24.5.2022**

**10:30** All log in to be granted access

**11:00** Last log in to be granted access

**11:10** Welcome [5.1.2.e & 5.1.2.e] and tour de table

**11:30** **Legislation – how could it be improved? [chaired by Ralf W]**

- EPSO activities since 4.11.2021 [Ralf W]
- Views from national ministries and MEPs on the EC draft impact assessment of policy options (consultation then open) and additional activities since November 2021, possibly thoughts on the impact of the war in the Ukraine [ministry colleagues, MEPs]
- Discuss next steps

**12:30** **Break**

**13:00** **Flagships towards GE products** with consumer benefits on the market in Europe  
**[chaired by 5.1.2.e & 5.1.2.e]**

- Summary on ongoing / approved calls, projects [5.1.2.e]
- Discuss update on consumer surveys carried out and if more countries want to follow this example [5.1.2.e]
- Present first feedback from EMBO/EPSO Genome editing IP workshop [5.1.2.e]
- Discuss next steps (opportunities for future calls / programmes / projects at national, multinational and European levels)

**14:30** **Conclusions, next steps** [5.1.2.e & 5.1.2.e]

**14:55** **Closing** [5.1.2.e]

The meeting will be an open-minded, informal discussion under **Chatham House Rules** between plant scientists (1 / country) and policy makers (1-5 / country) from countries which already indicated to support an innovative approach for agriculture and plant breeding in Europe. The meeting shall build on the first three meetings. We will continue to broaden the discussion and invite more representatives from countries interested in the issue.

EPSO offers to collaborate with policy makers to develop an appropriate future-ready regulation to enable the European public sector, small- and medium-sized companies and farmers to contribute more comprehensively to food and nutritional security and to use all available tools to reduce the environmental impact of agriculture. Notwithstanding the technical option retained, EPSO supports a science-based revision of the present European legislation establishing a more proportionate product-based risk assessment. EPSO is also willing to contribute to the societal debate on genome editing and to communicate in a fact-based and yet accessible manner about innovative plant science and its societal role.

5.1.2.e and 5.1.2.e

**Attachments:**

- List of participants – only for meeting participants (Chatham House Rules)

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**About EPSO**

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents about 200 research institutes, departments and universities from 32 countries, mainly from Europe, and 2.600 individuals Personal Members, representing over 24 000 people working in plant science. EPSO's mission is to improve the impact and visibility of plant science in Europe, to provide authoritative source of independent information on plant science including science advice to policy, and to promote training of plant scientists to meet the 21st century challenges in breeding, agriculture, horticulture, forestry, plant ecology and sectors related to plant science. <https://epsoweb.org> | EU Transparency Register Number 38511867304-09

**EPSO 6<sup>th</sup> informal science – policy meeting on genome editing, online, 24.5.2022**

**List of participants:** FYI only: In bold are those who confirmed for 28.4.2022 – by 25.3.2022  
**Pls ALL confirm for 24.5.2022** - to send

## Participating countries:

Austria

Ministry: 5.1.2.e  
 Science: 5.1.2.e

Belgium

Ministry: 5.1.2.e  
 Science: 5.1.2.e

Denmark

Ministry: 5.1.2.e & 5.1.2.e

Estonia

Ministry: 5.1.2.e  
 Ministry: 5.1.2.e  
 Science: 5.1.2.e

Finland

Ministry: 5.1.2.e  
 Science: 5.1.2.e

France

Ministry: 5.1.2.e  
 Science: 5.1.2.e

Germany

Ministry: 5.1.2.e  
 Linked to ministry: 5.1.2.e  
 Ministry: 5.1.2.e & 5.1.2.e  
 Ministry: 5.1.2.e  
 Linked to ministry: 5.1.2.e  
 Ministry: 5.1.2.e & 5.1.2.e  
 Science: 5.1.2.e 5.1.2.e

Ireland

Ministry: 5.1.2.e  
 Linked to ministry: 5.1.2.e  
 Ministry: 5.1.2.e  
 Linked to ministry: 5.1.2.e  
 Science: 5.1.2.e

Latvia:

Ministry: 5.1.2.e & 5.1.2.e  
 Science: 5.1.2.e

Lithuania

Ministry: 5.1.2.e & 5.1.2.e  
 Science: 5.1.2.e

The Netherlands

Ministry: 5.1.2.e

Science: 5.1.2.e

Norway

Ministry: 5.1.2.e

Ministry: 5.1.2.e

Farming: 5.1.2.e

Science: 5.1.2.e

Portugal:

Ministry: 5.1.2.e

Science: 5.1.2.e

Romania

Ministry: 5.1.2.e

Linked to ministry: 5.1.2.e

Science: 5.1.2.e

Spain

Ministry: 5.1.2.e & 5.1.2.e

Ministry: 5.1.2.e & 5.1.2.e & 5.1.2.e

Science: 5.1.2.e

Sweden

Ministry: 5.1.2.e & 5.1.2.e

Science: 5.1.2.e

UK

Science: 5.1.2.e

Europe

European Parliament: 5.1.2.e

Science: 5.1.2.e 5.1.2.e

Science: 5.1.2.e



European Plant Science Organisation  
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**Report**

## **Genome editing**

### **Improving legislation and starting flagships to better address climate, environmental, food and health challenges**

5<sup>th</sup> Informal meeting, online, 4.11.2021

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*Brussels, 25.3.2022*

**The European Plant Science Organisation (EPSO) invited policy makers to join EPSO members in a 5<sup>th</sup> informal meeting exchanging views on the current situation of genome editing (GE) in Europe and possible next steps to enable Europe to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.**

After an introduction, there was a tour de table: among participants from 17 countries and the European level were 17 scientists and 19 policy makers from governmental bodies. They discussed which steps could bring the discussion forward on the EU legislation and to facilitate potential flagships. The meeting was held under Chatham House Rules.

**In the first part of the meeting**, participants discussed the **current legislation: how it could be improved** in the short and in the longer term. A summary on the current situation and the European Commission's (EC) New Genomic Techniques (NGT) roadmap, called as well the 'Inception Impact Assessment', was given, along with views from the science and policy sides. Elements of risk analysis were discussed. The view was that the risk of *not* doing something should also be assessed.

**Views from the various ministry participants were presented.** These were placed in a wider perspective: In the UK, DEFRA held a consultation and received 7000 submissions, of which 50% were in favor of Genome Editing (GE). DEFRA will make a statutory instrument to make field trials easier than before. However, Scotland and Wales maintain a strict no-GE, no-GMO line. Norway is also not an EU member but is a member of the EEA, so needs to follow EU rules regarding GMO and GE. Therefore, Norway will likely wind up with rules that are consistent with the EU rules prevailing at the time. Regarding EU members, many said that they welcomed the Commission's roadmap, but that they now look to the EC for further action.

Several countries agreed with the EC's roadmap, that the current legislation has to be critically assessed, as it is outdated and no longer fit for purpose. One country maintains that there needs to be a proportionate risk assessment. The rationale for modernizing it is to protect human, animal, and plant health. Product based legislation, not method-based should be the principle. Some of these countries supported the roadmap, but had not made a submission to the process, due to their thorough involvement in various earlier phases of the process. There is a desire among the politicians for a more in-depth discussion of what is needed for the legislation. One suggestion was that GE and cisgenesis need to be excluded from the GMO legislation. Another one is hoping for a "future proofing" of the legislation.

In some countries, views are divided between ministries (welcoming the roadmap as a good starting point, favoring a revision of legislation for NGTs), between stakeholders (farmers are positive to GE, but there is reluctance from policy makers, while NGOs mobilized their supporters in opposition to

the roadmap and gave templates for public negative statements), or between regions (some regions responded positively to revising the GE legal framework).

The issue of “sustainability criteria” was discussed. One question was how to assess sustainability criteria for GE cultivars. Such an assessment should be proportionate (not so demanding that it discourages GE’s contribution to the EU Green Deal) and refer to all techniques and approaches, not just to NGTs; it would be better dealt with under the “Sustainable EU Food System new initiative” process. The two need to be interlinked.

It was **summarized** that the primary way forward is to: 1) engage with the EC to suggest ways forward to improve the legislation in Europe so that GE can be utilized to address climate change, environmental sustainability, and Food and Nutritional Security; 2) have more comprehensive communication and narratives that illustrate how GE can contribute benefits to society; 3) perform more national consumer surveys based, e.g., on the Norwegian questionnaire to compare appreciation of new technologies to address societal challenges across Europe.

**In the 2<sup>nd</sup> part of the meeting, Flagships towards GE products and consumer surveys** were discussed:

A brief discussion of the known national stakeholder and consumer surveys on GE was held, particularly those of Norway, Sweden, UK and Finland.

In the Swedish survey, 1000 responses were collected, the process being continued until that number was reached. This required 2000 surveys to be sent. The same was the case in Norway. One takeaway was that people want information on which breeding method was used to produce a food product. A big component of which sort of product was acceptable is the perception of risk. In essence, the traditional methods are more trusted by the public than are new (NGT) methods, but people appreciate the new technologies when used towards reducing pesticides, improving nutritional value for humans, and adapting to changing climates (drought etc.).

The published Finnish survey was a stakeholder survey, rather than one of consumers. The takeaway was that there is a lot of potential benefit seen, particularly for the forestry and agriculture sector and export markets thereof, but that industry will not take up GE until there is a different regulatory environment than currently, as well as consumer acceptance. Researchers in Finland see that expertise will move to areas where translational research and development with GE can be done, in practice meaning that innovations will take place outside and not inside the EU.

Participants were encouraged to consider a consumer survey in their respective countries similar to that made in Norway, and to use similar questions to those in Norway in order to facilitate comparison of the outcomes across Europe later on.

The ongoing projects and potential flagship products in the R&D chain were presented. Perhaps the nearest to market, based on available information, is the low-asparagine edited wheat developed in the UK, which greatly reduces acrylamide formation during baking or toasting. This has clear consumer benefits and can move towards market under the expected new regulatory regime in the UK.

Finally, IPR issues were shortly discussed. There was a brief mention that traits achieved by editing could be patented even if they could have occurred naturally. However, the patent application needs to state that they are “not essentially natural.” The question of how to simultaneously have plant breeders’ rights and open exchange while maintaining gene/trait patents was discussed. One solution would be a system such as for vegetable breeding, where there is easy access to patented lines, with arbitration if needed. The interfaces between patent law and PBR as well as with DSI and Cartagena, regarding GE, are worth examining. There will be an EMBO/EPSO workshop on the IPR question organized in January 2022.

## Conclusions and actions

Participants agreed to continue the open dialogue between the science and policy participants from this meeting.

The 6<sup>th</sup> meeting will be held in May 2022 and will focus on a discussion about the EC consultation on their draft impact assessment of policy options. It will further discuss encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

EPSO offers to collaborate with policy makers to develop appropriate future-ready regulations that enable the European public sector, small- and medium-sized companies and farmers to contribute more comprehensively to food and nutritional security and to use all available tools to reduce the environmental impact of agriculture. Notwithstanding the technical options retained, EPSO supports a science-based revision of the present European legislation establishing a more proportionate product-based risk assessment. EPSO is also willing to contribute to the societal debate on genome editing and to communicate in a fact-based and yet accessible manner about innovative plant science and its societal role.

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5.1.2.e, 5.1.2.e, 5.1.2.e, 5.1.2.e, 5.1.2.e  
EPSO 5.1.2.e.

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## Annex References

### EC:

- [High level event on "New genomic techniques – the way forward for safe and sustainable innovation in the agri-food sector"](#), 29.11.2021
- [Sustainable food system framework initiative – Inception Impact Assessment](#), 28.09.2021
- [Study on new genomic techniques](#), 29.4.2021
- JRC: <https://publications.jrc.ec.europa.eu/repository/handle/JRC121847> 29.04.2021

### Court of Justice of the EU:

- Judgment in Case C-528/16, 25.7.2018. [EN Press Release](#); [Ruling in EN](#);
- Advocate General's Opinion in Case C-528/16, 18.1.2018. [EN Press Release](#); [Opinion in English](#)



#### EPSO on EC strategies, Food and Nutritional Security:

- EPSO concepts, research areas and their contributions to the EU Green Deal – the Farm to Fork and the Biodiversity Strategies – presented at the meeting
- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\)](#), 25.10.2021
- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021
- [EPSO welcomes the European Commission's study regarding the status of novel genomic techniques \(NGTs\) under European Union law](#), 30.4.2021
- EPSO: [Genome editing – Improving legislation and starting flagships to better address climate, environmental, food and health challenges](#), Report 3<sup>rd</sup> informal science and policy meeting, 16.2.2021
- EPSO: [Statement on the Draft Strategic Research and Innovation Strategy by the Biodiversity Partnership Consortium](#), 29.1.2021
- EPSO: [Online Workshop Implementing a Plants and Microbiomes Strategy in Europe](#), 13-14.1.2021 started, 13.1.2021
- EPSO: [Statement on the Farm to Fork Strategy by the European Commission](#), 2.6.2020

#### Surveys

- The **Norwegian** Biotechnology Advisory Board (2020).
  - Norwegian consumers' attitudes toward gene editing in Norwegian agriculture and aquaculture. [www.biotechnologiradet.no/filarkiv/2020/04/Report-consumer-attitudes-to-gene-editing-agri-and-aqua-FINAL.pdf](http://www.biotechnologiradet.no/filarkiv/2020/04/Report-consumer-attitudes-to-gene-editing-agri-and-aqua-FINAL.pdf)
  - Questionnaire available upon request
- First outcome from the **Swedish** survey was presented at our meeting - link to the report (in Swedish): [https://www.genteknik.se/wp-content/uploads/2022/02/Svenskars-installning-till-genomredigering\\_2022.pdf](https://www.genteknik.se/wp-content/uploads/2022/02/Svenskars-installning-till-genomredigering_2022.pdf)
- Survey on NGTs in **Finland**
  - report <https://julkaisut.valtioneuvosto.fi/handle/10024/163143> ;
  - Blog <https://www.vttresearch.com/en/news-and-ideas/it-time-introduce-new-genetic-techniques-europe-well>
- ETH study in **Switzerland**<sup>5.1.2e</sup>, ETH / CH
  - **5.1.2.e** (2021) . How chemophobia affects public acceptance of pesticide use and biotechnology in agriculture. Food Quality and Preference 91, <https://doi.org/10.1016/j.foodqual.2021.104197>
  - The video of a workshop: [https://geneticresearch.scnat.ch/en/events/uuid/i/4b5f727d-b532-5e04-8b79-02f4ad2fd78c-CRISPR and food production](https://geneticresearch.scnat.ch/en/events/uuid/i/4b5f727d-b532-5e04-8b79-02f4ad2fd78c-CRISPR%20and%20food%20production)

Please refer to the Annex II and III of the [2<sup>nd</sup> meeting report](#) for

- Regulations and obligations for conventional breeding and variety testing
- Regulations and obligations for GMO breeding and testing in the EU.



5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** vrijdag 25 maart 2022 14:11  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de); 5.1.2.e @slu.se); 5.1.2.e @helsinki.fi); 5.1.2.e - Wageningen  
 5.1.2.e @wur.nl)  
**Onderwerp:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting  
**Bijlagen:** 22\_03\_25\_EPSO\_Genome editing - 6th informal meeting\_Invitation and agenda.pdf; 22\_03\_25\_EPSO\_Genome editing - 6th informal meeting\_Participants\_send.pdf; 22\_03\_25\_EPSO\_Genome editing - 5th informal meeting\_Report.pdf  
**Urgentie:** Hoog

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022 from 11 am to 3pm BRU time.

Please ALL kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/>.

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

We very much look forward to a most interesting discussion

5.1.2.e and 5.1.2.e

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5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32-5.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

**From:** 5.1.2.e **Sent:** 7.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the **list of participants**. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March**.

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e and 5.1.2.e

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**From:** 5.1.2.e **Sent:** 14.12.2021 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the **files we mentioned** during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group**.

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, 5.1.2.e (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

5.1.2.e and 5.1.2.e

EPSO on EC strategies, Food and Nutritional Security ...:

- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\),](#)  
25.10.2021
- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge,  
30.7.2021

**VOORSTEL DOORLOPENDE BELEIDSONDERSTEUNEND ONDERZOEKSPROJECT**

**Titel:** Duiding kansen van nieuwe veredelings technieken voor verduurzaming landbouw **BO-43-011.04-003**

**Indiener:**

**Andere betrokkenen vanuit LNV/andere departementen:**

Dit voorstel draagt bij aan de volgende MMIP<sup>1</sup>:

MMIP A2 Gezonde, robuuste bodem en teeltsystemen gebaseerd op agro-ecologie en zonder schadelijke emissies naar grond- en oppervlaktewater, deelprogramma *Slim inrichten van weerbare plantaardige productiesystemen* (robuuste rassen).

MMIP D3 Veilige en duurzame primaire productie, deelprogramma 3. *Integrale verduurzaming van de plantaardige open teelten*.

Politieke context: de toepassing van nieuwe veredelings technieken (CRISPR-Cas) vallen binnen de politieke context van weerbare gewassen met als doel de bescherming van biodiversiteit, voedselzekerheid en klimaatadaptatie (Toekomstvisie gewasbescherming 2030, Kamerbrief 16 april 2019).

Sleuteltechnologie MMIP S2 Biotechnologie en Veredeling

**1. Wat zijn de belangrijkste resultaten die het lopende project tot nu toe concreet heeft opgeleverd? Noem er maximaal drie. Hoe zijn de resultaten benut?**

Inhoudelijke facilitering van beleidsontwikkeling rond nieuwe plantenveredelings technieken en de daaraan gekoppelde Europese dialoog in lijn met agenderingspunt in Regeerakkoord. De wetenschappelijke ontwikkeling gaan zeer snel.

1. Faciliteren van NL beleidsontwikkeling met actuele kennis ten aanzien van nieuwe technieken zoals CRISPR/Cas. Potenties van rassen die weerbaarder zijn tegen ziekten en plagen en waar minder in hoeft te worden gespoten. Benutting: o.a. in spreektekst van minister van LNV voor EU Landbouwrraad mei 2019.

2. Wetenschappelijke input voor de NL bijdrage aan de 'Member State questionnaire on new genomic techniques to contribute to a Commission study requested by the Council', April 2020. Consultatieprocedure voor EU traject nieuwe veredelings technieken in lijn met agenderingspunt in Regeerakkoord.

3. Reeks van wetenschappelijke publicaties, met daaraan gekoppeld (publieks)brochures, presentaties voor stakeholders en publiek, artikelen in media, debat en dialoog. Objectieve kennis ten aanzien van kansen en eventuele bedreigingen t.a.v. verduurzaming van de landbouw worden wetenschappelijk onderzocht en geduid voor stakeholders. Meest recente wetenschappelijke publicatie: *Genetic engineering at the heart of Agroecology*, Outlook on Agriculture 49: 21-28 (March 2020). Benutting: jaarlijks > 30 gedocumenteerde communicaties, publieksartikelen, presentaties, bijdragen aan debatten/dialogen.

<sup>1</sup> Zie: <https://topsectoragrifood.nl/wp-content/uploads/2019/10/Kennis-en-Innovatieagenda-Landbouw-Water-Voedsel.pdf>

**2. Aan welke missie draagt dit project bij? En hoe dan? Noem twee concrete voorbeelden.**

Missie A Kringlooplandbouw

Missie B Klimaatneutrale landbouw en voedselproductie

Missie D Gewaardeerd, gezond en veilig voedsel

Sleuteltechnologie MMIP S2 Biotechnologie en Veredeling

Dit BO onderzoek duidt de kansen om met nieuwe veredelingstechnieken zoals CRISPR/Cas, sneller en preciezer robuuste rassen te ontwikkelen waarmee nieuwe, weerbare plantaardige productiesystemen (in combinatie met agro-ecologie) ontwikkeld kunnen worden of bestaande systemen versterkt. Hetzelfde geldt voor rassen die passen in productiesystemen die beter aangepast zijn tegen klimaatsverandering. Het BO onderzoek is complementair aan Topsector PPS projecten waarin nieuwe veredelingstechnieken worden ingezet voor pilot studies en/of bepaalde concrete toepassingen.

**3. Kan dit als PPS en zo nee, waarom niet? Welke publieke partijen hebben hier belang bij?**

**Waarom ligt hier een specifieke opgave voor de Rijksoverheid?**

Gezien de maatschappelijke gevoeligheid van dit onderwerp door o.a. de mondiale rol van bedrijfsleven daarin, is kennisontwikkeling en -duiding ten aanzien van kansen door nieuwe verdelingstechnieken een specifieke opgave van de Rijksoverheid.

Enkele jaren geleden hebben we overlegd over een mogelijke rol van de sector in dit BO onderzoek, en toen was expliciet de reactie van de sector dat bedrijven hier niet via aan pps aan wilden meewerken. De sector vond het een belangrijk project, maar de belangrijkste reden om niet deel te nemen was dat het van belang is om elke schijn van invloed vanuit het bedrijfsleven te vermijden. Tenslotte betreft het project de ontwikkeling en vorming nieuwe wet- en regelgeving waardoor de verantwoordelijkheid bij de Rijksoverheid valt.

**4. Waarom moet dit project (evt in gewijzigde vorm) worden voortgezet?**

De Rijksoverheid hecht hoge waarde aan een science-based beleidsontwikkeling met daaraan gerelateerd een maatschappelijke debat gevoed met objectieve wetenschappelijke kennis. De wetenschappelijke ontwikkelingen gaan zeer snel en naar verwachting zal komende jaren deze snelle ontwikkeling leiden tot nieuwe EU-regelgeving en daardoor nieuwe kansen voor implementatie van deze technieken om bovengenoemde missies van LNV helpen te realiseren. Ook is het voor Nederland als koploper van belang, gezien de ontwikkelingen en voortzetting van biotechnologie en nieuwe veredelingstechnieken kennis- en kapitaalintensief zijn.

### 5. Wat voegt het project toe aan wat er al loopt?

Dit BO-project voegt toe een wetenschappelijke duiding van kansen en bedreigingen t.a.v. verduurzaming van de landbouw (kringlooplandbouw) aan de nationale en mondiale academische studies op de gebieden van genomics, moleculaire veredelingstechnieken en sociaal-maatschappelijke studies naar adoptie van nieuwe technologie.

### 6. Zijn er lopende BO-projecten waarmee je dit project wilt bundelen? Zo ja, wat is de globale inhoud van deze bundel?

nvt

### 7. Doel en beoogde resultaten. Welke concrete producten worden opgeleverd aan het eind van de looptijd? <sup>2</sup>

Inhoudelijke facilitering van beleidsontwikkeling rond nieuwe plantenveredelingstechnieken en de daaraan gekoppelde Europese dialoog; precieze vorm in afstemming met LNV.

Concreet:

- notities aan beleidsmedewerkers en bijdrage ten behoeve van wet- en regelgeving
- workshops op EU-niveau met beleidsmakers en stakeholders
- kennisproducten in afstemming met LNV, o.a. brochures en wetenschappelijke artikelen
- concrete bijdragen aan publicaties en uitzendingen in de media,
- commentaren op publicaties in de media
- bijdragen aan publieke debatten

### 8. Globale aanpak. Welke activiteiten worden uitgevoerd, evt fasering?

1. Het project faciliteert een dialoog die Nederland in Europees verband wil voeren over kansen van deze nieuwe technieken zoals CRISPR-Cas (Nieuw).
2. LNV vraagt WR met dit project in nationaal verband beleidsmedewerkers, politiek en publiek te informeren over de ontwikkelingen van deze nieuwe technieken en toepassingen ervan in planten, en deze zo te duiden dat een science-based meningsvorming mogelijk wordt (;pend).
3. Het project draagt fundamenteel bij aan het agenderen van het onderwerp in de EU, zoals aangeduid in het Regeerakkoord.
4. Daarnaast faciliteert dit project parlementaire zaken zoals het beantwoorden van Kamervragen.
5. Mogelijk nieuwe EU wetgevingstraject van +/- 4 jaar.

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<sup>2</sup> Kun je de einddatum en de resultaten koppelen aan een moment in de beleidscyclus?

**9. Beoogde uitvoerder(s)**

WPR, contact: 5.1.2.e en 5.1.2.e

**10. Wie zijn de beoogde gebruikers en andere belanghebbenden en hoe worden zij betrokken?**

Nationaal primair LNV en secundair Europese beleidsmakers en stakeholders. Daarnaast ook NL stakeholders en NL multinationals, o.a. veredelingsbedrijven, telers en hun organisaties, andere ketenpartijen, NGO's, kennisinstellingen en het publiek in brede zin.

**11. Begroting (max. 4 jaar)**

Indicatieve projectomvang (bedragen incl. btw):

2021	2022	2023	2024	Totaal
€ 180.000	€ 180.000	€ 180.000	€	€

Gezien de beleidsontwikkeling met voorgenomen wet- en regelgevingsontwikkeling is de begroting meerjarig.

**Van:** 5.1.2.e  
**Verzonden:** dinsdag 29 maart 2022 16:36  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Onderwerpen voor desk studies in 2022 (nieuwe risico's)  
**Bijlagen:** Bijlage 9 Actie 2 uitvoeringsagenda - afwegingskader.docx

Beste 5.1.2.e

Bedankt voor je uitgebreide mail. Ik heb hierover ook met 5.1.2.e en 5.1.2.e verlegd.

- Graag zou ik je willen vragen of je dit ook langs het afwegingskader (zie ook bijlage) hebt gelegd en of jij aan de hand van dit afwegingskader mij de prioritering kan adviseren. In ieder geval zou ik wel punt 4, genetische modificatie in kweekvleesproductie als laagste prioriteit willen aanwijzen.
- Verder vroeg ik me af of je het goed vindt om onze maandelijkse overleggen te verlengen naar eens in de 6 weken. Ik probeer werktijd vrij te maken door te korten in mijn structurele overleggen. Uiteraard als er dringende zaken zijn, dan kunnen we ook telefonisch of per mail contact zoeken.

Vriendelijke groet,

5.1.2.e

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**Van:** 5.1.2.e wur.nl>  
**Verzonden:** woensdag 23 maart 2022 23:42  
**Aan:** 5.1.2.e @minInv.nl> 5.1.2.e  
 5.1.2.e @minInv.nl>; 5.1.2.e @minInv.nl>  
**Onderwerp:** Onderwerpen voor desk studies in 2022 (nieuwe risico's)

Beste 5.1.2.e en 5.1.2.e

Zoals beloofd aan 5.1.2.e tijdens ons maandelijks LNV-WFSR overleg eerder vandaag volgt hieronder (\*) een overzicht van de vier literatuurstudie-onderwerpen voor 2022, uit het werkplan van het WOT02-02-052 project over nieuwe risico's. De vraag aan jullie is welke twee onderwerpen prioriteit zouden hebben om als eersten uitgevoerd te worden, wellicht als basis voor interventies in Brussel e.d. Zoals gezegd hadden wij bijvoorbeeld contact met de collega's van Plant Research hier in Wageningen gehad die bijvoorbeeld geïnteresseerd waren ook in de status van negatieve segreganten/null-segreganten. Deze worden al gebruikt in de plantenveredeling (USA) en/of zijn vrijgesteld van GGO regelgeving (Australië, Kenia etc.), terwijl dit in de EU waarschijnlijk niet zal worden erkend als een traditioneel gewas met een geschiedenis van veilig gebruik.

Ik ben benieuwd naar jullie bevindingen. Alvast dank voor jullie medewerking en advies.



Met vriendelijke groet,

5.1.2.e

@wur.nl

tel. kantoor +31-(0)317 5 1.2.e / receptie +31-(0)317-5.1.2.e  
mobiel tel. 06-5.1.2.e

\*) Ideeën:

- Nieuwe ontwikkelingen in gene editing in planten en hun consequenties voor regelgeving, handhaving en veiligheidsbeoordeling
  - Ontwikkeling: Het in kaart brengen van de technologische vooruitgang in specifieke gene-editing methodes die gericht zijn op het veranderen van de activiteit van genen zonder deze zelf te verwijderen of te veranderen. In de biotechnologie worden namelijk steeds meer moleculair-genetische systemen ontwikkeld en gebruikt waarbij niet de genen zelf worden gemodificeerd of uitgeschakeld, maar de activiteit ervan wordt gereguleerd. Dit gebeurt door de doel-genen bijvoorbeeld te activeren of slechts ten dele te remmen. Voorbeelden hiervan zijn:
    - CRISPR Cas 3.0: een nieuwe vorm van regulering van gen-activiteit met behulp van een modulair systeem dat op elk gewenst gen kan worden toegepast
    - CRISPR interference (CRISPRi) voor remming van genen
    - De nieuwe systemen voegen dus een nieuwe dimensie toe die zich leent voor o.a. "metabolic engineering" en andere synthetische biologie-toepassingen in planten.
  - Veiligheidsvraagstuk: Is de huidige beoordelingsmethodiek voldoende toegerust voor deze manier van modificatie? Zijn de conclusies over gene editing van o.a. het EFSA GMO Panel ook van toepassing op deze nieuwe technologieën? Welke mogelijke nieuwe, grotere of verminderde risico's zijn te verwachten? Welke aanpassingen aan de risicobeoordelingsstrategie en het afwegingskader zijn wellicht nodig? Wordt bijvoorbeeld de rol van het internationaal aanbevolen vergelijkend samenstellingsonderzoek (Codex, OECD, EFSA) onderstreept om de effecten van veranderde gen expressie op eiwit en metabool niveau te identificeren? (NB in een voorgesteld parallel BO project wordt juist diepgaand naar de *gerapporteerde* moleculaire "off-target" effecten *op DNA niveau* in planten en microorganismen gekeken en de methodes voor hun identificatie, niet alleen voor deze specifieke gene-editing methodes maar voor gene editing in de hele breedte)
  - Handavings- en regelgevingsvraagstuk: Onder welke regelgeving (o.a. GGO) vallen deze producten en hoe wordt dit in andere landen wellicht al gedaan? Kunnen producten wellicht binnenkort in importstromen voorkomen? Zijn deze gene-edited producten te traceren wanneer ze geen "vreemd" DNA bevatten? Welke producten zouden mogelijk al in de importstromen kunnen voorkomen en wat is de (verwachte) omvang van deze stroom?

- Veiligheid van diervoeders uit co-producten van biobased productie met GM micro-organismen
  - Ontwikkeling: De conversie van bestaande biobased processen (productie van isobutanol in plaats van ethanol uit zetmeel van maïs, bijvoorbeeld <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0219016>) en nieuwe grondstoffen (stengels met celstof in plaats van granen met zetmeel) kunnen vrijwel alleen gedaan worden met behulp van genetisch gemodificeerde gisten en andere gemodificeerde micro-organismen. Er is daarnaast een trend naar circulariteit waarbij o.a. plantaardige reststromen uit de agri-food industrie voor voedsel en diervoeders worden ge-upgrade ten behoeve van meer duurzaamheid, door o.a. fermentatie met behulp van genetisch gemodificeerde micro-organismen
  - Veiligheidsvraagstukken: Terwijl deze ontwikkelingen bijdragen aan de duurzaamheid, rijst de vraag of de veiligheid van resten van de genetisch gemodificeerde micro-organismen (GMMOs) die als diervoeder worden gebruikt (zoals DDGS uit ethanol productie) ook gecoverd is. De focus is hierbij op de genetische modificatie en het mogelijk voorkomen van DNA en celrestanten in het diervoederproduct.
  - Handhavingsvraagstukken: In kaart brengen: Waar worden welke nieuwe processen (2<sup>e</sup> generatie bioethanol, of conversie 1<sup>ste</sup> generatie naar andere producten met toegevoegde waarde) ingezet met GM microorganismen (commercieel, pre-commercieel) die tot (co-) producten voor diervoeder (o.a. analogen van DDGS) kunnen leiden? Kunnen deze in importstromen vanuit deze landen voorkomen of geschiedt productie (ook) binnen de EU? Wat is de omvang van deze stromen? Welke databronnen kunnen gescreend worden om ontwikkelingen hierin bij het houden, bijvoorbeeld import alerts, handelsstatistieken, vakbladen en websites? Lenen deze bronnen zich voor automatische screening, zoals web-scraping? Zouden de GM micro-organismen hierin gedetecteerd kunnen worden? (ook rekening houdend met invloed van processing op stabiliteit DNA)
- Null segreganten van GM events
  - Ontwikkeling: Sommige biotech bedrijven gebruiken technologieën waardoor het veredelingsproces versneld wordt om nieuwe gewenste eigenschappen in elite variëteiten in te brengen. Hierbij worden planten tijdelijk genetisch gemodificeerd. De ingebrachte stukken DNA kunnen op verschillende manieren weer verwijderd worden terwijl de nieuwe gewenste eigenschap behouden blijft. Het idee is dat deze vrij is van GGO DNA. In de EU zou dit echter niet als een non-GGO gewas met een geschiedenis van veilig gebruik worden gezien (o.a. vanwege het mogelijk optreden van modificaties elders in het DNA en de daarmee samenhangende onbedoelde effecten) terwijl dit elders (o.a. Australië) al wel expliciet zo is en daar nul-segreganten wordt vrijgesteld van regelgeving
  - Veiligheidsvraagstuk: Welke veiligheidsrisico's spelen een mogelijke rol voor de null-segreganten? Is een aangepaste benadering voor de risicobeoordeling van deze organismen nodig ten opzichte van conventionele en transgene tegenhangers?

- Handhavingsvraagstuk: Welke technologieën worden waar al toegepast, en in welke importstromen zouden producten hiervan kunnen voorkomen? Zijn deze detecteerbaar?
- Genetische modificatie in kweekvleesproductie
  - Ontwikkeling: In een aantal voorbeelden worden stamcellen die voor kweekvleesproductie worden gebruikt eerst onsterfelijk gemaakt met behulp van gene editing of genetische modificaties die verouderingsprocessen tegengaan (zie o.a. <https://www.wired.co.uk/article/cow-cell-lines-cultured-meat>). Hierdoor vormen ze cellijnen met cellen die oneindig blijven delen, wat gunstig is voor de productie. Daarnaast worden tijdens de kweek recombinante eiwitten aan de groeimedia toegevoegd als vervanger van dierlijke sera. De vraag is of hierin mogelijk nog residuen voorkomen van GM microorganismen die voor de productie van deze recombinante producten gebruikt zijn, en hoeveel van de recombinante eiwitten zelf en deze eventuele residuen van GM productieorganismen in het uiteindelijke consumentenproduct terecht kunnen komen. In het onderzoek zal een inventarisatie gedaan worden van de vraag in hoeverre genetische modificatie een rol speelt in (pre-commerciële) kweekvleesproductie.
  - Veiligheidsvraagstuk: Aangezien deze producten als o.a. vervanger van vlees, vis, eieren en zuivel in substantiële hoeveelheden door de consument geconsumeerd zullen worden is de vraag welke risico's met deze vormen van genetische modificatie verbonden zijn. Ook is vraag of de huidige risicobeoordelingsstrategieën nog steeds toereikend zijn en op welke punten deze wellicht zou dienen te worden aangepast. Ook de invloed van processing (o.a. bakken) hierop zou in de beantwoording van deze vragen moeten worden meegewogen. De focus is hierbij op de recombinante / edited componenten, terwijl de algemenere veiligheidsvraagstukken in andere parallelle activiteiten belicht zullen worden.
  - Handhavingsvraagstuk: De detectie en traceerbaarheidsvraagstukken zijn divers, namelijk de mogelijkheid om nog resten van recombinante eiwitten (en wellicht van de recombinante organismen waarmee deze gemaakt zijn) aan te tonen *versus* de aanwezigheid van edits of vreemd DNA in de gekweekte stamcellen zelf.

De bedoeling is om over elk van de genoemde onderwerpen een briefrapport uit te brengen met een samenvatting met voor het beleid relevante informatie. Indien gewenst kan over het onderzoek tevens een uitgebreider rapport worden geleverd, met gedetailleerdere uitkomsten van de literatuuronderzoeken en andere bronnen (grijze literatuur, EFSA en andere officiële documenten, interviews). De vertrouwelijke rapporten dienen tevens als basis voor een publicatie (review en/of perspectief-paper in een wetenschappelijk tijdschrift), na instemming van het WFSR management en de LNV contactpersoon.

**/O=CICWP/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS**

**Van:** 5.1.2.e  
**Verzonden:** vrijdag 1 april 2022 17:25  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de'; 5.1.2.e @slu.se'; 5.1.2.e @helsinki.fi'; 5.1.2.e - Wageningen  
 5.1.2.e @wur.nl'  
**Onderwerp:** editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear 5.1.2.e and 5.1.2.e

Thank you for your email. I'll be there on the 24<sup>th</sup> of May. I look forward to our discussion!

Best regards,

5.1.2.e

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**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** vrijdag 25 maart 2022 14:11  
**Aan:** 5.1.2.e @epsomail.org>  
**cc:** 5.1.2.e kuehn.de) 5.1.2.e @julius-kuehn.de>; 5.1.2.e @slu.se)' 5.1.2.e @slu.se>; 5.1.2.e @helsinki.fi)' 5.1.2.e @wur.nl>  
 5.1.2.e @helsinki.fi>; 5.1.2.e - Wageningen 5.1.2.e @wur.nl>

**Onderwerp:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting  
**Urgentie:** Hoog

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022 from 11 am to 3pm BRU time.

Please ALL kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/>.

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

We very much look forward to a most interesting discussion

5.1.2.e and 5.1.2.e

\*\*\*\*\*

5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32-25.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

---

**From:** 5.1.2.e **Sent:** 7.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the **list of participants**. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March**.

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e and 5.1.2.e

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**From:** 5.1.2.e **Sent:** 14.12.2021 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the **files we mentioned** during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group**.

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, Sanna Viljakainen (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

5.1.2.e and 5.1.2.e

EPSO on EC strategies, Food and Nutritional Security ...:

- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\),](#)  
25.10.2021
- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge,  
30.7.2021



Van: 5.1.2.e  
 Aan: 5.1.2.e  
 Cc: 5.1.2.e  
 Onderwerp: RE: Artikel 5.1.2.e  
 Datum: dinsdag 5 april 2022 16:47:49

Hé 5.1.2.e, dank voor je reactie.

Tav de duurzaamheidscriteria. Ja, interessant wat je opmerkt. Het lijkt me nuttig om de inzichten die bij het ministerie en EC nu circuleren tav deze criteria te vergelijken met onze bevindingen op basis van het eerdere onderzoek in opdracht van LNV.

5.1.2.e had al aangegeven dat hij vrijdag nog met vakantie is. Ik stel voor om al wél die terugkoppeling van gesprekken met bedrijven te bespreken. Ontwikkelingen rond PPSen (en BO?) vragen mogelijk al acties. Ik blijf 5.1.2.e strak op de hoogte houden.

Ik kom zo met een agendavoorstel.

BO-activiteitenverslag is wat mij betreft al helemaal afgehandeld. BO-coördinator 5.1.2.e heeft het vanuit WR al doorgestuurd.

Hartelijke groet en tot vrijdag,

5.1.2.e

---

From: 5.1.2.e @minlnv.nl>  
 Sent: dinsdag 5 april 2022 16:26  
 To: 5.1.2.e @wur.nl>; 5.1.2.e @minlnv.nl>  
 Cc: 5.1.2.e @wur.nl>  
 Subject: RE: Artikel Ruth Mampuy

Hoi 5.1.2.e

Dank voor deze analyse. Heel nuttig.

Wat me opvalt als ik de inception impact assessment goed lees is dat er gerefereerd wordt naar "criteria developed under the policy action on a sustainable food systems framework". Ik denk dat dit grotendeels neerkomt op wat jij schrijft in punt 6.

Zie deze alinea:

A sustainability analysis to examine whether, and in which way, these products contribute to sustainability, **taking into account the criteria developed under the policy action on a sustainable food systems framework**. Specific regulatory mechanisms may be considered to introduce sustainability-related requirements or incentives.

Een collega van mij richt zich op een gezamenlijk (voor LNV) begrip van de term van duurzaamheid, tevens gericht op ontwikkelingen in EU. Ik heb hem gevraagd me hier iets meer uitleg over te geven. Dan kunnen we misschien het e.e.a. naast elkaar leggen. @5.1.2.e, zou 5.1.2.e informatie hebben over die 'criteria developed under the policy action on a sustainable food systems framework'? Ik kan ook intern navragen.

P.S. Is 5.1.2.e vrijdag bij ons overleg? Ik zou dan terugkoppeling kunnen geven over gesprekken met bedrijven over het combineren van resistenties.

P.S. II: verwacht je nog een akkoord van mij op het BO activiteitenverslag?

Met vriendelijke groet,

5.1.2.e

065.1.2.e

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Van: 5.1.2.e @wur.nl>  
 Verzonden: vrijdag 1 april 2022 15:27  
 Aan: 5.1.2.e @minlnv.nl>; 5.1.2.e @minlnv.nl>  
 Cc: 5.1.2.e @wur.nl>  
 Onderwerp: RE: Artikel Ruth Mampuy

Betreft: 5.1.2.e (2018) Socio-economic considerations in decision making on GM crops. Collection of Biosafety Reviews Vol. 10: 8-34.

Beste 5.1.2.e en 5.1.2.e

Ik vond het leuk om dit artikel weer te bekijken, en nu in een context van mogelijke nieuwe EU wetgeving waarbij duurzaamheidscriteria worden opgenomen in de toelating van gewassen waarin NGTs zijn toegepast.

Algemeen: Dit artikel geeft een **zorgvuldig, breed overzicht** van wat opties, voorbehouden, uitdagingen enz. die kunnen spelen als SECs (socio-economic considerations) worden meegenomen in toelating van "klassieke" GM gewassen. Zowel in de review van de rol SECs in biosafety toelatingen als een beschrijving van kansen en uitdagingen bij opname van SECs in toelatingsprocedures, geeft Ruth zulke brede overzichten, dat ik echter nog nauwelijks concrete handvatten zie voor toepassing in bovengenoemde context. Ik heb trouwens ook **geen** aspecten gelezen die tegengesteld zijn aan onze eerdere studies voor een duurzaamheidskader op basis van de assen *people, planet, profit*. Zie bijvoorbeeld Franke et al 2011: ([Rapport Engels \(wur.nl\)](#)).

Ik heb de volgende opmerkingen:

1. Terecht wordt het onderscheid gemaakt: Regulation has been fundamental to the debate on the use of agricultural biotechnology because of: (1) the possible safety implications for the environment and human health; and (2) non-safety implications such as socio-economic considerations (SECs). SECs betreffen in strikte zin geen biosafety issues,

maar worden verderop in het artikel hier wel onder geschaard.

2. Ook terecht merkt 5.1.2.e op dat juridische verankering van gebruik van SECs voor toelating van GM gewassen essentieel is. Ze noemt hierbij artikel 26 van het Cartagena Protocol on Biosafety (CPB). Ik heb het altijd wat vreemd (houtje-touwte) gevonden dat het CPB gebruikt wordt om dit gebruik van SECs deze juridische verankering te bieden (zie ook 4.3.1). Ik ben geen jurist; anderen kunnen hier beter iets over zeggen. Echter, deze juridische verankering moet bij mogelijke toekomstige EU regelgeving in elk geval goed in elkaar zitten.
3. In het EU document Inception Impact Assessment voor de mogelijke nieuwe regelgeving wordt gesproken over een "sustainability analysis" naast een Risk assessment". In mijn beleving gaat deze "sustainability" die de EC noemt verder dan de SECs die hier gereviewd worden. In onze eerdere studies in opdracht van LNV passen de SECs in strikte zin het beste op bovengenoemde *people*-as, terwijl *planet* en *profit* ook onderdeel zijn van het begrip duurzaamheid. Goede definities die door alle partijen aanvaard en op een zelfde wijze gebruikt worden zijn belangrijk om zoveel mogelijk verwarring te voorkomen.
4. "SECs are highly dependent on context, especially the type of GM crop, the geographical location of use and the type of users". Dat was ook de belangrijke conclusie van onze studies (Franke et al. 2011). Dit onderzoek werd toen uitgevoerd door een team van agronomen, economen, en sociologen/politicoloog (met ook inbreng van buiten WUR). De vele gesprekken die toen gevoerd werden over de disciplinaire "muurtjes" heen, waren toen naar alle kanten heel verhelderend. Met name over welke referentiesystemen je gebruikt in je assessments, en wat daarvan de duurzaamheidsscores zijn, zie ik nu ruim 10 jaar verder als een van de belangrijkste onderwerpen voor discussie. In het artikel van 5.1.2.e zou dit aspect nog iets duidelijker uitgewerkt kunnen worden (al geeft 3.1 daar al wel een aanzet toe).
5. "It should be noted that the issue of coexistence of GM crops with non-GM crops is not a safety issue as legal GM products on the market have passed health and environmental safety reviews and regulations. Rather, coexistence is an economic issue that is market-driven." Daar ben ik het mee-eens, al is dat economische aspect wel gekoppeld aan ethiek (met name beginsel-ethiek). Dat maakt de discussie Europees complexer dan simpel te verwijzen naar verrekenen van economische schade; maar biedt wel de mogelijkheid om het symmetrie-criterium te hanteren. Als je zelf om beginsel-ethische redenen tegen gebruik van een bepaalde technologie bent, is dat op zich geen reden dat anderen zich daarvan ook moeten onthouden.
6. "To include all possible SECs in biosafety decision-making would take a tremendous effort and significant funding, which does not seem either feasible or practical within GMO regulatory decision-making". Ik denk dat dit inderdaad een belangrijk inzicht is. Binnen de ontwikkeling van nieuwe EU regelgeving zou dan ook een duurzaamheidstoets strak gedefinieerd moeten worden, bijvoorbeeld alleen gericht op essentiële aspecten die aangeven of een teelt van een bepaald gewas (op basis van NGT) in een bepaald gebied, ... (etc) **bijdraagt aan de realisering van de Farm2Fork doelen** (of in NL beleidskader realisering van de doelstellingen kringlooplandbouw met daarin als onderdeel "weerbare teeltsystemen").
7. Tenslotte, wederom terecht, eindigt 5.1.2.e met : "...a learning process approach as a starting point to establish a more solid knowledge basis. In a co-creative process, a pool of data can be established that provides better insight into the socio-economic impact of GM crops. Over time, this could result in a more structured approach for including specific SECs into regulatory decision-making". Ik denk dat het goed is om na te denken over hoe (en vanuit wat voor rol) je vanuit BO-onderzoek kunt bijdragen in zo'n gezamenlijk leer proces.

Uiteraard ben ik graag bereid hierover verder door te praten.

Hartelijke groet,

5.1.2.e

(PS 5.1.2.e is nog even op vakantie)

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**From:** 5.1.2.e <@minlnv.nl>

**Sent:** vrijdag 11 maart 2022 15:41

**To:** 5.1.2.e <@wur.nl>

**Subject:** RE: Artikel Ruth Mampuy

Hoi 5.1.2.e

Ja, eerste week april zou fijn zijn.

Met vriendelijke groet,

5.1.2.e

---

**Van:** 5.1.2.e <@wur.nl>

**Verzonden:** vrijdag 11 maart 2022 15:01

**Aan:** 5.1.2.e <@minlnv.nl>

**CC:** 5.1.2.e <@minlnv.nl>; 5.1.2.e <@wur.nl>

**Onderwerp:** RE: Artikel Ruth Mampuy

Dank, 5.1.2.e. Ik ga er naar kijken. Is het goed als ik de eerste week van april reageer? Ik probeer wat acties zo te spreiden dat het goed werkbaar is.



Hoor graag nog even van je. Hartelijke groet,

5.1.2.e

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**From:** 5.1.2.e <[5.1.2.e@minlnv.nl](mailto:5.1.2.e@minlnv.nl)>  
**Sent:** vrijdag 11 maart 2022 13:58  
**To:** 5.1.2.e <[5.1.2.e@wur.nl](mailto:5.1.2.e@wur.nl)>  
**Cc:** 5.1.2.e <[5.1.2.e@minlnv.nl](mailto:5.1.2.e@minlnv.nl)>; 5.1.2.e <[5.1.2.e@wur.nl](mailto:5.1.2.e@wur.nl)>  
**Subject:** Artikel 5.1.2.e

Beste 5.1.2.e

Zoals beloofd stuur ik je hierbij het artikel over Socio-economic considerations in decision making on GM crops van 5.1.2.e. Ik ben benieuwd naar je reactie in de context van de wetgeving voor de toepassing van NGTs. De EC is voornemens duurzaamheidscriteria op te nemen in de toelating van gewassen waarin NGTs zijn toegepast.

Met vriendelijke groet,

5.1.2.e

Senior Beleidsmedewerker



**Ministerie van Landbouw, Natuur en Voedselkwaliteit**  
Directie Strategie, Kennis & Innovatie

Bezuidenhoutseweg 73 | 2594 AC | DEN HAAG  
+31 6 5.1.2.e | 5.1.2.e <[5.1.2.e@minlnv.nl](mailto:5.1.2.e@minlnv.nl)>  
[www.rijksoverheid.nl/lnv](http://www.rijksoverheid.nl/lnv)

Dit bericht kan informatie bevatten die niet voor u is bestemd. Indien u niet de geadresseerde bent of dit bericht abusievelijk aan u is gezonden, wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

De Staat aanvaardt geen aansprakelijkheid voor schade, van welke aard ook, die verband houdt met risico's verbonden aan het elektronisch verzenden van berichten.

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Dit bericht kan informatie bevatten die niet voor u is bestemd. Indien u niet de geadresseerde bent of dit bericht abusievelijk aan u is gezonden, wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

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The State accepts no liability for damage of any kind resulting from the risks inherent in the electronic transmission of messages.

5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** woensdag 6 april 2022 16:48  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de'; 5.1.2.e @slu.se'; 5.1.2.e @helsinki.fi'; 5.1.2.e Wageningen  
 5.1.2.e @wur.nl'  
**Onderwerp:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear 5.1.2.e,

Excellent, I add you to the participants.

Have a nice Easter

5.1.2.e

---

**From:** 5.1.2.e @minInv.nl>  
**Sent:** Friday, 1 April 2022 17:25  
**To:** 5.1.2.e @epsomail.org>  
**Cc:** 5.1.2.e @julius-kuehn.de'; 5.1.2.e @julius-kuehn.de>; 5.1.2.e @slu.se'; 5.1.2.e @slu.se>; 5.1.2.e @helsinki.fi';  
 <5.1.2.e @helsinki.fi>; 5.1.2.e - Wageningen 5.1.2.e @wur.nl')  
 <5.1.2.e @wur.nl>  
**Subject:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear 5.1.2.e and 5.1.2.e

Thank you for your email. I'll be there on the 24<sup>th</sup> of May. I look forward to our discussion!

Best regards,

5.1.2.e

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**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** vrijdag 25 maart 2022 14:11  
**Aan:** 5.1.2.e @epsomail.org>  
**cc:** 5.1.2.e @julius-kuehn.de'; 5.1.2.e @julius-kuehn.de>; 5.1.2.e @slu.se'; 5.1.2.e @slu.se>; 5.1.2.e @helsinki.fi';  
 <5.1.2.e @helsinki.fi>; 5.1.2.e - Wageningen 5.1.2.e @wur.nl')  
 <5.1.2.e @wur.nl>  
**Onderwerp:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting  
**Urgentie:** Hoog

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022 from 11 am to 3pm BRU time.

Please **ALL** kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/>.

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

We very much look forward to a most interesting discussion

5.1.2.e and 5.1.2.e

\*\*\*\*\*

5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32 5.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

---

**From:** 5.1.2.e **Sent:** 7.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants

**Subject:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the **list of participants**. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March**.

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e and 5.1.2.e

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**From:** 5.1.2.e **Sent:** 14.12.2021 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants

**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the **files we mentioned** during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group.**

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, **5.1.2.e** (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

**5.1.2.e** and **5.1.2.e**

EPSO on EC strategies, Food and Nutritional Security ...:

- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\), 25.10.2021](#)
- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

Dit bericht kan informatie bevatten die niet voor u is bestemd. Indien u niet de geadresseerde bent of dit bericht abusievelijk aan u is gezonden, wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

De Staat aanvaardt geen aansprakelijkheid voor schade, van welke aard ook, die verband houdt met risico's verbonden aan het elektronisch verzenden van berichten.

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**Van:** 5.1.2.e @topsectortu.nl>  
**Verzonden:** vrijdag 8 april 2022 11:08  
**Aan:** 5.1.2.e ;  
 5.1.2.e  
**CC:** 5.1.2.e  
**Onderwerp:** Search for NGT demonstration cases for EC communication  
  
**Urgentie:** Hoog

-----

Let op, in deze e-mail verzonden door 5.1.2.e @topsectortu.nl, zijn één of meerdere verdachte links gevonden die uit voorzorg aangepast zijn, zodat deze opnieuw gecontroleerd worden bij het aanklikken. Links kunnen misbruikt worden om malware op uw systeem te installeren. Klik alleen op nog aanwezige links als de e-mail afkomstig is van een door u vertrouwde afzender.

**Indien dit niet het geval is dient u deze e-mail direct te verwijderen.**

DICTU Servicedesk

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Beste allemaal,

Zoals een aantal van jullie weten is Topsector T&U lid van Plants ETP, een Brusselse organisatie om kennis over onze plantensector onder de aandacht te brengen van de EC. Er zijn momenteel 2 werkgroepen acties: één op Sustainable Agriculture (SA, waar ikzelf in zit) en één op New Genomic Technologies (NGT, waar 5.1.2.e in zit namens T&U). Er wordt gerapporteerd over onze activiteiten in de T&U EU Lobbygroep Kennis & Innovatie waarin het bedrijfsleven (via brancheorganisaties), LNV en WUR deelnemen.

Afgelopen najaar/winter heeft de werkgroep SA een lijvige position paper opgeleverd, die als basis zal dienen voor onze boodschap de komende jaren. Voor geïnteresseerden een samenvatting bijgevoegd in de vorm van een PPT.

We zijn nu bezig om een werkplan te maken voor de komende 2 jaar, daar hebben we vorige week een 1<sup>e</sup> slag in gemaakt tijdens een live bijeenkomst in Brussel (wat een verademing na 2 jaar ZOOM!). Eén van de actielijnen is om de werkgroep NGT te ondersteunen via het aanleveren van **goede NGT voorbeelden** om over te communiceren via factsheets richting de EC. Zie slide hieronder. Daarbij aandacht voor verschillende methoden, waaronder ook cisgenese (appel, 5.1.2.e ).

Mijn (mannelijke) naamgenoot José Luis Reichmann heeft een aantal richtlijnen gemaakt waar zo'n voorbeeld aan zou moeten voldoen in aanvulling op de 2<sup>e</sup> slide (zie Email hieronder).

Er zit **haast achter de actie**, want we willen rond de zomer de factsheets gereed hebben voor lobbydoeleinden in verband met de tijdlijn wetgeving EC. Daarna zal het materiaal benut gaan worden voor lobby bij Europees Parlement (ivm stemming over wetgeving in latere fase).

Graag wil ik jullie vragen te helpen om goede voorbeelden te vinden!

Alvast bedankt voor het meedenken!  
José

## 1. NGTs – developing factsheets URGENT



### What is the advantage in terms of...

Health  
Sustainability  
Input usage  
Drought  
etc...

Find 3-4 good examples of NGT crops (food/feed)

### Outcomes

Factsheets with Pros and Cons (or Problem - solution)  
-> influence legislative proposal  
-> lobbying afterwards  
Compare with other breeding approaches

### Next steps

Develop structure of factsheets  
Organise "sprint workshop" (May/Jun)  
Develop content

### Lead / sub-teams

Template team (TT): Christoph, Branwen, Amrit  
Examples team (ET): José, Koen, José Luis

### Timeline

End Apr Finalise template (TT)  
establish clear requirements for examples and  
start collecting (ET + WG SA and NGTs members)  
May/Jun WG workshop **need to set date**  
Jul/Aug Finalising factsheets

## 1. NGTs - Examples requirements (suggestions by JL)



- To contribute positively to sustainable agriculture (how does the NGT-derived product do it?)
- The purpose of the modification: that it can be perceived as positive by the public
- That the NGT-derived product could not have been obtained by other methods (or that it would have been a much more difficult, lengthy, or uncertain process)
- That it is based on sound and solid science (we should check the specifics, for instance about the variety used for the modification and if it is applicable to agricultural elite varieties)
- The potential impact, especially in the EU (size or magnitude of)

---

**From:** 5.1.2.e @cragenomica.es>  
**Sent:** donderdag 31 maart 2022 22:52  
**To:** 5.1.2.e @plantetp.eu>; 5.1.2.e @eurofins.com>;  
5.1.2.e @copa-cogeca.eu>; 5.1.2.e @topsectortu.nl>;  
5.1.2.e @basf.com>; 5.1.2.e @hutton.ac.uk>  
**Cc:** 5.1.2.e @cragenomica.es>  
**Subject:** WG SA core group meeting - follow up

Dear all:

To follow up on the topics that we discussed in the WG this past Tuesday.

The open session on NGTs on Wednesday was very interesting, and I think very useful to help us think about the NGT examples that we will collect and select. An important point was raised by 5.1.2.e in her presentation, and that is that the negative campaign about NGTs was very skeptical about NGTs contributing to sustainability. Taking this into account as well as some other points that were mentioned by Irene and the other two speakers, I put together some points that we may want to consider for selecting examples:

- **To contribute positively to sustainable agriculture (how does the NGT-derived product do it?)**
- The purpose of the modification: that it can be perceived as positive by the public
- That the NGT-derived product could not have been obtained by other methods (or that it would have been a much more difficult, lengthy, or uncertain process)
- That it is based on sound and solid science (we should check the specifics, for instance about the variety used for the modification and if it is applicable to agricultural elite varieties)
- The potential impact, especially in the EU (size or magnitude of)

I think that ideal examples should check on all of the above.

At the same time, I was thinking about the structure of the template for the examples (yes, I know that is not my sub-team, but anyway...). I mentioned "problem - solution" in the meeting, but a further suggestion would be: "problem - solution - impact & prospects - further info and references"

As one potential example, there is one recently published in Nature that I think meets all the above criteria:

#### **Genome-edited powdery mildew resistance in wheat without growth penalties**

<https://www.nature.com/articles/s41586-022-04395-9>

The pdf is too large to be sent by mail, but I can share it by other means if you do not have access to it.

This example has one additional "lesson": developed in China and introduced in Chinese elite varieties, so in order to use that modification in Europe or the US probably a license would be required...

It would be interesting to know the magnitude of the wheat powdery mildew problem in Europe, as this will determine the impact.



In the WG meeting somebody mentioned the GABA-enriched tomato that will be soon commercialized in Japan (sorry I do not remember who), and there was a recent news article about that in Nature Biotechnology. However, I am not sure that the GABA-tomato would be a best example because, as indicated in the news article “There’s no consensus on the health benefits of consuming GABA, nor evidence that it can cross the blood–brain barrier and reach the central nervous system,” and “There is limited evidence for stress and very limited evidence for sleep benefits of oral GABA intake.”, despite fact that “In Japan, dietary supplements and foods enriched for GABA are popular among the public,”, which I guess is part of the reason they went for this product...

Best wishes,

5.1.2.e

*ICREA Research Professor*

Tel. +34 5.1.2.e ext. 3208

5.1.2.e [@cragenomica.es](mailto:5.1.2.e@cragenomica.es)

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**Centre for Research in Agricultural Genomics**

Edifici CRAG - Campus UAB

08193 Cerdanyola del Vallès

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**<Format fiche BO en nWR – Versie 22 maart 2022>**

**KENNIS/INNOVATIEVRAAG 2022/23 e.v. BO en nWR: Nieuwe projectideeën en te verlengen projecten**

Het gaat niet om projectvoorstel, maar om een idee voor een projectvoorstel

[Link naar de indienpagina](#)

Indienen uiterlijk 14 april 2022 vóór 12.00 uur

<b>Titel:</b>	Duiding kansen van nieuwe veredelings technieken voor verduurzaming landbouw
<b>Nummer</b>	Wordt later ingevuld
<b>Indiener van SK&amp;I:</b>	5.1.2.e
<b>Andere betrokkenen:</b>	5.1.2.e (PAV)
<b>Draagt bij aan MMIP:</b>	ST2
<b>Onderwerp komt voort uit de “voorwas”<sup>1</sup></b>	niet
<b>Betreft dit BO of niet-WR?</b>	BO
<b>Nieuw of te verlengen project?</b>	Te vernieuwen

**1. Korte samenvatting/essentie van de kennis- of innovatievraag <max. 100 woorden>**

Technologieontwikkeling in de plantenveredeling gaat razendsnel. Met Nieuwe Genomische Technieken (NGTs) of New Breedings Techniques (NBTs), zoals CRISPR/Cas, kunnen heel precies veranderingen aangebracht worden in de genetische samenstelling van planten. Deze technieken kunnen bijdragen aan verduurzaming van de plantaardige productie door veredeling van bijvoorbeeld weerbare rassen te versnellen en effectiever te maken. Dit project zorgt voor wetenschappelijke duiding van die kansen, in het licht van andere (wetenschappelijke) ontwikkelingen in (duurzame) landbouw- en teeltsystemen, in aanmerking nemend ook de meest recente technologische ontwikkelingen (bijvoorbeeld gebruikmakend van epigenetica resulterend in tijdelijke aanpassingen van het genoom). De wetenschappelijke duiding faciliteert de beleidsontwikkeling rond dit onderwerp, hetgeen van belang is ivm het lopende parallelle Europese beleids- en wetgevingstraject.

Eerdere fase(n) van dit onder onderzoek hebben de volgende resultaten opgeleverd:

1. Facilitering van NL beleidsontwikkeling met actuele kennis ten aanzien van nieuwe technieken. Benutting: o.a. in spreekteksten van minister van LNV voor EU Landbouwrapport mei 2019.
2. Wetenschappelijke input voor de NL bijdrage aan de 'Member State questionnaire on new genomic techniques to contribute to a commission study requested by the Council', de studie van April 2021<sup>2</sup> en de inception impact assessment in 2021.
3. Wetenschappelijke input t.b.v. beantwoording Kamervragen in 2020 en 2021
4. Voorbereiding voor de verdiepingssessie op dit onderwerp voor MLNV in mei 2022

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<sup>1</sup> Hiermee wordt bedoeld: de integrale programmering door de programmateams met als resultaat het witte vlekken overzicht <zie T-schijf: SKI/Programmering/2022>;

<sup>2</sup> Study on the status of new genomic techniques under Union law and in light of the Court of Justice ruling in Case C-528/16. April 2021

5. Reeks van wetenschappelijke publicaties, met daaraan gekoppeld (publieks)brochures, presentaties voor stakeholders en publiek, artikelen in media, debat en dialoog over NGTs en kansen voor verduurzaming van de landbouw.

**2. Aan welke outcome(s) in de Theory of Change (ToC) van de MMIP draagt dit voorstel bij (zie groene blokken in ToC-schema in bijlage) en/of waarom is het belangrijk/onmisbaar voor het LNV-beleid?**

De missie-overstijgende MMIP ST2 is gericht op technologieontwikkeling- en toepassing om efficiënter en effectiever hoogwaardig uitgangsmateriaal te verkrijgen en om daarmee bij te dragen aan de missies A-D. Toepassing van NGTs is hierin een belangrijke factor gezien het potentieel van de technologie om veredeling te versnellen en effectiever te maken. Hiermee zijn de NGTs mede-bepalend voor de bijdrage van de MMIP aan bijvoorbeeld de Toekomstvisie Gewasbescherming, de Green Deal eiwitrijke gewassen, en aan het versneld aanpassen van gewassen aan nieuwe klimatologische omstandigheden.

**3. Licht de (urgentie van de ) “witte vlek” toe. Deze kan voortkomen uit de portfolio-analyse<sup>3</sup> die hebben geleid tot het “witte vlekken” overzicht of uit beleidsontwikkelingen of verplichtingen die (nog) niet in de ToC’s terugkomen.**

Het onderzoek is belangrijk voor de beleidsontwikkeling op dit onderwerp. Een toekomstbestendig wettelijk kader is belangrijk om deze technologie effectief te kunnen gebruiken als instrument om maatschappelijke doelen te behalen en voor de concurrentiepositie van NL en de EU vis-a-vis derde landen. Nederland spant zich daarom in Europees verband in voor het mogelijk maken van de toepassing en toelating van nieuwe veredelings technieken, mits daarbij geen soortengrenzen worden overschreden.

In 2022 vindt een publieke consultatie plaats. In 2023 komt de EC met een voorstel voor aanpassing van de wetgeving voor planten geproduceerd met bepaalde technieken (targeted mutagenesis en cisgenesis). De verwachting is dat in 2024 deze discussie nog doorloopt en dat het implementatietraject eind 2024 kan starten. Dit traject zal leiden tot intensivering van het maatschappelijke en politieke debat. In die fase is wetenschappelijke kennis nodig om te zorgen dat LNV de discussie zuiver kan voeren en gebaseerd op wetenschappelijke feiten. De kennis stelt LNV in staat goed te opereren binnen dit politiek gevoelige thema met een dynamisch krachtenveld binnen Europa.

**4. Wat gaat er mis als deze kennis- of innovatievraag niet wordt gehonoreerd (Is er bijvoorbeeld sprake van een toezegging van de Minister aan de TK?).**

Biotechnologie is maatschappelijk een gevoelig thema waarin verschillende belangen nauwkeurig moeten worden afgewogen. Er zijn ook veel maatschappelijke partijen actief. Het is belangrijk dat op elk moment op wetenschappelijke kennis kan worden teruggevallen om dit technisch-inhoudelijk ingewikkelde thema goed te kunnen weergeven/duiden en te zorgen dat in het wetgevingsproces argumenten op een juiste manier worden afgewogen.

Verder zou een gebrek van dit beleidsondersteunend onderzoek betekenen dat wij minder goed voorbereid zijn in de Europese onderhandelingen op dit onderwerp. Dit zou kunnen leiden tot een, voor Nederland, onwenselijk wetgevingspakket.

**5. Waarom kan dit idee niet als PPS worden vormgegeven? Welke publieke partijen hebben hier belang bij? Waarom ligt hier een specifieke opgave voor de Rijksoverheid?**

Gezien de maatschappelijke gevoeligheid van dit onderwerp door o.a. de mondiale rol van bedrijfsleven daarin, is kennisontwikkeling en -deling ten aanzien van kansen door nieuwe verdelingstechnieken een specifieke opgave van de Rijksoverheid.

**6. Bij nWR: Welk instrumenten worden ingezet (bijv. onderzoek, SBIR, onderwijs, planbureaus, EU, .....)(zie toelichting 1) en waarom?**

**7. Doel en beoogde resultaten, globale aanpak welke concrete producten worden opgeleverd?**

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<sup>3</sup> Dat is een analyse van de projectteams welke projecten er al lopen op de outcome waar dit project aan bijdraagt (zie vraag 2)

Het beoogde projectresultaat is een effectieve inhoudelijke facilitering van beleidsontwikkeling rond nieuwe plantenveredelings technieken en de daaraan gekoppelde Europese dialoog. Vanuit LNV is er behoefte aan een enigszins flexibele inrichting zodat er ruimte is om in te spelen op onverwachte ontwikkelingen in het debat.

De EC heeft aangekondigd een impact assessment te starten in 2022, mogelijk doorlopend in 2023, en met een wetgevingsvoorstel te komen in 2023. Dit project zal input aanleveren die gebruikt kan worden in de bijdrage hieraan vanuit de Nederlandse overheid op onderwerpen als (1) duurzaamheidscriteria en voorbeelden van bijdragen van NGTs aan duurzaamheid, (2) intellectueel eigendom en kwekersrecht, (3) co-existentie van gangbare landbouw en biologische landbouw in relatie tot toepassing van NGTs.

Concreet wordt binnen dit project gewerkt aan:

- notities aan beleidsmedewerkers en bijdragen ten behoeve van wet- en regelgeving
- workshops op EU-niveau met beleidsmakers en stakeholders
- kennisproducten in afstemming met LNV, o.a. brochures en wetenschappelijke artikelen
- concrete bijdragen aan publicaties en uitzendingen in de media,
- commentaren op publicaties in de media
- bijdragen aan publieke debatten

#### 8. Zijn er andere lopende projecten waarmee je dit project kunt afstemmen of bundelen?

Vanuit het oogpunt van (voedsel)veiligheid worden door WFSR projecten uitgevoerd die raakvlakken hebben met dit project. Zo wordt gekeken naar mogelijkheden voor een Safe-by-Design aanpak in de plantenveredeling, en worden risico's van off-target effecten bij toepassing van gene editing onderzocht. Ook in de WOT voedselveiligheid lopen er activiteiten die kijken naar biotechnologische toepassingen in voedselproductie.

Deze projecten bij WFSR zijn gericht en afgekaderd op veiligheid, zij hebben hier expertise op. Het maatschappelijke debat over de kansen en knelpunten rondom de nieuwe veredelings technieken in relatie tot verduurzaming van de landbouw gaat een stuk verder. Om deze bredere discussie te duiden wordt gebruik gemaakt van dit project, waarvoor WPR de meeste expertise heeft.

Bij PAV en SKI wordt gezorgd dat er afstemming bestaat tussen deze projecten, maar beiden hebben een duidelijk ander doel en afkadering, waardoor bundeling niet wenselijk is.

#### 9. Beoogd(e) uitvoerder(s). Waarom is/zijn deze geschikt?

Wageningen Plant Research, contact: 5.1.2.e en 5.1.2.e .

5.1.2.e combineert expertise in de (agro)ecologie en gewasecologie, en groene gewasbescherming met kennis over biotechnologie. Hij heeft veel ervaring met discussies met maatschappelijke groepen over technologische ontwikkelingen.

5.1.2.e is business unit manager Plantenveredeling van WR met brede kennis van moleculaire genetica, en genetische diversiteit in gewassen.

5.1.2.e heeft expertise in biodiversiteit, biotechnologie, moleculaire genetica, risico analyse, gene flow, en genetische markers.

#### 10. Beoogde gebruikers van de resultaten, hoe worden zij betrokken?

Nationaal primair LNV en secundair Europese beleidsmakers en stakeholders. Daarnaast ook NL stakeholders en NL multinationals, o.a. veredelingsbedrijven, telers en hun organisaties, andere ketenpartijen, NGO's, kennisinstellingen en het publiek in brede zin.

#### 11. Financieel beslag (incl. btw): houdt budget globaal, het is nog een indicatie.

Omschrijving	Totaal	Derden (andere beleidsdirecties of ander departement)	Derden (NWO/Prov/Waterschappen/ bijdrage kennisinstelling)	Bijdrage SK&I
	€ 344.000		€	€ 344.000

Toelichting op indicatie: De indicatie is gebaseerd op ca. 570 uur in schaal III (senior onderzoeker 5.1.2.e) en 456 uur per jaar in schaal V (5.1.2.e en 5.1.2.e)

## 12. Tijdsperiode van aanpak: beoogde stappen en stappenplan

2022 (indien haalbaar en nodig)	2023	2024	2025	2026	2027
	€167.000	€167.000			

## 13. Nieuwe nWR en BO-projecten starten in principe in 2023, tenzij er financiële ruimte is voor een eerdere start. Geef hier argumenteer waarom een start in 2022 noodzakelijk is:

n.v.t.

Indien mogelijk zal er in het najaar een nieuwe nWR-BO ronde zijn. De projecten die daaruit voortkomen zullen sowieso pas in 2023 starten.

## 14. Eventuele toelichting/bijzonderheden:

## 15. Is er sprake van gevoelig onderzoek (voor definitie zie voetnoot)<sup>4</sup>? Invullen: Ja of nee.

Nee

<sup>4</sup> Er is voor het ministerie sprake van politiek, beleidsmatig en/of maatschappelijke gevoelig onderzoek als het:

- aanleiding geeft voor de minister om tijd te vragen voor een passende reactie;
- niet aansluit bij het geldende beleid, of aanleiding geeft tot herijken van beleid;
- aanleiding kan geven tot maatschappelijke discussie;
- wordt gebruikt bij onderhandelingen over (inter-)nationale verdragen, zoals Brexit.

De gevoeligheid van een onderzoek kan tijdens de looptijd wijzigen. Belangrijk is dat ook de resultaten van gevoelig onderzoek door Wageningen Research openbaar gemaakt moeten worden (voor meer informatie zie het Communicatieprotocol LNV-WR).

TER INFORMATIE

Aan de Minister van Landbouw, Natuur en Voedselkwaliteit

**Directoraat-generaal Agro**  
Directie Plantaardige Agroketens  
en Voedselkwaliteit

**Auteur**

5.1.2.e

T 070 5.1.2.e

5.1.2.e @minInv.nl

**Datum**

20 april 2022

**Kenmerk**

DGA-PAV / 22174238

**BHM: 22199321**

**Kopie aan**

**Bijlage(n)**

# nota

Achtergrond informatie verdiepende sessie  
wetenschappers over nieuwe veredelingstechnieken

**Parafenroute**

5.1.2.e

5.1.2.e

5.1.2.e

5.1.2.e

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5.1.2.e

5.1.2.e

BPZ

## Aanleiding

Op woensdag 11 mei heeft u een verdiepend gesprek met een aantal wetenschappers over biotechnologie en de nieuwe veredelingstechnieken (NVTs). U heeft hierom gevraagd tijdens het kennismakingsgesprek op het dossier. Deze nota is geschreven om u van achtergrondinformatie te voorzien, in aanloop naar het gesprek.

## Advies

U kunt kennis nemen van de nota.

## Kernpunten

- U zult woensdag 11 mei van 8.30 – 9.30 met een diverse groep wetenschappers in gesprek gaan over NVTs. Wij hopen dat u hier uw vragen over deze technieken kwijt kunt.
- NVTs maken het mogelijk om het veredelingsproces met vele jaren te versnellen.
- Dit biedt grote kansen in de ontwikkeling naar een duurzame land- en tuinbouw, bijvoorbeeld door de ontwikkeling van robuuste en weerbare gewassen die bestand zijn tegen ziektes, droogte, hitte en verzilting. Al zijn NVTs geen *'silver bullet'* en zal dit altijd in een systeemoplossing moeten worden gebruikt.
- Nu vallen NVTs in Europa onder de wetgeving voor Genetisch Gemodificeerde Organismen (GGO). Deze wetgeving is verouderd en een vergunningaanvraag is daarnaast zeer belastend, nagenoeg onmogelijk. Hierdoor worden ze in de praktijk nauwelijks toegepast bij de veredeling.

Ontvangen BPZ

- De Europese Commissie ontwikkelt, mede door een sterke lobby van Nederland, nieuwe wetgeving voor NVTs. Het gaat hier specifiek om het gebruik van NVTs binnen de soortgrens.
- Zoals iedere nieuwe innovatie en wetgeving, brengt dit ook enkele (beleids)uitdagingen met zich mee. Deze staan in de toelichting verder uitgelegd.

**Toelichting**

Over de nieuwe veredelings technieken (NVTs):

- NVTs zijn een verzamelnaam voor genetische technieken, zoals CRISPR-cas, die toegepast worden in de veredeling van planten. Deze technieken maken het mogelijk om zeer gericht in het DNA van planten wijzigingen aan te brengen. Hierdoor kan het veredelingsproces met vele jaren worden versneld (bijv. van 15 jaar naar 3 jaar).
- Volgens een in april 2021 gepubliceerd rapport door de European Food Safety Authority zijn de verschillen tussen klassieke veredeling en NVTs in de toepassingen waar nu over gesproken wordt, zo klein dat de risico's vergelijkbaar zijn. Gewassen die ontwikkeld worden met deze NVTs kunnen ook met klassieke veredeling worden ontwikkeld, alleen duurt het een stuk langer.
- Deze technieken worden in Europa nog nauwelijks toegepast binnen de veredeling. Dit komt doordat deze technieken nu nog onder een zeer verouderde wetgeving uit 2001 vallen, toen vele van deze technieken nog niet bestonden. Nederland heeft daarom samen met een aantal lidstaten de EC overtuigd om de wetgeving voor deze NVTs te herzien.
- Deze nieuwe regelgeving richt zich op de genomische technieken voor het veredelen van planten binnen de soortgrenzen. Bovendien zal duurzaamheid een belangrijke voorwaarde binnen de wetgeving krijgen, hiermee zullen waarschijnlijk positieve eigenschappen worden gestimuleerd en onwenselijke eigenschappen tegengehouden.
- NVTs worden nu al wel gebruikt in onderzoek. Als onderdeel van de Kennis en Innovatieagenda Landbouw Water Voedsel en via de Topsector Tuinbouw&Uitgangsmaterialen financiert LNV al geruime tijd publiek-privaat onderzoek naar (het verder verbeteren van) NVTs in verscheidene gewassen met het doel plantenveredeling preciezer te maken en te versnellen.

Over de kansen van NVTs:

Doordat deze NVTs het veredelingsproces kunnen versnellen en goedkoper kunnen maken bieden deze technieken grote kansen:

- Gewassen kunnen sneller en beter weerbaar worden gemaakt tegen klimaatverandering en plantenziekten. Bovendien kan er ook sneller worden ingespeeld op plotselinge veranderingen, bijvoorbeeld wanneer er een nieuwe plantenziekte opkomt.
- Het wordt beter mogelijk om gewassen te ontwikkelen die minder afhankelijk zijn van gebruik van gewasbeschermingsmiddelen en daarmee goed passen in weerbare teeltsystemen die alle mogelijkheden voor

verduurzaming benutten, van innovatieve technieken tot gebruik van de natuur volgens agro-ecologische principes. Zo hebben NVTs ook een plek in het Uitvoeringsprogramma Gewasbescherming gekregen.

- De concurrentiekracht van onze veredelingssector zou hiermee kunnen worden versterkt. Steeds meer landen in de wereld maken grote stappen in de veredeling door het gebruik van NVTs. Hierdoor ontstaat een ongelijk speelveld en dreigen Nederlandse veredelingsbedrijven hun R&D steeds meer naar het buitenland (buiten de EU) te verplaatsen.
- VK heeft sinds hun uittrede uit de EU al de teelt van planten die zijn verkregen met NVTs al vergemakkelijkt.
- In de eiwittransitie willen we ook weer meer eiwitgewassen verbouwen in Nederland en Europa. De ontwikkeling van deze gewassen heeft wel decennia stil gelegen, door de goedkope invoer van soja uit derde landen. Deze veredelingsachterstand kan met NVTs veel sneller worden weggewerkt. Zo kunnen NVTs ook bijdragen aan de eiwittransitie.
- Dit bovenstaande argument geldt overigens ook voor veel van de zogenaamde "vergeten" gewassen. Hierdoor kan er dus een veel grotere diversiteit aan geteelde gewassen in Nederland ontstaan.

Over de uitdagingen van NVTs:

Zoals elke nieuwe innovatie en nieuwe wetgeving, komt dit wel met een aantal uitdagingen en zorgen bij bepaalde groepen stakeholders. Deze zetten we hieronder uiteen:

- De belangrijkste uitdaging is het zorgen voor **een gezonde coëxistentie met de biologische sector**. Deze sector heeft duidelijk aangegeven niet met NVT ontwikkelde gewassen te willen werken. Dit brengt enkele uitdagingen met zich mee:
  - Professionele gebruikers moeten keuzevrijheid hebben in wat voor gewassen zij telen: biologische gewassen of met NVT ontwikkelde gewassen. Dit is echter voornamelijk een beleidsmatige uitdaging, er moet een systeem komen waar dit in terug te vinden is. Een zogeheten "paper trail".
  - Biologische boeren zijn bang dat hun percelen, die grenzen aan de percelen van reguliere boeren, "besmet" zouden kunnen raken. Dat kan gebeuren door bestuiving van een naastgelegen perceel. Oplossingsrichtingen waar nu aan wordt gedacht is bijvoorbeeld een minimale afstand tussen percelen om dit risico te minimaliseren (hier is al onderzoek naar gedaan) en het instellen van een ondergrens van NVT-content voor biologische producten.
- Sommige burgers en organisaties zijn ongerust over de **veiligheid** van deze technieken, ze zijn immers vrij nieuw. Volgens EFSA geven deze technieken echter geen extra risico's vergeleken met reguliere veredeling, zolang we ze toepassen binnen de soortgrens. De uitdaging zit hier dus in hoe dit effectief en op een transparante wijze dit kan worden gecommuniceerd. Hier kunnen wij als rijk ook een rol in spelen.
- NVTs zijn niet tot nauwelijks in het lab aantoonbaar (omdat ze zo erg lijken op klassieke veredeling). Hierdoor is het gebruik van deze technieken in de veredeling **niet te traceren en handhaafbaar**. Dit geeft ook de noodzaak aan voor nieuwe wetgeving, de oude is hier

namelijk niet op berekend. Bij de nieuwe wetgeving moet dus nagedacht worden over een alternatief van traceren en handhaven. Wederom een beleidsuitdaging. Er wordt nu in Nederland gedacht aan een paper trail. Overigens is dit een uitdaging die hoe dan ook speelt, of die nieuwe wetgeving wel of niet komt.

- Er is ook bij sommige groepen angst voor de slechte voorbeelden die in het verleden hebben plaatsgevonden. Een goed voorbeeld zijn de genetisch gemodificeerde herbicide-resistente gewassen, die leidde tot toename van toepassing van een bepaald herbicide. Ook ondernamen deze bedrijven vaak een zeer agressieve juridische acties tegen een ieder die hen benadeelden. Dit soort onwenselijke situaties proberen we te voorkomen in de voorwaarden van de nieuwe wetgeving.
- Met de komst van NVTs kunnen er wel allerlei intellectueel eigendom (IP) kwesties gaan spelen. Op CRISPR/Cas (en verwante technieken) is een speelveld ontstaan van inmiddels duizenden patenten. Eén vraag gaat over de toegang tot de technologie, en daarbij is het goed dat alternatieve technieken blijven worden ontwikkeld, sommige met een eenvoudige licentiestructuur. Een tweede vraag gaat over toegang tot de zaden. De EC heeft aangegeven dat patenten op planten en rassen onwenselijk zijn. Dat standpunt is vooralsnog niet veranderd.
- Uiteraard is er ook een groep mensen die uit ideologie of religie geen met NVT-ontwikkelde gewassen willen consumeren. Er zal voor de consument keuzevrijheid moeten worden gegarandeerd. Dit zou beleidsmatig geregeld moeten kunnen worden.

Deelnemers aan het gesprek:

- **5.1.2.e** *WUR*  
**5.1.2.e** is **5.1.2.e** van de animal sciences group bij de WUR en was dit voorheen van de plant sciences group. Hij is plantenwetenschapper van origine en heeft veel publieke en internationale ervaring in het gesprek over nieuwe veredelings technieken. Hij neemt deel in het dagelijks bestuur van de topsector Tuinbouw en Uitgangsmateriaal.
- **5.1.2.e** *Louis Bolk instituut*  
**5.1.2.e** is verbonden aan het Louis Bolk instituut. Dit is een onderzoeksinstituut naar biologische en duurzame landbouw. **5.1.2.e** is thuis in het thema en de spanningen rondom nieuwe veredelings technieken en de biologische sector.
- **5.1.2.e** *Wageningen Food Safety Research (WSFR)*  
**5.1.2.e** doet voor het LNV onderzoek naar veiligheid en biotechnologie. Zij is verbonden aan de WSFR en kent de discussie rondom veiligheid goed.
- **5.1.2.e** *WUR*  
**5.1.2.e** is verbonden aan de Plant Breeding groep bij de WUR, hij is een expert op het gebied van plantenveredeling en intellectueel eigendom. Hij doet samen met **5.1.2.e** onderzoek voor het LNV.
- **5.1.2.e** *WUR*  
**5.1.2.e** is verbonden aan de Agrosysteemkunde groep bij de WUR, hij heeft veel kennis over het maatschappelijke debat rondom NVTs. Verder onderzoekt hij de plek die NVTs in duurzame teeltsystemen en agroecologie kan hebben. **5.1.2.e** voert samen met **5.1.2.e** onderzoek uit voor het LNV.



**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** Re: nota verdiepende sessie minister  
**Datum:** vrijdag 22 april 2022 09:05:52  
**Bijlagen:** [DOMUS-22174238-v2-Achtergrond\\_informatie\\_verdiepende\\_sessie\\_wetenschappers\\_over\\_biotechnologie\(003\)-BL\\_MLrs1.docx](#)

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Mooi stuk. Hierbij een aanvulling op coexistentie (wij hebben daar al veel gedaan op vraag van LNV) en een poging om de alinea over IP meer inhoud te geven. Ik splits het nu op in toegang tot technologie en evt patenten op de planten die er uit voortkomen.

Groet, 5.1.2.e

---

**From:** "5.1.2.e" <[redacted]@minInv.nl>  
**Date:** Thursday, 21 April 2022 at 18:33  
**To:** 5.1.2.e <[redacted]@wur.nl>, 5.1.2.e <[redacted]@minInv.nl>, "5.1.2.e" <[redacted]@wur.nl>  
**Subject:** RE: nota verdiepende sessie minister

Hoi 5.1.2.e  
 Hierbij mijn opmerkingen.  
 Ik ben er morgenochtend nog even, dan pas weer op 9 mei.

Met vriendelijke groet,  
 5.1.2.e

---

**Van:** 5.1.2.e <[redacted]@wur.nl>  
**Verzonden:** donderdag 21 april 2022 10:36  
**Aan:** 5.1.2.e <[redacted]@minInv.nl>; 5.1.2.e <[redacted]@wur.nl>; 5.1.2.e <[redacted]@minInv.nl>  
**Onderwerp:** RE: nota verdiepende sessie minister

Ha 5.1.2.e en 5.1.2.e mooi stuk. Zie bijgaand mijn opmerkingen en aanvullingen. Ik ben komende 2 weken ook geregeld een paar dagen vrij.

@5.1.2.e, fijne vakantie!

Hartelijke groet,

5.1.2.e

---

**From:** 5.1.2.e <[redacted]@minInv.nl>  
**Sent:** woensdag 20 april 2022 23:50  
**To:** 5.1.2.e <[redacted]@wur.nl>; 5.1.2.e <[redacted]@wur.nl>; 5.1.2.e <[redacted]@minInv.nl>  
**Subject:** nota verdiepende sessie minister

Ha 5.1.2.e en 5.1.2.e

Voor de minister ben ik een nota aan het voorbereiden om wat achtergrond info te hebben voor het gesprek. Wellicht heb ik het wat te beleidsmatig aangevlogen, maar ik heb een concept in de bijlage zitten. Ik ben wel komende 2 weken met vakantie, dus jullie hebben de tijd om er naar te kijken.  
 Met vriendelijke groet,

5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**  
**Ministerie van Landbouw, Natuur en Voedselkwaliteit**

Bezuidenhoutseweg 73 | 2594 AC | Den Haag

Postbus 20401 | 2500 EK | Den Haag

.....  
**M 06 5.1.2.e**

[www.rijksoverheid.nl/Inv](http://www.rijksoverheid.nl/Inv)

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De Staat aanvaardt geen aansprakelijkheid voor schade, van welke aard ook, die verband houdt met risico's verbonden aan het elektronisch verzenden van berichten.

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**Van:** 5.1.2.e )  
**Verzonden:** dinsdag 10 mei 2022 15:41  
**Aan:** Secretariaat SK&I  
**Onderwerp:** DOMUS-22174238-v12-  
Achtergrond\_informatie\_verdiepende\_sessie\_wetenschappers\_over\_biotech  
nologie  
**Bijlagen:** DOMUS-22174238-v12-  
Achtergrond\_informatie\_verdiepende\_sessie\_wetenschappers\_over\_biotech  
nologie.docx

Secretariaat,

Dit document hoort bij de sessie waar 5.1.2.e morgen bij is:  
Overleg wetenschap over plantenveredeling.

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** Vraag reacties inception document naar aanleiding interview  
**Datum:** woensdag 11 mei 2022 17:27:14

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Beste 5.1.2.e en 5.1.2.e, vanmorgen heb ik even genoemd dat 5.1.2.e en ik geïnterviewd werden door de Groene Amsterdammer. Er bleef nog een stukje onduidelijk en jullie kunnen denk ik daarbij helpen. Uit mijn toelichtende mail naar de journalist:

"Het EU "Inception impact assessment- Legislation for plants produced by certain new genomic techniques (Oktober 2021) kreeg een overvloed (ik geloof >30.000, graag nog even checken als je het wilt gebruiken) aan reacties kwam, waarvan een heel groot deel met copy past met argumenten uit de oude stelling name tegen ggo's. Ik vertaalde dat naar een reactie van NGO's op Europees niveau, maar daar heb ik geen zekerheid over. In bijgaande versie2 noem ik nu "groepen". Ik ken in Nederland geen NGO's die op deze afkeurende manier op het inception document gereageerd hebben."

Mijn vragen aan jullie:

- Hoeveel reacties waren er en hoeveel daarvan 'copy past'
- Grote aantallen copy past suggereert dat je met een groep of in het bijzonder een NGO te maken hebt die zo'n gezamenlijk ereactie organiseert. Is daar iets van bekend?

Jullie reactie wordt zeer op prijs gesteld. Dank alvast,

5.1.2.e

5.1.2.e

Head of team Applied Ecology

=====

Wageningen University & Research

Department of Agrosystems Research

Droevendaalsesteeg 1 (building 107), NL - 6708 PB Wageningen

*Postal address:* P.O. Box 16, NL-6700 AA Wageningen, The Netherlands

Tel. +31 317 5.1.2.e

Email: 5.1.2.e@wur.nl

Internet: <http://www.wur.nl/agrosystems>

**/O=CICWP/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS**

**Van:** 5.1.2.e )  
**Verzonden:** woensdag 11 mei 2022 15:53  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 - pls confirm participation by 7 April; Report 5th meeting

Dear 5.1.2.e

Thank you for quick response. I will let my colleague know, also about the Chatham House rule.

Best regards,

5.1.2.e

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**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** woensdag 11 mei 2022 15:51  
**Aan:** 5.1.2.e @minInv.nl>  
**Onderwerp:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 - pls confirm participation by 7 April; Report 5th meeting

Dear 5.1.2.e,

The meeting is only online.

Your colleague from the environmental ministry can email me to get access and be added to our ministry colleagues list.

**Both of you pls respect Chatham House Rule for all emails and the meeting itself.**

With best wishes

5.1.2.e

\*\*\*\*\*

5.1.2.e  
 5.1.2.e  
 European Plant Science Organisation, EPSO  
 Rue de l'Industrie 4, 1000 Brussels, Belgium  
 5.1.2.e "epsomail.org ; T/F: +32-2-25.1.2.e  
[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09  
 \*\*\*\*\*

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**From:** 5.1.2.e @minInv.nl>  
**Sent:** Wednesday, 11 May 2022 15:45  
**To:** 5.1.2.e @epsomail.org>  
**Subject:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 - pls confirm participation by 7 April; Report 5th meeting

Dear 5.1.2.e

I have two questions regarding the EPSO meeting on 24.5.2022:

- Will the meeting take place in Brussels or online? I heard a rumor that the meeting will be hybrid, with the possibility to join physically in Brussels?
- I was wondering if it is possible to invite my colleague from the environmental ministry (infrastructuur & waterstaat) to the next meeting on 24-05. We work closely together on the topic of NGTs and she is interested to join.

Thanks in advance!

Best regards,

5.1.2.e

---

Van: 5.1.2.e <[redacted]@epsomail.org>

Verzonden: woensdag 6 april 2022 16:48

Aan: 5.1.2.e <[redacted]@minlnv.nl>

cc: 5.1.2.e <[redacted]@julius-kuehn.de> 5.1.2.e <[redacted]@julius-kuehn.de>; 'SUNDSTRÄM  
(5.1.2.e <[redacted]@slu.se> 5.1.2.e <[redacted]@slu.se>; 5.1.2.e <[redacted]@helsinki.fi>  
5.1.2.e <[redacted]@helsinki.fi>; 5.1.2.e <[redacted]> - Wageningen 5.1.2.e <[redacted]@wur.nl>  
5.1.2.e <[redacted]@wur.nl>

**Onderwerp:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April;  
Report 5th meeting

Dear 5.1.2.e

Excellent, I add you to the participants.

Have a nice Easter

5.1.2.e

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From: 5.1.2.e <[redacted]@minlnv.nl>

Sent: Friday, 1 April 2022 17:25

To: 5.1.2.e <[redacted]@epsomail.org>

cc: 5.1.2.e <[redacted]@julius-kuehn.de> 5.1.2.e <[redacted]@julius-kuehn.de>; 5.1.2.e  
<[redacted]@slu.se> 5.1.2.e <[redacted]@slu.se>; 5.1.2.e <[redacted]@helsinki.fi>  
5.1.2.e <[redacted]@helsinki.fi>; 5.1.2.e <[redacted]> Wageningen 5.1.2.e <[redacted]@wur.nl>  
<5.1.2.e <[redacted]@wur.nl>

**Subject:** RE: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April;  
Report 5th meeting

Dear 5.1.2.e and 5.1.2.e

Thank you for your email. I'll be there on the 24<sup>th</sup> of May. I look forward to our discussion!

Best regards,

5.1.2.e

---

Van: 5.1.2.e <[redacted]@epsomail.org>

Verzonden: vrijdag 25 maart 2022 14:11

Aan: 5.1.2.e <[redacted]@epsomail.org>

cc: 5.1.2.e <[redacted]@julius-kuehn.de> 5.1.2.e <[redacted]@julius-kuehn.de>; 5.1.2.e  
<[redacted]@slu.se> 5.1.2.e <[redacted]@slu.se>; 5.1.2.e <[redacted]@helsinki.fi>  
5.1.2.e <[redacted]@helsinki.fi>; 5.1.2.e <[redacted]> Wageningen 5.1.2.e <[redacted]@wur.nl>  
5.1.2.e <[redacted]@wur.nl>

**Onderwerp:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April;  
Report 5th meeting

**Urgentie:** Hoog

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm **postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022** from 11 am to 3pm BRU time.

Please **ALL** kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/> .

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

We very much look forward to a most interesting discussion

5.1.2.e and 5.1.2.e

\*\*\*\*\*

5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

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[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

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From: 5.1.2.e Sent: 7.3.2022 To: 5.1.2.e Cc: chairs Bcc: Participants

Subject: EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the list of participants. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March.**

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- o EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e and 5.1.2.e

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From: 5.1.2.e Sent: 14.12.2021 To: 5.1.2.e Cc: chairs Bcc: Participants

Subject: EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the files we mentioned during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group.**

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, Sanna Viljakainen (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.



As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

5.1.2.e and 5.1.2.e

EPPO on EC strategies, Food and Nutritional Security ...:

- [EPPO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\)](#), 25.10.2021
- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

Dit bericht kan informatie bevatten die niet voor u is bestemd. Indien u niet de geadresseerde bent of dit bericht abusievelijk aan u is gezonden, wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

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**Van:** 5.1.2.e @wur.nl>  
**Verzonden:** woensdag 11 mei 2022 17:27  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e  
**Onderwerp:** Vraag reacties inception document naar aanleiding interview

**Opvolgingsvlag:** Opvolgen  
**Vlagstatus:** Met vlag

Beste 5.1.2.e en 5.1.2.e, vanmorgen heb ik even genoemd dat 5.1.2.e en ik geïnterviewd werden door de Groene Amsterdammer. Er bleef nog een stukje onduidelijk en jullie kunnen denk ik daarbij helpen. Uit mijn toelichtende mail naar de journalist:

"Het EU "Inception impact assessment- Legislation for plants produced by certain new genomic techniques (Oktober 2021) kreeg een overvloed (ik geloof >30.000, graag nog even checken als je het wilt gebruiken) aan reacties kwam, waarvan een heel groot deel met copy past met argumenten uit de oude stelling name tegen ggo's. Ik vertaalde dat naar een reactie van NGO's op Europees niveau, maar daar heb ik geen zekerheid over. In bijgaande versie2 noem ik nu "groepen". Ik ken in Nederland geen NGO's die op deze afkeurende manier op het inception document gereageerd hebben."

Mijn vragen aan jullie:

- Hoeveel reacties waren er en hoeveel daarvan 'copy past'
- Grote aantallen copy past suggereert dat je met een groep of in het bijzonder een NGO te maken hebt die zo'n gezamenlijk ereactie organiseert. Is daar iets van bekend?

Jullie reactie wordt zeer op prijs gesteld. Dank alvast,

5.1.2.e

5.1.2.e

Head of team Applied Ecology

=====

Wageningen University & Research

Department of Agrosystems Research

Droevendaalsesteeg 1 (building 107), NL - 6708 PB Wageningen

*Postal address:* P.O. Box 16, NL-6700 AA Wageningen, The Netherlands

Tel. +31 317 5.1.2.e

Email: 5.1.2.e @wur.nl

Internet: <http://www.wur.nl/agrosystems>

**Dekker, N.W. (Arno)**

---

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** donderdag 12 mei 2022 17:21  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de); 5.1.2.e @slu.se); 5.1.2.e  
 5.1.2.e @wur.nl); 'Ernst VAN DEN ENDE - Wageningen  
**Onderwerp:** EPSO: Genome editing meeting online 24.5.2022 – pls confirm participation by 19 May; Agenda updated  
**Bijlagen:** 22\_05\_11\_EPSO\_Genome editing - 6th informal meeting\_Invitation and agenda.pdf; 22\_05\_12\_EPSO\_Genome editing - 6th informal meeting\_Participants\_send.pdf  
**Urgentie:** Hoog

Dear ministry and science colleagues (all in bcc),

the EC opened the public consultation on NGT draft Impact Assessment of Policy Options on 29 April and it will close 22 July:

[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation_en)

This will be the focus of part 1 of our informal meeting with possible next steps and possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide

Pls find attached for the online meeting on 24 May 2022 from 11 am to 3pm BRU time:

- 6<sup>th</sup> meeting invitation and draft programme
- 6<sup>th</sup> meeting list of participants – confirmed in bold, all others pls kindly confirm to 5.1.2.e by 19 May.

We very much look forward to a most interesting discussion

5.1.2.e

\*\*\*\*\*

5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32-5.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

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**From:** 5.1.2.e **Sent:** 25.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm **postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022** from 11 am to 3pm BRU time.

Please **ALL kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.**

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/>.

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

We very much look forward to a most interesting discussion

5.1.2.e

---

**From:** 5.1.2.e **Sent:** 7.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the **list of participants**. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March.**

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e and 5.1.2.e

---

**From:** 5.1.2.e **Sent:** 14.12.2021 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the **files we mentioned** during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group.**

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, Sanna Viljakainen (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

5.1.2.e

EPSO on EC strategies, Food and Nutritional Security ...:

- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\)](#),

25.10.2021

- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: bespreken publieke consultatie NGT-wetgeving  
**Datum:** dinsdag 17 mei 2022 12:54:23  
**Bijlagen:** [image001.png](#)

---

Ha 5.1.2.e

Fijn! Vrijdagmiddag 1 u doen?

Ik bedoelde ook deze vragen:

**1.2 This is because (subvraag van vraag 1)**

Additional help available

multiple answers possible

Answer

the GMO legislation is not sufficiently clear for these plant products

Answer

the GMO legislation includes authorisation, traceability and labelling requirements that are not appropriate for these plant products

Answer

the risk assessment approach of the GMO legislation cannot factor in the diverse risk profiles of plants obtained by targeted mutagenesis or cisgenesis

Answer

the GMO legislation does not take into account whether products have the potential to contribute to sustainability

Answer

of other reasons

**10. Wanneer analysemethoden niet beschikbaar of niet betrouwbaar zijn, kan de doeltreffende traceerbaarheid van planten die zijn verkregen door middel van gerichte mutagenese of cisgenese, en van de met die planten geproduceerde levensmiddelen en diervoeders, worden gewaarborgd door middel van:**

Additional help available

meerdere antwoorden mogelijk

Antwoord

documentatie die via de keten van marktdeelnemers wordt doorgegeven

Antwoord

openbare databanken/registers

Antwoord

digitale oplossingen, bv. blockchain

Antwoord

andere methoden

Antwoord

Geen mening/weet ik niet

**\* Vraag11. Wanneer er geen betrouwbare analysemethoden beschikbaar zijn waarmee een product kan worden opgespoord en onderscheiden, moeten marktdeelnemers die door middel van gerichte mutagenese en cisgenese geproduceerde planten op de markt willen introduceren:**

Antwoord

helemaal niet worden gevraagd een analysemethode te verstrekken waarmee het product

kan worden opgespoord en onderscheiden

Antwoord

niet worden gevraagd een analysemethode te verstrekken waarmee het product kan worden opgespoord en onderscheiden, als zij kunnen onderbouwen dat dit onmogelijk zou zijn

Antwoord

worden gevraagd een detectiemethode te verstrekken, maar zonder dat die de mogelijkheid moet bieden het product van andere producten te onderscheiden, als zij kunnen onderbouwen dat dit laatste onmogelijk zou zijn

Antwoord

niet worden toegestaan het product in kwestie in de handel brengen

Antwoord

Geen mening/weet ik niet

\* Vraag

Vriendelijke groet,

5.1.2.e

---

**Van:** 5.1.2.e @wur.nl>

**Verzonden:** dinsdag 17 mei 2022 11:32

**Aan:** 5.1.2.e @minInv.nl>

**Onderwerp:** RE: bespreken publieke consultatie NGT-wetgeving

Hoi 5.1.2.e

Ik heb de 'Public consultation on plants produced by certain new genomic techniques' gelezen.

Er staat inderdaad iets in over traceability in. Bedoelt met hiermee het aantonen op een laboratorium? Dan kan ik je inderdaad bijpraten.

Bedoel je specifiek deze vraag/vragen?

- The GMO legislation includes authorisation, **traceability** and labelling requirements that raise implementation and enforcement challenges;

These problems could impact operators across the agri-food system, including in agricultural biotechnology innovation and research, non-food/feed bio-based and biotechnology industries, operators in EU trade partners, organic and GM-free operators, EU and national authorities, and EU citizens and consumer organisations. The issues are of interest to a broad spectrum of stakeholders, including NGOs active in the environmental protection, agri-food system, biotechnology and consumer protection areas.

\* Question **1. With regard to the problems above, what is your view of the existing provisions of the GMO legislation for plants produced by targeted mutagenesis and cisgenesis?**

Answer

They are adequate

Answer

They are not adequate

Answer

No opinion/I do not know

\* Question **2. If plants obtained by targeted mutagenesis and cisgenesis continue to be regulated under the current GMO framework, do you expect short, medium or long term consequences for you/your activity/sector?**

Answer

Yes

Answer

No

Answer

Not applicable

Answer

No opinion/I do not know

We kunnen woensdag ergens tussen 9-15.00 uur afspreken.  
Donderdagmiddag zien we elkaar waarschijnlijk bij IFF in Oegstgeest.  
Vrijdagmiddag zou ook kunnen.  
Laat maar weten!

Groet,

5.1.2.e

5.1.2.e | Wageningen Food Safety Research (part of Wageningen University & Research)

PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands

5.1.2.e @wur.nl | +31 (0) 317 5.1.2.e (mobile) | [www.wur.nl/food-safety-research](http://www.wur.nl/food-safety-research)

Wednesday is my regularly day off



Our disclaimer: <https://www.wur.nl/en/disclaimer-1.htm>

---

**From:** 5.1.2.e @minlnv.nl>

**Sent:** dinsdag 17 mei 2022 08:40

**To:** 5.1.2.e @wur.nl>

**Subject:** bespreken publieke consultatie NGT-wetgeving

Ha 5.1.2.e

Zoals je waarschijnlijk hebt gezien, is de Europese Commissie de publieke consultatie gestart voor de nieuwe wetgeving rondom NGTs. Gezien er ook een aantal vragen over tracering in staan, lijkt het me goed even met jou deze vragen door te spreken. Heb jij hier toevallig deze week nog tijd voor?

Hierbij ook de link:

[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques\\_en/public-consultation\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques_en/public-consultation_en)

Met vriendelijke groet,

5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**  
**Ministerie van Landbouw, Natuur en Voedselkwaliteit**  
Be Zuidenhoutseweg 73 | 2594 AC | Den Haag  
Postbus 20401 | 2500 EK | Den Haag

.....  
**M 06 5.1.2.e**  
[www.rijksoverheid.nl/Inv](http://www.rijksoverheid.nl/Inv)

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** Re: Artikel  
**Datum:** donderdag 19 mei 2022 13:58:48  
**Bijlagen:** [01622439221097206.pdf](#)

---

Dag 5.1.2.e

Attached the pdf, which I have not been able to read yet.

Kind regards,

5.1.2.e

---

**From:** 5.1.2.e @minInv.nl>  
**Date:** Thursday, 19 May 2022 at 13:43  
**To:** 5.1.2.e @wur.nl>, '5.1.2.e' @minInv.nl>  
**Cc:** 5.1.2.e @wur.nl>  
**Subject:** Artikel

Ho 5.1.2.e en 5.1.2.e

Ik kwam deze tegen (op linkedIn).

[The Deadlock in European Decision-Making on GMOs as a Wicked Problem by Design: A Need for Repoliticization - Ruth Mampuy, 2022 \(sagepub.com\)](#)

Heb jij toegang tot de pdf, 5.1.2.e?

Groetjes,

5.1.2.e

Dit bericht kan informatie bevatten die niet voor u is bestemd. Indien u niet de geadresseerde bent of dit bericht abusievelijk aan u is gezonden, wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

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5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** vrijdag 20 mei 2022 17:35  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @julius-kuehn.de'; 5.1.2.e @slu.se'; 5.1.2.e @helsinki.fi)  
**Onderwerp:** EPSO: Genome editing 24.5.2022 – Zoom Link, agenda and final participant list  
**Bijlagen:** 22\_05\_11\_EPSO\_Genome editing - 6th informal meeting\_Invitation and agenda.pdf; 22\_05\_19\_EPSO\_Genome editing - 6th informal meeting\_Participants\_send.pdf  
**Urgentie:** Hoog

Dear confirmed participants (all in bcc),

Please log into the meeting via 5.1.2.e (Meeting ID: 5.1.2.e Passcode: 5.1.2.e) with your actual name between 10:30 and 11 am. Our meeting starts 11 am.

We attach again the invitation with the agenda and final participant list for our 6<sup>th</sup> informal science and policy meeting ONLINE on 24 May from 11 am – 3pm Brussels time.

**Ministry / EP colleagues:** please prepare an oral update from your country regarding your views on the EC NGT consultation and progress since November 2021.

We very much look forward to a fruitful discussion

5.1.2.e

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5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32-25.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

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**From:** 5.1.2.e **Sent:** 12.5.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing meeting online 24.5.2022 – pls confirm participation by 19 May; Agenda updated

Dear ministry and science colleagues (all in bcc),  
 the EC opened the public consultation on NGT draft Impact Assessment of Policy Options on 29 April and it will close 22 July:

[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation_en)

This will be the focus of part 1 of our informal meeting with possible next steps and possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide

Pls find attached for the online meeting on 24 May 2022 from 11 am to 3pm BRU time:

- 6<sup>th</sup> meeting invitation and draft programme
- 6<sup>th</sup> meeting list of participants – confirmed in bold, all others pls kindly confirm to 5.1.2.e by 19 May.

We very much look forward to a most interesting discussion

5.1.2.e

---

**From:** 5.1.2.e **Sent:** 25.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm **postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022** from 11 am to 3pm BRU time.

Please **ALL kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.**

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/>.

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5.1.2.e

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**From:** 5.1.2.e **Sent:** 7.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the **list of participants**. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March.**

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

On a different note, pls find attached the EPSO statement on Ukraine we published on 28.2.2022:

- EPSO: [Scientists contributing to building a better Europe and world: Stop war in Ukraine! Offer support to Ukrainian scientists](#), 28.2.2022

We very much look forward to a most interesting discussion on the 28 April

5.1.2.e

---

**From:** 5.1.2.e **Sent:** 14.12.2021 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing 4.11.2021 - Files mentioned; YOUR availability Apr/May by 10 Jan pls

Dear ministry and science colleagues (all in bcc),

Thank you for a very interesting meeting!

We list at the end of this e-mail the hyperlinks to the **files we mentioned** during the meeting, including the EPSO submission to the EC NGT roadmap consultation. We offer to you as **ministry colleagues to send your submission the EC NGT roadmap consultation to 5.1.2.e to assemble and share in January with the group.**

Several positive pieces on GE 'offering new opportunities as humanity faces new global challenges'. have been published in Finland's largest-circulation daily newspaper, the *Helsingin Sanomat*. One was an opinion piece by a senior expert in the Ministry of Agriculture, **5.1.2.e** (5.11.21) who sees the current GM legislation as no longer fit for purpose. The other is the piece she commented on, attached, by E Lilja, a staff writer of the newspaper (31.10.21). The article sees GM as a useful approach and the EC as resistant to modernization of the legislation. We highlighted the first few sentences, which get the point across.

In Switzerland, a new association 'varieties for tomorrow' was founded for an open and differentiated view on new breeding processes, including the two major retailer chains. Furthermore, the Science Commission of the Council of states has for the first time voted in favour of gene technology.

Files still relevant which we sent you before, we will include in a second email for you today.

As jointly agreed during the meeting, we will hold the 6<sup>th</sup> informal science and policy meeting in April / May 2022 during the foreseen consultation time of the EC on their draft impact assessment of policy options. The EC aims to publish this questionnaire including more details on policy options for consultation probably April-May for 12 weeks.

**Therefore, pls send us your availability by 10 January to decide the date:**

Best: Th, 28.4.2022: yes, possible, no

Reserve: Th, 5.5.2022: yes, possible, no

Pls let us know as well **from which additional countries / which ministries you would be able to invite colleagues** so that we may have some of these at our 6<sup>th</sup> meeting.

We are working on the **report** and aim to send this to early next year.

We very much look forward to our dynamic cooperation in 2022 and wish you all a Merry Christmas and a healthy, successful New Year!

**5.1.2.e**

EPSO on EC strategies, Food and Nutritional Security ...:

- [EPSO submission to the EC's consultation on the roadmap regarding the legislation for plants produced by novel genomic techniques \(NGTs\), 25.10.2021](#)
- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021

## 5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** maandag 23 mei 2022 15:58  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e @helsinki.fi)  
**Onderwerp:** EPSO: Genome editing 24.5.2022 – final agenda  
**Bijlagen:** 22\_05\_23\_EPSO\_Genome editing - 6th informal meeting\_Invitation and agenda.pdf  
**Urgentie:** Hoog

Dear confirmed participants (all in bcc),

Pls find attached the invitation with the updated agenda for our 6<sup>th</sup> informal science and policy meeting ONLINE on 24 May from 11 am – 3pm Brussels time.

We added for the afternoon a short discussion on related issues under the Convention on Biological Diversity: Digital Sequence Information, Synthetic Biology.

We very much look forward to a fruitful discussion

5.1.2.e

\*\*\*\*\*

5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

Rue de l'Industrie 4, 1000 Brussels, Belgium

5.1.2.e "epsomail.org ; T/F: +32-25.1.2.e

[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

\*\*\*\*\*

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**From:** 5.1.2.e **Sent:** 20.5.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Confirmed participants  
**Subject:** EPSO: Genome editing 24.5.2022 – Zoom Link, agenda and final participant list

Dear confirmed participants (all in bcc),

Please log into the meeting via <https://slu-se.zoom.us/j/62088228964> (Meeting ID: 620 8822 8964 Passcode: 456959) with your actual name between 10:30 and 11 am. Our meeting starts 11 am.

We attach again the invitation with the agenda and final participant list for our 6<sup>th</sup> informal science and policy meeting ONLINE on 24 May from 11 am – 3pm Brussels time.

Ministry / EP colleagues: please prepare an oral update from your country regarding your views on the EC NGT consultation and progress since November 2021.

We very much look forward to a fruitful discussion

5.1.2.e

---

**From:** 5.1.2.e **Sent:** 12.5.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing meeting online 24.5.2022 – pls confirm participation by 19 May; Agenda updated

Dear ministry and science colleagues (all in bcc),

the EC opened the public consultation on NGT draft Impact Assessment of Policy Options on 29 April and it will close 22 July:

[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation_en)



This will be the focus of part 1 of our informal meeting with possible next steps and possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide

Pls find attached for the online meeting on 24 May 2022 from 11 am to 3pm BRU time:

- 6<sup>th</sup> meeting invitation and draft programme
- 6<sup>th</sup> meeting list of participants – confirmed in bold, all others pls kindly confirm to 5.1.2.e by 19 May.

We very much look forward to a most interesting discussion

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---

From: 5.1.2.e Sent: 25.3.2022 To: 5.1.2.e Cc: chairs Bcc: Participants  
Subject: EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022 from 11 am to 3pm BRU time.

Please **ALL** kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.

Pls find attached:

- 6<sup>th</sup> meeting invitation and draft programme
- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/>.

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

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- Opinion paper: [Designing the Crops for the Future; The CropBooster Program](#) – mobilize the European plant research community and all interested actors in agri-food research and innovation to face the challenge, 30.7.2021



European Plant Science Organisation  
<https://epsoweb.org>

## *Invitation and agenda*

# **Genome editing Improving legislation and start flagships to better address climate, environmental, food and health challenges**

6<sup>th</sup> Informal meeting online 24.5.2022

11 am – 3 pm

Zoom

*Brussels, 23.5.2022*

The European Plant Science Organisation (EPSO) invites policy makers to join EPSO members in a 6<sup>th</sup> informal meeting exchanging views on the current situation of genome editing in Europe and possible next steps to enable Europe better addressing climate change, achieving food and nutritional security and establishing a sustainable agriculture in Europe and world-wide.

**Draft agenda: 11 am – 3 pm on 24.5.2022**

**10:30** All log in to be granted access

**11:00** Last log in to be granted access

**11:10** Welcome 5.1.2.e and tour de table

**11:30** Legislation – how could it be improved? [chaired by 5.1.2.e]

- EPSO activities since 4.11.2021 [5.1.2.e]
- Views from national ministries and MEPs on the EC draft impact assessment of policy options (consultation then open) and additional activities since November 2021, possibly thoughts on the impact of the war in the Ukraine [ministry colleagues, MEPs]
- Discuss next steps

**12:30** *Break*

**13:00** Flagships towards GE products with consumer benefits on the market in Europe [chaired by 5.1.2.e]

- Summary on ongoing / approved calls, projects [5.1.2.e]
- Discuss update on consumer surveys carried out and if more countries want to follow this example [5.1.2.e]
- Present first feedback from EMBO/EPSO Genome editing IP workshop [5.1.2.e]
- Convention on Biological Diversity – Digital Sequence Information, Synthetic Biology [5.1.2.e]
- Discuss next steps (opportunities for future calls / programmes / projects at national, multinational and European levels)

**14:30** Conclusions, next steps [5.1.2.e]

**14:55** Closing [Alan S]



The meeting will be an open-minded, informal discussion under **Chatham House Rules** between plant scientists (1 / country) and policy makers (1-5 / country) from countries which already indicated to support an innovative approach for agriculture and plant breeding in Europe. The meeting shall build on the first three meetings. We will continue to broaden the discussion and invite more representatives from countries interested in the issue.

EPSO offers to collaborate with policy makers to develop an appropriate future-ready regulation to enable the European public sector, small- and medium-sized companies and farmers to contribute more comprehensively to food and nutritional security and to use all available tools to reduce the environmental impact of agriculture. Notwithstanding the technical option retained, EPSO supports a science-based revision of the present European legislation establishing a more proportionate product-based risk assessment. EPSO is also willing to contribute to the societal debate on genome editing and to communicate in a fact-based and yet accessible manner about innovative plant science and its societal role.

#### 5.1.2.e

**Attachments:**

- List of participants – only for meeting participants (Chatham House Rules)

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**Contacts:**

5.1.2.e [@Helsinki.fi](mailto:5.1.2.e@Helsinki.fi)  
5.1.2.e [@epsomail.org](mailto:5.1.2.e@epsomail.org)

**About EPSO**

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents about 200 research institutes, departments and universities from 32 countries, mainly from Europe, and 2.600 individuals Personal Members, representing over 24 000 people working in plant science. EPSO's mission is to improve the impact and visibility of plant science in Europe, to provide authoritative source of independent information on plant science including science advice to policy, and to promote training of plant scientists to meet the 21st century challenges in breeding, agriculture, horticulture, forestry, plant ecology and sectors related to plant science. <https://epsoweb.org> | EU Transparency Register Number 38511867304-09

## 5.1.2.e

**Van:** 5.1.2.e @epsomail.org>  
**Verzonden:** dinsdag 24 mei 2022 16:12  
**Aan:** 5.1.2.e ff  
**CC:** 5.1.2.e  
**Onderwerp:** RE: EPSO: Genome editing 24.5.2022 – final agenda  
**Bijlagen:** 20\_10\_NO\_Survey questions.docx

Let op, in deze e-mail verzonden door 5.1.2.e @epsomail.org, zijn één of meerdere verdachte links gevonden die uit voorzorg aangepast zijn, zodat deze opnieuw gecontroleerd worden bij het aanklikken. Links kunnen misbruikt worden om malware op uw systeem te installeren. Klik alleen op nog aanwezige links als de e-mail afkomstig is van een door u vertrouwde afzender.

Indien dit niet het geval is dient u deze e-mail direct te verwijderen.

DICTU Servicedesk

Dear participants (all in bcc),

Thank you for a most interesting discussion!  
 As always, we will publish a report later on.

We are happy that several ministries intend to ► submit to the EC NGT consultation and encourage more as well as institute and universities to do so.

Pls find attached the Norwegian consumer survey questionnaire template in English to ► tailor to your country and encourage / perform such a survey.

Report from Norway: [http://secure-web.cisco.com/1Z69CNqacvTj2alfk7qWTy03HV1t5s3\\_pDObzlosY1kZ3-srVbaVEXGugZiUyQkm4To72GWi40zv8s134yxlc8cTpE3G5FIfyBCQhHy8iFnSiol0oNH-ZnvATcl9nqY3yeA6VriQ8giRduWO2eP92FHH3p3ZKJIRZkpDeWSROTM5V0tBZ1IdmVQNT97Cb-hHykkHw4oo3FZ3wz1PemCMC69fADJgMtkkYENXOJ8z43N42zRBc1n2z68oaxz0By9bN4D6uxAs-XQR\\_kPhUvJffa/http%3A%2F%2Fwww.biotechnologiradet.no%2Ffilarkiv%2F2020%2F04%2FReport-consumer-attitudes-to-gene-editing-agri-and-aqua-FINAL.pdf](http://secure-web.cisco.com/1Z69CNqacvTj2alfk7qWTy03HV1t5s3_pDObzlosY1kZ3-srVbaVEXGugZiUyQkm4To72GWi40zv8s134yxlc8cTpE3G5FIfyBCQhHy8iFnSiol0oNH-ZnvATcl9nqY3yeA6VriQ8giRduWO2eP92FHH3p3ZKJIRZkpDeWSROTM5V0tBZ1IdmVQNT97Cb-hHykkHw4oo3FZ3wz1PemCMC69fADJgMtkkYENXOJ8z43N42zRBc1n2z68oaxz0By9bN4D6uxAs-XQR_kPhUvJffa/http%3A%2F%2Fwww.biotechnologiradet.no%2Ffilarkiv%2F2020%2F04%2FReport-consumer-attitudes-to-gene-editing-agri-and-aqua-FINAL.pdf)

Report from Sweden (in Swedish): [https://www.genteknik.se/wp-content/uploads/2022/02/Svenskars-installning-till-genomredigering\\_2022.pdf](https://www.genteknik.se/wp-content/uploads/2022/02/Svenskars-installning-till-genomredigering_2022.pdf)

Information to help EPSO providing input under the Convention on Biological Diversity (CBD) ► pls kindly send to 5.1.2.e regarding Digital Sequence Information (DSI), to Frank regarding Synthetic Biology.

@ Ministry colleagues: We suggest holding the next meeting 2<sup>nd</sup> half March 2023 – ► pls let us know if you recommend an earlier date.

- Part 1 Legislation - EC process, country activities; impact via CBD (DSI, SynBio)
- Part 2: Flagship projects – on Food and nutritional Security (& human health), environmental sustainability / biodiversity

We offer to collaborate with our Swedish colleagues during their EU Presidency.

With best wishes  
 5.1.2.e

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5.1.2.e

5.1.2.e

European Plant Science Organisation, EPSO

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[www.epsoweb.org](http://www.epsoweb.org) ; EU Transparency Register Number 38511867304-09

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**From:** 5.1.2.e **Sent:** 23.5.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Confirmed participants

**Subject:** EPSO: Genome editing 24.5.2022 – final agenda

Dear confirmed participants (all in bcc),

Pls find attached the **invitation with the updated agenda** for our **6<sup>th</sup> informal science and policy meeting ONLINE on 24 May from 11 am – 3pm** Brussels time.

We added for the afternoon a short discussion on related issues under the Convention on Biological Diversity: Digital Sequence Information, Synthetic Biology.

We very much look forward to a fruitful discussion

5.1.2.e

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**From:** 5.1.2.e **Sent:** 20.5.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Confirmed participants

**Subject:** EPSO: Genome editing 24.5.2022 – Zoom Link, agenda and final participant list

Dear confirmed participants (all in bcc),

Please log into the meeting via <https://slu-se.zoom.us/j/62088228964> (Meeting ID: 620 8822 8964 Passcode: 456959) with your actual name between **10:30** and 11 am. Our meeting starts 11 am.

We attach again the **invitation with the agenda** and final **participant list** for our **6<sup>th</sup> informal science and policy meeting ONLINE on 24 May from 11 am – 3pm** Brussels time.

**Ministry / EP colleagues:** please prepare an oral update from your country regarding your views on the EC NGT consultation and progress since November 2021.

We very much look forward to a fruitful discussion

5.1.2.e

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**From:** 5.1.2.e **Sent:** 12.5.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants

**Subject:** EPSO: Genome editing meeting online 24.5.2022 – pls confirm participation by 19 May; Agenda updated

Dear ministry and science colleagues (all in bcc),

the EC opened the public consultation on NGT draft Impact Assessment of Policy Options on 29 April and it will close 22 July:

[https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13119-Legislation-for-plants-produced-by-certain-new-genomic-techniques/public-consultation_en)

This will be the focus of part 1 of our informal meeting with possible next steps and possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide

Pls find attached for **the online meeting on 24 May 2022** from 11 am to 3pm BRU time:

- 6<sup>th</sup> meeting invitation and draft programme
- 6<sup>th</sup> meeting list of participants – **confirmed in bold**, all others pls kindly confirm to 5.1.2.e by 19 May.

We very much look forward to a most interesting discussion

5.1.2.e

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**From:** 5.1.2.e **Sent:** 25.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting POSTPONED to 24.5.2022 – pls confirm participation by 7 April; Report 5th meeting

Dear ministry and science colleagues (all in bcc),

We learned from the EC that they expect the public consultation on NGT Impact Assessment of Policy Options to open in May.

Therefore, we confirm **postponing the 6<sup>th</sup> informal science and policy meeting online to the 24 May 2022** from 11 am to 3pm BRU time.

Please **ALL kindly confirm your participation for the new meeting date 24 May 2022 to us by 7 April.**

Pls find attached:

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- *FYI only: 6<sup>th</sup> meeting original date (28.4.22) list of participants who had confirmed*
- 5<sup>th</sup> meeting report, which we will publish on our website <https://epsoweb.org/> .

On the 24<sup>th</sup> May we will focus on the EC's consultation on their draft impact assessment of policy options (open by then), on possible next steps and on possible impacts of the war in the Ukraine on food security in Europe and globally and how research and innovation can help addressing this.

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**From:** 5.1.2.e **Sent:** 7.3.2022 **To:** 5.1.2.e **Cc:** chairs **Bcc:** Participants  
**Subject:** EPSO: Genome editing next meeting 28.4.2022 - pls confirm participation by 21 March

Dear ministry and science colleagues (all in bcc),

Based on your replies, it is our pleasure to confirm the 6<sup>th</sup> informal science and policy meeting online for the 28 April 2022 from 11 am to 3pm BRU time.

Pls find attached the **list of participants**. Those in bold have confirmed already. Everybody else, **pls kindly confirm to us by 21 March.**

We will send you the draft agenda and the report from the last meeting closer to the time. We will focus on the consultation of the EC on their draft impact assessment of policy options, which should be open by then and on possible next steps. In addition, we will further discuss national consumer surveys and encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** RE: Draft presentation NGT fact finding study , for your review and possible comments  
**Datum:** dinsdag 24 mei 2022 11:00:10  
**Bijlagen:** [image003.png](#)  
[image004.gif](#)  
[image005.png](#)

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Hoi 5.1.2.e,  
 Bedankt voor de mogelijkheid tot reageren.

Een klein detail, maar voel je vrij om deze te negeren:

De opmerking "In most cases it is not possible to confirm how a change in the genome was obtained."

Wat mij betreft is het niet relevant **hoe** de verandering tot stand is gekomen (m.a.w. door welke techniek), maar eerder of het man-made was, of een spontane mutatie. Verder is 'in most cases it is not possible..' alleen een verwachting bij het aantonen van een enkele nucleotide die veranderd is. Zeker niet bij alle varianten van NGT.

Als laatste:

"International database for the identification and detection of GMOs"

Jazeker! WFSR (NL) en BVL (DE) werken met 3 partners samen in de GGO database

Euginius ([www.euginius.eu](http://www.euginius.eu)). Daar staan momenteel al ~52 gene-edited entries in.

Uit een OECD-overleg van afgelopen week weet ik dat er ook een initiatief is uit Japan om een dergelijke database te maken. Dat is jammer, want Euginius kan al heel veel...

En de paar slides staan in schril contrast met de inspanning die jij en je collega's met de FFM hebben gehad ;-)

Groet,  
 5.1.2.e

5.1.2.e | Wageningen Food Safety Research (part of Wageningen University & Research)

PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands

5.1.2.e @wur.nl | +31 (0) 317 5.1.2.e (mobile) | [www.wur.nl/food-safety-research](http://www.wur.nl/food-safety-research)

Wednesday is my regularly day off

Emailh\_logowur



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---

**From:** 5.1.2.e @nwwa.nl>

**Sent:** dinsdag 24 mei 2022 08:14

**To:** 5.1.2.e @minienw.nl>; 5.1.2.e

@ILenT.nl>; 5.1.2.e

@minInv.nl>; 5.1.2.e @wur.nl>

**Subject:** FW: Draft presentation NGT fact finding study , for your review and possible comments

Hoi,

De komende SCoPAFF GMM staat de fact finding missie over NGT's op de agenda. De missieleidster zal daar een korte presentatie geven. We krijgen (tot morgen 14.00) de tijd om een reactie te geven op deze presentatie (aangehecht: findings op slides 5 en 6). Wil een van jullie nog een reactie geven?

Met vriendelijke groet,

5.1.2.e



---

**Van:** 5.1.2.e [redacted] <[redacted]@ec.europa.eu>

**Verzonden:** maandag 23 mei 2022 19:04

**Aan:** 5.1.2.e [redacted] <[redacted]@nvwa.nl>

**CC:** VON 5.1.2.e [redacted] <[redacted]@ec.europa.eu>; 5.1.2.e [redacted]

[redacted] <[redacted]@ec.europa.eu>; 5.1.2.e [redacted]

[redacted] <[redacted]@ec.europa.eu>; 5.1.2.e [redacted]

[redacted] <[redacted]@ec.europa.eu>

**Onderwerp:** Draft presentation NGT fact finding study , for your review and possible comments

Dear 5.1.2.e [redacted]

Please find attached the draft presentation of our fact-finding studies of NGT. I want to emphasize that this is still the draft, and I am sharing it with you and Germany only at this stage. This way you can inform me if there is anything that you would want us to take out or re-word, as you did not yet have the possibility to give your input on the report that is under preparation.

I would appreciate to receive your **agreement or comments by 2 pm (Brussels time) tomorrow Tuesday**. Please let me know if you need more time, and I will see how this can be arranged. The two slides that will benefit from your input are slide 5 and 6 (Preliminary findings 1 and 2).

Kind regards,

5.1.2.e [redacted]

5.1.2.e [redacted]

External Auditor



**European Commission**

DG Sante – Health and Food Safety

Unit F3 – Plants and Organics

Grange, Ireland, Co. Meath

Tel: +353 5.1.2.e [redacted]

5.1.2.e [redacted] <[redacted]@ec.europa.eu>



[https://ec.europa.eu/info/strategy/priorities-2019-2024/stronger-europe-world/eu-solidarity-ukraine\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/stronger-europe-world/eu-solidarity-ukraine_en)

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e @minienw.nl; 5.1.2.e  
**Cc:** 5.1.2.e @hollandbio.nl  
**Onderwerp:** HollandBio/Plantum event voor retail over NGT  
**Datum:** woensdag 25 mei 2022 16:25:24

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Ho 5.1.2.e ),

HollandBio en Plantum organiseren op dinsdag 5 juli 15.00-17.00 een webinar voor (de achterban van) FNLI en CBL over nieuwe veredelings technieken. Het doel is om via een laagdrempelig webinar ketenpartners bij te praten over wat NGT zijn en waarom het een belangrijk debat is om te volgen. Het wordt dus een informeel webinar, met name bedoeld voor bedrijven die er nog niet zo expliciet mee bezig zijn of over hebben nagedacht. Ook de achterbannen van LTO Nederland en Glastuinbouw worden uitgenodigd, maar de primaire focus ligt op FNLI en CBL.

Een van de sprekers is 5.1.2.e van het Genesprout initiatief om over de technologie te praten. Het leek ons ook erg goed en interessant als iemand vanuit jullie ministeries het perspectief van de overheid kan vertellen op dit onderwerp, en met name de Europese ontwikkelingen. Het zou dan gaan om een presentatie van circa 15 minuten, inclusief vragen, met een stukje historie en een samenvatting van wat de Nederlandse overheid als input heeft geleverd.

Zou één van jullie misschien deze presentatie kunnen/willen geven? Wij horen het heel graag, natuurlijk ook als er vragen zijn!

Met vriendelijke groet, ook namens Rianne,

5.1.2.e  
 Beleidsmedewerker  
 06 5.1.2.e  
 Plantum



adres: Vossenburchkade 68 | 2805 PC Gouda  
 telefoon: 0182 5.1.2.e  
 KvK: Rotterdam 24319599  
 website: [http://secure-web.cisco.com/1Po-mXXJHQ-WGWNAFnaF1H2zASMNYQHfYfpAzcpGMteQoPvVUDUOSBVtUt\\_HSQ8-CtDUozRDKSLvQKEEdJVz8uUVFTwVZIVpaDtFKbgwBi1Oft1WFS\\_8T-mCyDZQN6zJw-eQKSCOmIMYW-oxua.iZGRtOxogT-QEyuYGen6k5JXKCDYSVuAlfaRr4mYsWjP-a9hDs8JsihZ1UVMxBOZ3gxSIJZcrSq8aAoHEjhlzmHxSJFbP6jiue\\_1efywz58fsA5fl\\_ICGzGI\\_Ict0A/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1Po-mXXJHQ-WGWNAFnaF1H2zASMNYQHfYfpAzcpGMteQoPvVUDUOSBVtUt_HSQ8-CtDUozRDKSLvQKEEdJVz8uUVFTwVZIVpaDtFKbgwBi1Oft1WFS_8T-mCyDZQN6zJw-eQKSCOmIMYW-oxua.iZGRtOxogT-QEyuYGen6k5JXKCDYSVuAlfaRr4mYsWjP-a9hDs8JsihZ1UVMxBOZ3gxSIJZcrSq8aAoHEjhlzmHxSJFbP6jiue_1efywz58fsA5fl_ICGzGI_Ict0A/http%3A%2F%2Fwww.plantum.nl)  
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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** RE: Draft Report\_Fact-finding study of the Netherlands\_DG(SANTE) 2022-7397\_Genetically Modified Organisms\_7 to 11 February 2022  
**Datum:** dinsdag 31 mei 2022 08:37:11  
**Bijlagen:** [image001.png](#)  
[image002.jpg](#)

---

Hallo 5.1.2.e et al.,

Dank!

Een opmerking over de MR\_2022-7397:

"WFSR: Wageningen Food Safety Research - Official laboratory and National Reference Laboratory in the Netherlands for GMO detection/identification methods"

Ik zou hiervan maken: "WFSR: Wageningen Food Safety Research - Official laboratory and National Reference Laboratory in the Netherlands for Genetically Modified Food and Feed"

Verder heb ik het gevoel dat de delegatie zijn werk goed heeft gedaan. Ik zie vooralsnog geen onvolkomenheden. Zelf heb ik geen probleem met het openbaar maken van het rapport. Ook omdat ik de consequenties niet kan overzien. Maar nogmaals: inhoudelijk klopt het, en we kunnen nu inderdaad niets aantonen als we geen voorkennis hebben.

Groet,  
5.1.2.e

5.1.2.e | Wageningen Food Safety Research (part of Wageningen University & Research)  
 PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands  
 5.1.2.e @wur.nl | +31 (0) 317 5.1.2.e (mobile) | [www.wur.nl/food-safety-research](http://www.wur.nl/food-safety-research)  
 Wednesday is my regularly day off

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**From:** 5.1.2.e @nvwa.nl>  
**Sent:** maandag 30 mei 2022 20:10  
**To:** 5.1.2.e @minienw.nl>; 5.1.2.e @minInv.nl>; 5.1.2.e @ILenT.nl>;  
 5.1.2.e @wur.nl>  
**Subject:** FW: Draft Report\_Fact-finding study of the Netherlands\_DG(SANTE) 2022-7397\_Genetically Modified Organisms\_7 to 11 February 2022

Hallo 5.1.2.e

Aangehecht het concept rapport en begeleidende brief van HFAA aangaande de fact finding studie over NGT's.

We krijgen nog een vertaling naar het Nederlands. Vanaf dat moment hebben we 25 werkdagen om inhoudelijk te reageren op het concept.

Daarnaast heeft HFAA in de brief de volgende vraag voorgelegd: of wij bezwaar hebben dat dit rapport publiek gepubliceerd wordt? De bedoeling was van niet, maar Duitsland heeft verzocht het rapport van de fact finding in Duitsland wel te publiceren.

Graag dus jullie reactie op het inhoudelijke concept (ik zal de NL vertaling doorsturen zodra ik die krijg) en de vraag hoe jullie tegen publiek publiceren ervan kijken.

Met vriendelijke groet,

5.1.2.e

---

**Van:** 5.1.2.e <[redacted]@ec.europa.eu>

**Verzonden:** maandag 30 mei 2022 18:21

**Aan:** 5.1.2.e <[redacted]@nvwa.nl>; NVWA

Klantcontactcentrum <[info@nvwa.nl](mailto:info@nvwa.nl)>

**CC:** 5.1.2.e <[redacted]@minbuza.nl>; 5.1.2.e <[redacted]@minbuza.nl>

**Onderwerp:** Draft Report\_Fact-finding study of the Netherlands\_DG(SANTE) 2022-7397\_Genetically Modified Organisms\_7 to 11 February 2022

**Attn:** 5.1.2.e, 5.1.2.e

**c.c.:** 5.1.2.e, 5.1.2.e

On behalf of 5.1.2.e, Director, please find attached the above-mentioned fact-finding study draft report, together with the associated annex and cover letter.

Please note that the cover letter and report have been sent for translation into Dutch and will be forwarded to you as soon as they become available.

Kind regards,

5.1.2.e



**European Commission**

Directorate-General for Health and Food Safety

Directorate F – Health and food audits and analysis

Unit F3 – Plants and organics

GRAN 0/175

Grange, Dunsany, Co. Meath, Ireland

Email: 5.1.2.e <[redacted]@ec.europa.eu>

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** Fwd: Will you join us at POLITICO Live's event "Gene-editing revamp: the solution to climate change and food security?" | June 27  
**Datum:** donderdag 2 juni 2022 11:39:12

---

Begin doorgestuurd bericht:

**Van:** POLITICO Live <live@mc.politico.eu>  
**Datum:** 1 juni 2022 om 11:20:56 CEST  
**Aan:** 5.1.2.e @mvo.nl>  
**Onderwerp:** Will you join us at POLITICO Live's event "Gene-editing revamp: the solution to climate change and food security?" | June 27  
**Antwoord aan:** POLITICO Live <reply-fef216757d6303-1033\_HTML-12888383-536000464-1010@mc.politico.eu>



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## You're invited

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We're pleased to invite you to tune in for a compelling debate at POLITICO Live's virtual event "**Gene-editing revamp: the solution to climate change and food security?**" on Monday, June 27.

[REGISTER FOR ONLINE ATTENDANCE](#)

## Questions to be addressed include

---

- What is the potential of NGTs to meet Europe's climate neutrality

goal? How can NGTs be used responsibly to deliver on sustainability and benefit society?

- How can these technologies contribute to food security?
- What is the evidence showing that gene-edited seeds will help address the climate crisis and help limit agriculture's impact on the environment? How are these new NGTs different from GMOs, which also came with the same promises?

Organized in partnership with Bayer, this event is part of POLITICO's Drive Sustainable Progress series and convenes a high-level panel discussion with European and national policymakers as well as international agriculture experts for a frank discussion **on how innovation like NGTs can improve farmers' lives while meeting the EU Green Deal objectives.**

## All you need to know

---

**Gene-editing revamp: the solution to climate change and food security?**

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27/06/2022

[REGISTER TODAY](#)

16:30 CEST

Brussels



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Van: 5.1.2.e  
 Aan: 5.1.2.e  
 Onderwerp: RE: HollandBio/Plantum event voor retail over NGT  
 Datum: woensdag 8 juni 2022 13:46:13

---

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DICTU Servicedesk

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Fijn!

Vinden jullie het ok als de Webinar wordt recorded? Moet ik namelijk wel vantevoren vragen!

Wil namelijk graag de recording (of tenminste de slides) verder kunnen delen binnen de keten (FNLI heeft een digitale kennisbank bijv).

De andere spreker, 5.1.2.e spreekt geen Nederlands. Het is daarom het meest logisch als jullie ook een presentatie zullen houden in het Engels, neem aan ok? (ondanks dat publiek vooral Nederlands zal zijn dus niet te ingewikkeld Engels ).

Ik zal jullie binnenkort een link doorsturen voor registratie, wel zo handig en dan volgt verdere informatie (zoals inloglink) automatisch.

Groeten,

5.1.2.e

---

Van: 5.1.2.e @minlnv.nl>

Verzonden: woensdag 8 juni 2022 13:25

Aan: 5.1.2.e plantum.nl>; 5.1.2.e @minienw.nl' 5.1.2.e @minienw.nl>; 5.1.2.e @minlnv.nl>

CC: 5.1.2.e @hollandbio.nl>

Onderwerp: RE: HollandBio/Plantum event voor retail over NGT

Ha 5.1.2.e

5.1.2.e en ik zullen samen een presentatie houden. Jullie kunnen ons dus inplannen!

Vriendelijke groet,

5.1.2.e

---

Van: 5.1.2.e )

Verzonden: woensdag 1 juni 2022 13:39

Aan: 5.1.2.e @plantum.nl>; 5.1.2.e @minienw.nl' 5.1.2.e @minienw.nl>; 5.1.2.e @minlnv.nl>

CC: 5.1.2.e @hollandbio.nl

Onderwerp: RE: HollandBio/Plantum event voor retail over NGT

Ha 5.1.2.e

Lijkt mij prima om een presentatie te geven. 5.1.2.e is morgen weer aan het werk (was even een paar dagen afwezig), wilde nog even met haar bespreken wie, hoe en wat.

Vriendelijke groet,

5.1.2.e

---

Van: 5.1.2.e @plantum.nl>

Verzonden: woensdag 1 juni 2022 11:33

Aan: 5.1.2.e ker@minlnv.nl>; 5.1.2.e @minienw.nl' 5.1.2.e @minienw.nl>; 5.1.2.e minlnv.nl>

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Onderwerp: RE: HollandBio/Plantum event voor retail over NGT

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Beste allen,

Ik vroeg mij af of jullie al de mogelijkheid hebben gehad om mijn eerdere bericht te bespreken, over een online event voor de retailsector? We horen het heel graag, zodat we het programma kunnen formaliseren en uitnodigingen kunnen versturen. Alvast bedankt!

Groeten,

5.1.2.e

**Van:** 5.1.2.e

**Verzonden:** woensdag 25 mei 2022 16:25

**Aan:** 5.1.2.e @minlnv.nl; 5.1.2.e @minienw.nl; 5.1.2.e @minienw.nl; 5.1.2.e @minienw.nl; 5.1.2.e

5.1.2.e @minez.nl>

**cc:** 5.1.2.e @hollandbio.nl

**Onderwerp:** HollandBio/Plantum event voor retail over NGT

Hoi 5.1.2.e in cc),

HollandBio en Plantum organiseren op dinsdag 5 juli 15.00-17.00 een webinar voor (de achterban van) FNLI en CBL over nieuwe veredelings technieken. Het doel is om via een laagdrempelig webinar ketenpartners bij te praten over wat NGT zijn en waarom het een belangrijk debat is om te volgen. Het wordt dus een informeel webinar, met name bedoeld voor bedrijven die er nog niet zo expliciet mee bezig zijn of over hebben nagedacht. Ook de achterbannen van LTO Nederland en Glastuinbouw worden uitgenodigd, maar de primaire focus ligt op FNLI en CBL.

Een van de sprekers is 5.1.2.e van het Genesprout initiatief om over de technologie te praten. Het leek ons ook erg goed en interessant als iemand vanuit jullie ministeries het perspectief van de overheid kan vertellen op dit onderwerp, en met name de Europese ontwikkelingen. Het zou dan gaan om een presentatie van circa 15 minuten, inclusief vragen, met een stukje historie en een samenvatting van wat de Nederlandse overheid als input heeft geleverd.

Zou één van jullie misschien deze presentatie kunnen/willen geven? Wij horen het heel graag, natuurlijk ook als er vragen zijn!

Met vriendelijke groet, ook namens 5.1.2.e

5.1.2.e

Beleidsmedewerker

06 5.1.2.e

Plantum



adres: Vossenburchkade 68 | 2805 PC Gouda

telefoon: 0182 68 86 68

KvK: Rotterdam 24319599

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[http://secure-web.cisco.com/1UHPnmGLJeRRMxOMnpCtz4ci1UkuRg4bbJqev-pN3VFFm67ZDxcrk3MrqOdUxcqviUEYeoK54qlBjvi3-54kA8BcEw2lxOUUn-ov6Lfifg20UREKyBLFJeMz88V9CTyZZxxwGiWL74\\_gPveTzKMGejZGnfAnawwdJmOY-OXWOKetZHE85vg80m3HOR4tNI5Xs1y3JT8jcuS1OWHnX4LVLdtnxcm9jCyGjNrlGkmDgSa8zujK\\_mzzCrTRwr025SK-BQMGO2qxRvIEAyGmsBMiNg/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1UHPnmGLJeRRMxOMnpCtz4ci1UkuRg4bbJqev-pN3VFFm67ZDxcrk3MrqOdUxcqviUEYeoK54qlBjvi3-54kA8BcEw2lxOUUn-ov6Lfifg20UREKyBLFJeMz88V9CTyZZxxwGiWL74_gPveTzKMGejZGnfAnawwdJmOY-OXWOKetZHE85vg80m3HOR4tNI5Xs1y3JT8jcuS1OWHnX4LVLdtnxcm9jCyGjNrlGkmDgSa8zujK_mzzCrTRwr025SK-BQMGO2qxRvIEAyGmsBMiNg/http%3A%2F%2Fwww.plantum.nl) | [www.plant-kracht.nl](http://www.plant-kracht.nl)

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wordt u verzocht dat aan de afzender te melden en het bericht te verwijderen.

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**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** FW: Invitation Webinar New Plant Breeding Techniques 5th of July 15:00 – 16:30  
**Datum:** vrijdag 10 juni 2022 11:32:44  
**Bijlagen:** [image001.png](#)

---

Goedemorgen beiden,

Gisteren heb ik de uitnodiging voor de webinar naar CBL, FNLI en GroentenFruit Huis gestuurd. LTO en Glastuinbouw Nederland is ook op de hoogte gesteld van de webinar.

Zouden jullie je ook willen registreren via de link, zodat jullie ook de juiste meeting link tzt zullen ontvangen?  
<https://binformed-hollandbio.odoo.com/event/webinar-new-plant-breeding-techniques-2022-07-05-261/register>

Laten we contact houden als er nog vragen zijn en 5.1.2.e en ik zullen onze slides vooraf delen met jullie.  
 Graag ontvang 5.1.2.e en ik jullie slides ook voorafgaande aan de webinar!

Best wishes,  
 5.1.2.e

---

**Van:** 5.1.2.e  
**Verzonden:** donderdag 9 juni 2022 09:22  
**Aan:** 5.1.2.e <[5.1.2.e@fnli.nl](mailto:5.1.2.e@fnli.nl)>; 5.1.2.e <[5.1.2.e@fnli.nl](mailto:5.1.2.e@fnli.nl)>  
**Cc:** 5.1.2.e <[5.1.2.e@plantum.nl](mailto:5.1.2.e@plantum.nl)>  
**Onderwerp:** Invitation Webinar New Plant Breeding Techniques 5th of July 15:00 – 16:30

Dear 5.1.2.e,

Plantum en HollandBIO are pleased to invite you and FNLI members to an informative webinar on the recent developments regarding the legislation for plants (such as fruits, vegetables, grains) produced by certain new plant breeding techniques (otherwise known as New Genomic Techniques, or NGTs (such as CRISPR technology).

In 2018 the European court ruled that all New Genomic Techniques fall under the GMO regulation. Last year the European Commission published a study, saying that the GMO regulation is not fit for purpose. At this moment a public consultation is open to gather input from all experts in the field on this topic. Next year, a legal proposal by the European Commission is expected.

During this webinar:

- 5.1.2.e, PhD student Wageningen University and Co-founder of GeneSprout Initiative will present "A look at New Genomic Techniques: What are they and why should we care?"
- 5.1.2.e (Ministry of Infrastructure and Water Management) and Arno Dekker (Ministry of Agriculture, Nature and Food Quality) will elaborate on the perspective from our government to potential future legislation regarding New Genomic Techniques on European and national level.

There will be plenty of opportunity to ask questions.

This webinar (in English) is freely accessible, however **registration is required and can be done via [this link](#)**.  
 It will take place online on **Tuesday 5<sup>th</sup> of July, 15:00-16:30**.

Once registered you will receive a calendar invite and the link to attend the webinar one day prior to the event.

In case you have any questions please contact [Plantum](#) or [HollandBIO](#).

Please note that this webinar will be recorded.

Best wishes,

5.1.2.e (HollandBIO) and 5.1.2.e (Plantum)



5.1.2.e | [@hollandbio.nl](mailto:info@hollandbio.nl) |  
[www.hollandbio.nl](http://www.hollandbio.nl) | [twitter.com/hollandbio](https://twitter.com/hollandbio)  
T: + 31 (0)70 833 1333 | M: + 31 (0)6 5.1.2.e

**Van:** 5.1.2.e @wur.nl>  
**Verzonden:** woensdag 15 juni 2022 11:36  
**Aan:** 5.1.2.e  
 5.1.2.e  
**Onderwerp:** FW: Call for expert to join the ENGL working group on "Detection of food and feed plant products obtained by new mutagenesis techniques"  
**Bijlagen:** Mandate\_ENGL\_WG\_NGT.pdf  
**Ondertekend door:** 5.1.2.e @wur.nl  
  
**Urgentie:** Hoog

Ter kennisgeving

5.1.2.e | Wageningen Food Safety Research (part of Wageningen University & Research)  
 PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands  
 5.1.2.e @wur.nl | +31 (0) 317 5.1.2.e (mobile) | [www.wur.nl/food-safety-research](http://www.wur.nl/food-safety-research)  
 Wednesday is my regularly day off



Our disclaimer: <https://www.wur.nl/en/disclaimer-1.htm>

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**From:** 5.1.2.e @ec.europa.eu <5.1.2.e @ec.europa.eu>  
**Sent:** dinsdag 14 juni 2022 14:36  
**To:** 5.1.2.e @ec.europa.eu>  
**Cc:** 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>  
**Subject:** Call for expert to join the ENGL working group on "Detection of food and feed plant products obtained by new mutagenesis techniques"  
**Importance:** High

Dear ENGL members,

please find attached the mandate for an ENGL Working Group on "Detection of food and feed plant products obtained by new mutagenesis techniques".

The WG is expected to meet and start its activities very soon; it is therefore urgent to identify the experts who will be part of it.

Please send your expression of interest in joining the WG to the Secretariat by 28/06/2022.

Thank you for your cooperation

5.1.2.e

**Van:** 5.1.2.e @plantum.nl>  
**Verzonden:** woensdag 15 juni 2022 18:09  
**Aan:** 5.1.2.e  
**CC:** 5.1.2.e  
**Onderwerp:** RE: Search for NGT demonstration cases for EC communication

Ho 5.1.2.e

Mijn excuses voor de rijkelijk late reply... Ik werd onlangs gewezen op een publieke database die EU-SAGE bijhoudt over toepassingen van NGT die zij konden vinden via andere publieke kanalen. Het overzicht is hier te vinden: <https://www.eu-sage.eu/genome-search>. In die database kan zelfs nog op specifieke toepassingen worden gefilterd en wordt, voor zover ik kan inschatten, regelmatig geüpdatet.

Groeten,  
5.1.2.e

---

**Van:** 5.1.2.e @topsectortu.nl>  
**Verzonden:** vrijdag 8 april 2022 11:08  
**Aan:** 5.1.2.e @plantum.nl>; 5.1.2.e  
 @hollandbio.nl>; 5.1.2.e @wur.nl>; 5.1.2.e  
 @wur.nl>; 5.1.2.e @wur.nl>; 5.1.2.e  
 @minlnv.nl>; 5.1.2.e @hollandbio.nl>; 5.1.2.e  
 @wur.nl>  
**CC:** 5.1.2.e @plantum.nl>; 5.1.2.e  
 @hollandbio.nl>  
**Onderwerp:** Search for NGT demonstration cases for EC communication  
**Urgentie:** Hoog

Beste allemaal,

Zoals een aantal van jullie weten is Topsector T&U lid van Plants ETP, een Brusselse organisatie om kennis over onze plantensector onder de aandacht te brengen van de EC. Er zijn momenteel 2 werkgroepen acties: één op Sustainable Agriculture (SA, waar ikzelf in zit) en één op New Genomic Technologies (NGT, waar 5.1.2.e in zit namens T&U). Er wordt gerapporteerd over onze activiteiten in de T&U EU Lobbygroep Kennis & Innovatie waarin het bedrijfsleven (via brancheorganisaties), LNV en WUR deelnemen.

Afgelopen najaar/winter heeft de werkgroep SA een lijvige position paper opgeleverd, die als basis zal dienen voor onze boodschap de komende jaren. Voor geïnteresseerden een samenvatting bijgevoegd in de vorm van een PPT.

We zijn nu bezig om een werkplan te maken voor de komende 2 jaar, daar hebben we vorige week een 1<sup>e</sup> slag in gemaakt tijdens een live bijeenkomst in Brussel (wat een verademing na 2 jaar ZOOM!). Eén van de actielijnen is om de werkgroep NGT te ondersteunen via het aanleveren van **goede NGT voorbeelden** om over te communiceren via factsheets richting de EC. Zie slide hieronder. Daarbij aandacht voor verschillende methoden, waaronder ook cisgenese (appel, 5.1.2.e).

Mijn (mannelijke) naamgenoot 5.1.2.e heeft een aantal richtlijnen gemaakt waar zo'n voorbeeld aan zou moeten voldoen in aanvulling op de 2<sup>e</sup> slide (zie Email hieronder).

Er **zit haast achter de actie**, want we willen rond de zomer de factsheets gereed hebben voor lobby doeleinden in verband met de tijdlijn wetgeving EC. Daarna zal het materiaal benut gaat worden voor lobby bij Europees Parlement (ivm stemming over wetgeving in latere fase).

Graag wil ik jullie vragen te helpen om goede voorbeelden te vinden!

Alvast bedankt voor het meedenken!

5.1.2.e

## 1. NGTs – developing factsheets URGENT



<b>What is the advantage in terms of...</b> <ul style="list-style-type: none"><li>Health</li><li>Sustainability</li><li>Input usage</li><li>Drought</li><li>etc...</li></ul> Find 3-4 good examples of NGT crops (food/feed)	<b>Next steps</b> <ul style="list-style-type: none"><li>Develop structure of factsheets</li><li>Organise “sprint workshop” (May/Jun)</li><li>Develop content</li></ul> <b>Lead / sub-teams</b> <ul style="list-style-type: none"><li>Template team (TT): Christoph, Branwen, Amrit</li><li>Examples team (ET): José, Koen, José Luis</li></ul> <b>Timeline</b> <ul style="list-style-type: none"><li>End Apr Finalise template (TT)<ul style="list-style-type: none"><li>establish clear requirements for examples and start collecting (ET + WG SA and NGTs members)</li></ul></li><li>May/Jun WG workshop <b>need to set date</b></li><li>Jul/Aug Finalising factsheets</li></ul>
<b>Outcomes</b> <ul style="list-style-type: none"><li>Factsheets with Pros and Cons (or Problem - solution)<ul style="list-style-type: none"><li>-&gt; influence legislative proposal</li><li>-&gt; lobbying afterwards</li></ul></li><li>Compare with other breeding approaches</li></ul>	

# 1. NGTs - Examples requirements (suggestions by JL)

- To contribute positively to sustainable agriculture (how does the NGT-derived product do it?)
- The purpose of the modification: that it can be perceived as positive by the public
- That the NGT-derived product could not have been obtained by other methods (or that it would have been a much more difficult, lengthy, or uncertain process)
- That it is based on sound and solid science (we should check the specifics, for instance about the variety used for the modification and if it is applicable to agricultural elite varieties)
- The potential impact, especially in the EU (size or magnitude of)

**From:** 5.1.2.e @cragenomica.es>  
**Sent:** donderdag 31 maart 2022 22:52  
**To:** 5.1.2.e @plantetp.eu>; 5.1.2.e @eurofins.com>;  
5.1.2.e @copa-cogeca.eu>; 5.1.2.e @topsectortu.nl>;  
5.1.2.e @basf.com>; 5.1.2.e @hutton.ac.uk>  
**Cc:** 5.1.2.e @cragenomica.es>  
**Subject:** WG SA core group meeting - follow up

Dear all:

To follow up on the topics that we discussed in the WG this past Tuesday.

The open session on NGTs on Wednesday was very interesting, and I think very useful to help us think about the NGT examples that we will collect and select. An important point was raised by Irene Sacristán in her presentation, and that is that the negative campaign about NGTs was very skeptical about NGTs contributing to sustainability. Taking this into account as well as some other points that were mentioned by Irene and the other two speakers, I put together some points that we may want to consider for selecting examples:

- **To contribute positively to sustainable agriculture (how does the NGT-derived product do it?)**
- The purpose of the modification: that it can be perceived as positive by the public
- That the NGT-derived product could not have been obtained by other methods (or that it would have been a much more difficult, lengthy, or uncertain process)
- That it is based on sound and solid science (we should check the specifics, for instance about the variety used for the modification and if it is applicable to agricultural elite varieties)
- The potential impact, especially in the EU (size or magnitude of)

I think that ideal examples should check on all of the above.

At the same time, I was thinking about the structure of the template for the examples (yes, I know that is not my sub-team, but anyway...). I mentioned "problem - solution" in the meeting, but a further suggestion would be: "problem - solution - impact & prospects - further info and references"

As one potential example, there is one recently published in Nature that I think meets all the above criteria:

**Genome-edited powdery mildew resistance in wheat without growth penalties**

<https://www.nature.com/articles/s41586-022-04395-9>

The pdf is too large to be sent by mail, but I can share it by other means if you do not have access to it.

This example has one additional "lesson": developed in China and introduced in Chinese elite varieties, so in order to use that modification in Europe or the US probably a license would be required...

It would be interesting to know the magnitude of the wheat powdery mildew problem in Europe, as this will determine the impact.

In the WG meeting somebody mentioned the GABA-enriched tomato that will be soon commercialized in Japan (sorry I do not remember who), and there was a recent news article about that in Nature Biotechnology. However, I am not sure that the GABA-tomato would be a best example because, as indicated in the news article "There's no consensus on the health benefits of consuming GABA, nor evidence that it can cross the blood-brain barrier and reach the central nervous system," and "There is limited evidence for stress and very limited evidence for sleep benefits of oral GABA intake.", despite fact that "In Japan, dietary supplements and foods enriched for GABA are popular among the public," which I guess is part of the reason they went for this product...

Best wishes,

5.1.2.e

ICREA Research Professor

Tel. +34 5.1.2.e ext. 3208

5.1.2.e [@cragenomica.es](mailto:5.1.2.e@cragenomica.es)

icrea.cat

cragenomica.es



**Centre for Research in Agricultural Genomics**

Edifici CRAG - Campus UAB

08193 Cerdanyola del Vallès

Barcelona, Spain





**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Onderwerp:** RE: Call for expert to join the ENGL working group on "Detection of food and feed plant products obtained by new mutagenesis techniques"  
**Datum:** woensdag 15 juni 2022 12:17:18  
**Bijlagen:** [image001.png](#)

---

Hoi 5.1.2.e,  
 Dank! Ik ben benieuwd naar de conclusies van de WG.

Met vriendelijke groet,  
 5.1.2.e

---

**Van:** 5.1.2.e @wur.nl>  
**Verzonden:** woensdag 15 juni 2022 11:36  
**Aan:** 5.1.2.e @minInv.nl>; 5.1.2.e @wur.nl>; 5.1.2.e @wur.nl>; 5.1.2.e @wur.nl>; 5.1.2.e @wur.nl>; 5.1.2.e @minInv.nl>; 5.1.2.e @wur.nl>

**Onderwerp:** FW: Call for expert to join the ENGL working group on "Detection of food and feed plant products obtained by new mutagenesis techniques"  
**Urgentie:** Hoog

Ter kennisgeving

5.1.2.e Wageningen Food Safety Research (part of Wageningen University & Research)  
 PO Box 230, 6700 AE Wageningen, Akkermaalsbos 2 (building 123), 6708 WB Wageningen, Netherlands  
 5.1.2.e @wur.nl | +31 (0) 317 51212.e mobile | [www.wur.nl/food-safety-research](http://www.wur.nl/food-safety-research)  
 Wednesday is my regularly day off



Our disclaimer: <https://www.wur.nl/en/disclaimer-1.htm>

---

**From:** [JRC-ENGL-SECRETARIAT@ec.europa.eu](mailto:JRC-ENGL-SECRETARIAT@ec.europa.eu) <[JRC-ENGL-SECRETARIAT@ec.europa.eu](mailto:JRC-ENGL-SECRETARIAT@ec.europa.eu)>  
**Sent:** dinsdag 14 juni 2022 14:36  
**To:** 5.1.2.e @ec.europa.eu>  
**Cc:** 5.1.2.e @ec.europa.eu> 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>; 5.1.2.e @ec.europa.eu>

**Subject:** Call for expert to join the ENGL working group on "Detection of food and feed plant products obtained by new mutagenesis techniques"  
**Importance:** High

Dear ENGL members,

please find attached the mandate for an ENGL Working Group on "Detection of food and feed plant products obtained by new mutagenesis techniques".

The WG is expected to meet and start its activities very soon; it is therefore urgent to identify the experts who will be part of it.

Please send your expression of interest in joining the WG to the Secretariat by 28/06/2022.

Thank you for your cooperation

5.1.2.e

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e  
**Onderwerp:** RE: Conceptrapport FFM operators  
**Datum:** zondag 19 juni 2022 19:11:24  
**Bijlagen:** [220615 consultancy text to publish.docx](#)

---

Beste allen,

Ik heb de bedrijven gesproken en wij hebben geen bezwaar tegen publicatie van de tekst. Ik heb nog wel enkele (tekstuele) suggesties gekregen. Deze zijn terug te vinden in het bijgevoegde bestand, en hieronder nog een punt:

“Onder 24. zit er alleen een zinssnede die we niet helemaal herkennen, en die beter weggelaten kan worden.

*.....producers of GMOs, and preferred to produce the same products regardless of the final market.*

We willen de zin graag laten stoppen achter GMOs, anders geeft het mogelijk verwarring.”

Hopelijk hebben jullie nog de mogelijkheid om naar de tekstuele voorstellen in het document te kijken, en is het mogelijk om de genoemde zinssnede te verwijderen. Ik hoor het heel graag!

Met vriendelijke groeten,

5.1.2.e

---

**Van:** 5.1.2.e @nvwa.nl>

**Verzonden:** woensdag 15 juni 2022 16:37

**Aan:** 5.1.2.e @minInv.nl>; 5.1.2.e

@plantum.nl>

**cc:** 5.1.2.e @minienw.nl>

**Onderwerp:** RE: Conceptrapport FFM operators

Hi allen,

Om de verwachtingen wat scherper te stellen: het is alleen mogelijk om fouten te herstellen (zaken die niet zo gezegd zijn) of te vragen om zaken (verder) te anonimiseren, indien iets te herleiden is naar een individueel bedrijf.

Er was overigens nooit (ook nu niet) sprake van dat er niet-geanonimiseerd zou worden gerapporteerd. In eerste instantie is aangegeven dat alleen het samenvattende algehele rapport zou worden gepubliceerd, maar nadat de Duitse autoriteiten hebben aangegeven dat zij de voorkeur hebben om ook het Duitse landenrapport te publiceren is ons gevraagd of we daar bezwaar tegen hadden. In alle gevallen zal het geanonimiseerd zijn.

Met vriendelijke groet,

5.1.2.e

---

**Van:** 5.1.2.e @minInv.nl>

**Verzonden:** woensdag 15 juni 2022 14:09

**Aan:** 5.1.2.e @plantum.nl>

**cc:** 5.1.2.e @nvwa.nl>; 5.1.2.e

@minienw.nl>

**Onderwerp:** Conceptrapport FFM operators

Ha 5.1.2.e

We hebben het conceptrapport van de FFM gekregen. Zij hebben hierbij ook de vraag bij ons gelegd of het rapport toch openbaar mag worden gemaakt. Wat ons betreft zien we hier geen problemen mee, maar jullie hebben natuurlijk ook als operators een dag gepresenteerd onder het idee dat het geanonimiseerd zou zijn. Vandaar mijn vraag of jullie kunnen leven met dat de onderstaande tekst openbaar wordt gemaakt:

## 5.6. MEETINGS WITH OPERATORS

### Findings

22. The study team met with representatives and operators from the plant breeding industry. They emphasised the potential benefits of NGTs, compared with traditional plant breeding techniques, when developing traits for new plant varieties. The main benefit was the fast progress when using NGTs, with which a new trait could be developed in 5-10 years, as compared to up to 20-30 years with traditional techniques. One operator further stated that some traits, such as resistance against certain diseases in plants, were impossible to achieve through traditional plant breeding, as the changes introduced were not stable enough, meaning that the resistance would soon be lost. The operator explained that by instead using NGTs, they could make the trait more stable, and the resistance would remain longer.

23. The operators informed the study team that they currently use NGTs in their research, but not when developing products to be placed on the market. One operator however informed the study team that following the ruling of the Court of Justice referred to in section 4.1, their company had ended on-going research projects, which included the use of NGTs.

24. Operators further informed the study team that the main reason for companies to refrain from using NGTs for products to be placed on the market is that the EU rules consider these products to be GMOs. While companies could market these products in third countries, where the products would not be considered GMOs, they were not interested to be seen as producers of GMOs, and preferred to produce the same products regardless of the final market. In this context, the operators highlighted the global aspects of the plant breeding industry, and considered that the current EU legislation had a negative impact on the competitiveness of EU plant breeding companies.

25. The operators further explained that should NGT products be deregulated and not considered as GMOs under EU legislation, they would still continue to use traditional plant breeding techniques in combination with NGTs, when developing new traits and plant varieties.

Met vriendelijke groet,

5.1.2.e

Beleidsmedewerker Biotechnologie & Crisisbeleidsadviseur Fytosanitair

.....  
**Directie Plantaardige Agroketens en Voedselkwaliteit**  
**Ministerie van Landbouw, Natuur en Voedselkwaliteit**

Bezuidenhoutseweg 73 | 2594 AC | Den Haag  
Postbus 20401 | 2500 EK | Den Haag

.....  
**M 065.1.2.e**

[www.rijksoverheid.nl/Inv](http://www.rijksoverheid.nl/Inv)

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De Staat aanvaardt geen aansprakelijkheid voor schade, van welke aard ook, die verband houdt met risico's verbonden aan het elektronisch

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## 5.6. MEETINGS WITH OPERATORS

### Findings

22. The study team met with representatives and operators from the plant breeding industry. They ~~emphasised~~emphasized the potential benefits of NGTs, compared with and in addition to traditional

plant breeding techniques, when developing trait\_s for new plant varieties, especially for polyploid and/or clonal crops. The main benefit was the fast progress when using NGTs, with which a new trait could be developed in 5-10 years, as compared to up to 20-30 years of crossing and selection with traditional techniques.

One operator further stated that some traits, such as resistance against certain diseases in plants, were impossible to achieve through traditional plant breeding, as the changes introduced were not stable enough, meaning that the resistance would soon be lost. The operator explained that by instead using NGTs, they could make the trait more stable, and the resistance would ~~remain longer~~sustain.

23. The operators informed the study team that they currently use NGTs in their research, but not when developing products to be placed on the market. One operator however informed the study team that following the ruling of the Court of Justice referred to in section 4.1, their company had ended on-going research projects, which included the use of NGTs.

24. Operators further informed the study team that the main reason for companies to refrain from using NGTs for products to be placed on the market is that the EU rules consider these products to be GMOs. While companies could market these products in third countries, where the products would not be considered GMOs, they were not interested to be seen as producers of GMOs, and preferred to produce the same products regardless of the final market. In this context, the operators highlighted the global aspects of the plant breeding industry, and considered that the current EU legislation had a negative impact on the competitiveness of EU plant breeding companies and EU market as such.

25. The operators further explained that should NGT products and events be deregulated and not considered as ~~GMOs~~conventional under EU legislation, they would still continue to use traditional

plant breeding techniques in combination with NGTs. ~~To, when develop~~ing new traits and plant varieties faster in order to have an earlier major positive impact on sustainability goals.

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e @mnh.nl;  
 5.1.2.e @chemistrynl.com; 5.1.2.e @radboudumc.nl;  
 5.1.2.e @innovatievegeneesmiddelen.nl; 5.1.2.e @rivm.nl; 5.1.2.e  
 @lto.nl; 5.1.2.e @erasmusmc.nl; 5.1.2.e @rivm.nl;  
 5.1.2.e @tki-agrifood.nl; 5.1.2.e @yahoo.com; 5.1.2.e @erasmusmc.nl; 5.1.2.e  
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 @minocw.nl; 5.1.2.e @lto.nl; 5.1.2.e @wur.nl;  
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 mkb.nl; 5.1.2.e @georgemolenkamp.nl; 5.1.2.e @bionext.nl; 5.1.2.e @goedewaar.nl  
**Onderwerp:** HollandBIO DRAFT input EC NGT consultatie  
**Datum:** dinsdag 21 juni 2022 16:04:10  
**Bijlagen:** [DRAFT Public consultation on plants produced by certain new genomic techniques HollandBIO.docx](#)

Hoi allemaal,

Hierbij alvast onze DRAFT input op de EC NGT consultatie. De komende weken schaven we dit her en der nog iets aan. Zodra ik de final versie heb om in te dienen zal ik deze jullie ook nog toesturen (mid juli).

Onze key messages zijn vergelijkbaar met [onze feedback op de inception impact assessment](#):

- Belangrijk dat wetgeving zich focust op eindproduct en niet discrimineren op gebruikte techniek
- Uitbreiding van scope is van belang (incl microorganismen)
- Duurzaamheid moet geen toegevoegde drempel geven en ook niet alleen op NGTs toegepast moeten worden

Groeten,

5.1.2.e

**Van:** 5.1.2.e @minienw.nl>  
**Verzonden:** dinsdag 14 juni 2022 12:41  
**Aan:** 5.1.2.e @mnh.nl; 5.1.2.e @chemistrynl.com;  
 5.1.2.e @radboudumc.nl; 5.1.2.e @innovatievegeneesmiddelen.nl; 5.1.2.e @minez.nl;  
 5.1.2.e @rivm.nl; 5.1.2.e @minvws.nl>; 5.1.2.e @lto.nl;  
 5.1.2.e @minlnv.nl; 5.1.2.e @erasmusmc.nl; 5.1.2.e s@rivm.nl;  
 5.1.2.e tki-agrifood.nl; 5.1.2.e @hollandbio.nl>;  
 5.1.2.e @yahoo.com; 5.1.2.e @erasmusmc.nl; 5.1.2.e @minvws.nl>;  
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 @hollandbio.nl>; 5.1.2.e @lumc.nl;  
 5.1.2.e @biology.leidenuniv.nl; 5.1.2.e @hollandbio.nl>;  
 5.1.2.e @vnocw-mkb.nl; 5.1.2.e @georgemolenkamp.nl; 5.1.2.e @bionext.nl;  
 5.1.2.e @goedewaar.nl



**Onderwerp:** Agenda en stukken t.b.v. Beraadsgroep Biotechnologiebeleid 16 juni 2022

Goedemiddag,

Hierbij de stukken voor het overleg beraadsgroep Biotechnologiebeleid op donderdag a.s. (16 juni, via WebEx).

Ik stuur deze stukken ter informatie aan de gehele groep, ook aan de mensen die zich afgemeld hebben.

Vriendelijke groet,

5.1.2.e .

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## Public consultation on plants produced by certain new genomic techniques

### Introduction

In the last decades, advances in biotechnology have led to the development of new genomic techniques (NGTs), i.e. techniques capable of altering the genetic material of an organism that have emerged or have been developed since 2001, when [Directive 2001/18/EC](#) on the deliberate release of genetically modified organisms (GMOs) into the environment was adopted. The Court of Justice of the EU in 2018 clarified that organisms produced by targeted mutagenesis are GMOs subject to the requirements of the [EU GMO legislation](#). Targeted mutagenesis techniques are new genomic techniques, as opposed to random mutagenesis techniques. Based on the reasoning followed by the Court, the GMO legislation also applies to organisms produced by other NGTs, including cisgenesis techniques.

In November 2019, the Council [requested](#) the Commission to prepare a study on the status of NGTs under EU law, and submit, if appropriate in view of the outcomes of the study, a proposal accompanied by an impact assessment, or otherwise inform of other measures required.

The [study](#), published in April 2021, confirmed that NGTs have developed rapidly in many parts of the world and are expected to continue to do so. There is significant interest both in the EU and globally for plant applications of NGTs, and some of their applications are already on the market outside the EU; this trend is likely to continue.

The study also concluded that plants obtained by NGTs have the potential to contribute to the objectives of the European Green Deal and in particular to the Farm to Fork and Biodiversity Strategies and the United Nations' Sustainable Development Goals (SDGs) for a more resilient and sustainable agri-food system. The study also reported concerns, e.g. on potential safety and environmental impacts, including on biodiversity, coexistence with organic and GM-free agriculture and on consumers' right to information and freedom of choice.

Concerning safety, the European Food Safety Authority (EFSA) has concluded that plants obtained by targeted mutagenesis and cisgenesis can have the same risk profile as plants produced with conventional breeding. EFSA has not yet assessed the safety of targeted mutagenesis and cisgenesis in microorganisms or animals, nor the safety of other techniques.

The study concluded that the GMO legislation has clear implementation challenges and requires contentious legal interpretation to address new techniques and applications, and that there are strong indications that it is not fit for purpose for some NGTs and their products, needing adaptation to scientific and technological progress.

### About you

[Insert language of your contribution]

### I am giving my contribution as

- ☐ Academic/research institution
- ☒ **Business association – werkkerrein sector: Gewasveredeling/zaden + biotech industrie**
- ☐ Company/business organization
- ☐ Consumer organization
- ☐ EU citizen
- ☐ Environmental organization
- ☐ Non-EU citizen
- ☐ NGO

- ☐ Public authority
- ☐ Trade Union
- ☐ Other

First name/surname/e-mail adres/country of origin

5.1.2.e @hollandbio.nl/The Netherlands

The Commission will publish all contributions to this public consultation. You can choose whether you would prefer to have your details published or to remain anonymous when your contribution is published. For the purpose of transparency, the type of respondent (for example, 'business association', 'consumer association', 'EU citizen') country of origin, organisation name and size, and its transparency register number, are always published. Your e-mail address will never be published. Opt in to select the privacy option that best suits you. Privacy options default based on the type of respondent selected. **[indicate if you agree with personal data protection provisions]** I agree

### Instructions and glossary

The questionnaire features three sections: section A focuses on the current situation and the definition of the problem, while section B and C are forward-looking and focus on possible solutions and other relevant aspects.

For the purposes of this questionnaire, references to plants obtained by targeted mutagenesis or cisgenesis include their food and feed products.

This questionnaire is available in all EU languages and you can reply in any EU language. You can pause at any time and continue later. You can download your contribution once you have submitted your answers. Whenever possible, please substantiate your replies with explanations, data and sources of information, practical examples etc.

A short glossary of terminology relevant to this questionnaire follows below:

- **New Genomic Techniques (NGTs):** An umbrella term used to describe a variety of techniques that can alter the genetic material of an organism and that have emerged or have developed since 2001, when the existing GMO legislation was adopted.
- **Mutagenesis:** Creation of mutation(s) in an organism without insertion of foreign genetic material.
- **Classical (or random) Mutagenesis:** An umbrella term used to describe older techniques of mutagenesis that have been used since the 1950s; they involve irradiation or treatment with chemicals in order to produce random mutations, without insertion of foreign genetic material. Organisms obtained with such techniques are GMOs that are exempted from the scope of the EU GMO legislation.
- **Targeted Mutagenesis:** An umbrella term used to describe newer techniques of mutagenesis that induce mutation(s) in selected target locations of the genome without insertion of foreign genetic material.
- **Cisgenesis:** Insertion of foreign genetic material into a recipient organism from a donor that is sexually compatible (crossable).
- **Transgenesis:** Insertion of foreign genetic material into a recipient organism from a donor organism that is sexually incompatible.
- **Trait:** For the purposes of this document, a trait is a specific characteristic resulting from the modification of a plant by targeted mutagenesis and cisgenesis.

### A. Regulating plant produced by targeted mutagenesis and cisgenesis - current situation

The [EU GMO legislation](#) applicable to plants includes Directive 2001/18/EC on the deliberate release into the environment of GMOs, Regulation (EC) No 1829/2003 on GM food and feed and Regulation (EC) No 1831/2003 concerning the traceability and labelling of GMOs and their food and feed products. The 2010- 2011 [evaluations](#) of the GMO legislation and the 2021 Commission study on NGTs have indicated that, as regards plants obtained by some NGTs and their products, the current legislation is no longer fit for purpose and needs adaptation to scientific and technological progress. On the basis of these evaluations and the study, the [inception impact assessment](#) has identified the following problems associated with the application of the current legislation to plants produced by targeted mutagenesis and cisgenesis:

- Legal uncertainties in Directive 2001/18/EC (and other legislation based on it) have been intensified by developments in biotechnology, with unclear or undefined terms and notions;
- Current regulatory oversight and requirements are not adapted to the resulting diverse risk profiles, and in some cases can be disproportionate or inadequate;
- The GMO legislation includes authorisation, traceability and labelling requirements that raise implementation and enforcement challenges;
- The current legislative framework does not take into account whether products have the potential to contribute to sustainability.

These problems could impact operators across the agri-food system, including in agricultural biotechnology innovation and research, non-food/feed bio-based and biotechnology industries, operators in EU trade partners, organic and GM-free operators, EU and national authorities, and EU citizens and consumer organisations. The issues are of interest to a broad spectrum of stakeholders, including NGOs active in the environmental protection, agri-food system, biotechnology and consumer protection areas.

**1. With regard to the problems above, what is your view of the existing provisions of the GMO legislation for plants produced by targeted mutagenesis and cisgenesis?**

- ~~a. They are adequate~~
- b. They are not adequate**
- ~~c. No opinion/I do not know~~

**1.2 This is because**

- ~~— The GMO legislation is not sufficiently clear for these products~~
- **The GMO legislation includes authorization, traceability and labelling requirements that are not appropriate for these plant products.**
- **The risk assessment approach of the GMO legislation cannot factor in the diverse risk profiles of plants obtained by targeted mutagenesis or cisgenesis**
- ~~- The GMO legislation does not take into account whether products have the potential to contribute to sustainability~~
- Other reasons [if so please specify, 500 characters maximum]

**Instead of discriminating against the specific technique with which a product is made, legislation should rather focus on the characteristics of the final product, its application as well as sensible practices on the usage of products to be balanced and future-proof. For a cohesive approach, microorganisms should be considered in parallel to the ongoing policy action for plants.**

**2. If plants obtained by targeted mutagenesis and cisgenesis continue to be regulated under the current GMO framework, do you expect short, medium or long term consequences for you/your activity/sector?**

- a. Yes**
- ~~b. No~~
- ~~c. Not applicable~~
- ~~d. No opinion/I do not know~~

*Please specify positive consequences [800 characters maximum]*

None

Please specify negative consequences [800 characters maximum]

- Decreased chance to reach EU Green Deal, Farm to Fork and UN Sustainable Development goals due to higher development time, costs and lowered success rate in R&D stage.
- Politically, the current deadlock will prevail.
- No level playing field for innovation globally as other regions are moving forward (examples provided at question 18).
- No access to NGTs for startups, scaleups and innovative SMEs to commercialise both plants and application via microorganisms.
- Increased complexity of (international) trade due to other regulatory situation in the rest of the world and detection issues.

### Regulating plants produced by targeted mutagenesis and cisgenesis - the future

The envisaged policy action on plants obtained from targeted mutagenesis and cisgenesis will aim at an appropriate regulatory oversight for the concerned plant products, ensuring a high level of protection of human and animal health and the environment, and enabling innovation and the contribution of plants developed by safe NGTs to the objectives of the European Green Deal and the Farm to Fork Strategy. This section aims at identifying potential impacts and possible ways to address the problems acknowledged in the inception impact assessment and mentioned in section A above. Your views will assist us in defining whether the current situation should be changed and the possible way forward.

### RISK ASSESSMENT

In the current GMO legislation, risk assessment requirements are to a large extent the same for all GMOs. However, EFSA has concluded that plants produced by targeted mutagenesis and cisgenesis generally pose lower risks than plants obtained with transgenesis (1). EFSA has also concluded that, in some cases, plants produced by targeted mutagenesis and cisgenesis do not pose new hazards compared to plants produced with conventional, non-GM breeding techniques, or compared to classical mutagenesis techniques, which are considered as GMOs outside the scope of the legislation, and not subject to risk assessment. Finally, EFSA has concluded that off-target mutations potentially induced by targeted mutagenesis are of the same type as, and fewer than, those mutations in conventional breeding.

### 3. Currently, plants produced by targeted mutagenesis and cisgenesis are risk assessed as any other GMOs. What is your view on their risk assessment?

- ~~a. Plants produced by targeted mutagenesis and cisgenesis need to be risk assessed using the current GMO legislation requirements.~~
- ~~b. Plants produced by targeted mutagenesis and cisgenesis need to be assessed using requirements adapted to their characteristics and risk profile.~~
- ~~c. Plants produced by targeted mutagenesis and cisgenesis do not need to be risk assessed when they could have been produced through conventional breeding or classical mutagenesis.~~
- d. Plants produced by targeted mutagenesis or cisgenesis do not need to be risk assessed.
- ~~e. No opinion/I do not know.~~
- ~~f. Other~~

### 3.2 In your view, which criteria should be used to determine whether a plant produced by targeted mutagenesis or cisgenesis could have been produced via conventional breeding or classical mutagenesis? [500 characters maximum]

Instead of discriminating against the specific technique with which a product is made, legislation should rather focus on the characteristics of the final product, its application as well as sensible practices on the usage of products to be balanced and future-proof. Same criteria should be

applied for products obtained via classical mutagenesis and conventional breeding (currently not risk assessed). This is in line with the statement by the EC's Group of Chief Scientific Advisors (<https://ap.lc/tABbn>)

4. **Is there any other aspect you would like to mention, for example on the potential economic, social, environmental or other impacts of the above, or would you like to justify/elaborate on your replies?**

[Insert response, 1500 characters maximum]

**Monopoly annulled:** NGTs become equally available to research institutes, SMEs and multinationals. Currently, market access of NGT products is highly insecure and therefore unaffordable for anyone but the largest agrotechnology companies.

**Benefit on biodiversity:** Futureproof legislation frees up the technology for more innovative applications and greater seed variety, in comparison to focus on big profitable crops via the current GMO legislation..

**EU competitiveness:** The Netherlands is one of the world's largest agricultural producers, highly advanced in crop knowledge and biotechnology. Many ideas however do not get launched, or at least not in the EU, while outside EU global steps are being taken to reduce the strict legislation on NGTs. Examples provided at answer question 18.

**Speeding up innovation:** R&D takes 4-6 years compared to 8-10 years with conventional methods (<https://ap.lc/DRGzS>).

**Environmental:** more robust varieties, resilient to climate change, using less fertilizer and plant protection products.

**Food security:** Higher yield, while using less soil, and nutrients and optimized for local climates.

**Free choice:** Current global challenges require a bigger choice of seeds and crops for both big and small farmers.

**Safety:** for human, animal and environmental health remains undisputed. NGTs can be applied as safe as, or even safer than, traditional non-regulated techniques. They should be treated at least as such to be in balance with the other policy objectives.

## SUSTAINABILITY

The Commission [NGT study](#) has concluded that plants obtained by NGTs have the potential to contribute to the objectives of the European Green Deal and in particular to the Farm to Fork and Biodiversity Strategies and the United Nations' SDGs for a more resilient and sustainable agri-food system. Examples of potential benefits include plants more resistant to pests, diseases and the effects of climate change (e.g. notably increasing severity and frequency of extreme heatwaves, droughts and rainstorms) or environmental conditions in general, or requiring less natural resources and fertilisers. NGTs could also improve the nutrient content of plants for healthier diets, or reduce the content of harmful substances such as toxins and allergens.

5. **Should the potential contribution to sustainability of the modified trait of a product be taken into account in new legislation on plants produced by targeted mutagenesis or cisgenesis?**

- a. ☒ There is no need for specific regulatory provisions on sustainability in this initiative.
- b. ☐ Specific regulatory provisions for sustainability should be included in this initiative.
- c. ☐ No opinion/I do not know

*Please explain why [500 characters maximum]*

Similar to conventional breeding and classical mutagenesis the usage of NGTs can contribute to sustainability. By also allowing the usage of NGTs this will open a wider scale of technologies to utilise. Sustainability should not create an additional hurdle during the product approval process or applied as an additional requirement to the usage of NGTs only. In case sustainability will be part of the (market) approval process, it should be applied to all products.

6. **In your view, which of the following traits are most relevant for contributing to sustainability?** [On a five-point scale from strongly agree to strongly disagree]
- a. Tolerance/resistance to biotic stresses (e.g. plant disease caused by nematodes, fungi, bacteria, viruses, pests)
  - b. Tolerance/resistance to abiotic stresses (e.g. to climate change or environmental conditions in general, such as drought, heat, cold, salt)
  - c. Better use of resources (such as water, nitrogen)
  - d. Tolerance/resistance to plant protection products such as herbicides or insecticides
  - e. Better yield or other agronomic characteristics (e.g. yield stability, more or larger seeds or fruits, greater height, better shape or flowering time, better breeding characteristics)
  - f. Better storage performance (e.g. under harvest, transport or storage conditions, longer shelf-life, non-browning and fewer black spots)
  - g. Better composition (e.g. higher or better content of nutrients such as fats, proteins, vitamin, fibres, lower content of toxic substances and allergens)
  - h. Other quality-related characteristics (e.g. better colour, flavour)
  - i. Production of substances of interest for the food and non-food industry

Strongly agree to all

7. **In your view, which of the following would be the best incentives to encourage the development of plant products of targeted mutagenesis or cisgenesis with traits contributing to sustainability?** [on a five-point scale from strongly agree to strongly disagree]
- a. Regulatory and scientific advice before and during the approval procedure (strongly agree)
  - b. Measures to facilitate the approval process (waiving of fees, faster procedures) (strongly agree)
  - c. Allowing sustainability-related claims to appear on the final product (strongly agree)

**Please specify any other incentives you would like to propose**

[500 characters maximum]

Financial incentives for sustainable innovations and stop subsidies for non-sustainable applications.

Regarding above incentives they should not distinguish between targeted mutagenesis or cisgenesis and other forms of technologies.

Incentives for the use of NGTs in alternative forms of agriculture, e.g. cultured meat, precision fermentation and better usage of waste streams.

8. **Do you think information about the sustainability contribution of a modified trait of a plant produced by targeted mutagenesis or cisgenesis should be made available to the consumer?**
- a. ~~Yes~~
  - b. No
  - c. ~~No opinion/I do not know~~

~~If yes, how should the information be provided?~~

- a. ~~physical label on the final product~~
- b. ~~digital label accessible through the final product (e.g. website, QR code)~~
- c. ~~Via information available elsewhere (e.g. public database/register)~~
- d. ~~No opinion/I don't know~~

9. **Is there any other aspect that you would like to mention, for example on the potential economic, social, environmental or other impacts of the above, or would you like to justify/elaborate on your replies?**

[1500 characters maximum]

Full transparency via labelling to consumers can only be achieved when including all, also traditional, methods of breeding and genetic modification.

A science based clear definition of sustainability is urgently needed, though often overlooked.

Impact on sustainability of all mentioned traits at question 6 have the potential to be very high and will depend on other factors as well and therefore complex to rank in any order. For example, a crop with higher content of vitamin A might be relevant to the Philippines, however less relevant to consumers in the EU.

#### INFORMATION FOR OPERATORS AND CONSUMERS

Under the GMO legislation, GMOs are traced (documentation with declaration of presence of GMO, GMO unique identifier for all transactions along the food chain, obligation to keep information for each transaction for a number of years) and labelled as such. The GMO legislation includes an obligation for applicants for a GMO authorisation to provide a quantitative detection method that is specific to the product, i.e. it can both detect it and differentiate it from other products. In some cases of plants produced by targeted mutagenesis or cisgenesis, analytical methods might be able to detect the product but might not be able to differentiate it from similar plants produced by conventional, non-GM breeding techniques or by classical mutagenesis. This means that in these cases analytical methods might be able to detect the presence of a modified product, without being able to prove that the change was the result of a technique regulated under the GMO legislation.

10. **When analytical methods are not available or reliable, effective traceability of plants obtained by targeted mutagenesis or cisgenesis, and of their food and feed products, can be ensured via:**
- ~~a. Documentation transmitted through the chain of operators~~
  - ~~b. Public databases/registries (zelfde als nu wordt gebruikt? Plantenregister)~~
  - ~~c. Digital solutions, e.g. block chain~~
  - ~~d. Other means~~
  - e. No opinion/I do not know
11. **When reliable analytical methods that can both detect and differentiate a product cannot be provided, operators wishing to introduce plants produced by targeted mutagenesis or cisgenesis in the market should:**
- a. Not be asked at all to provide an analytical method that can both detect and differentiate their product
  - ~~b. Not be asked to provide an analytical method that can both detect and differentiate their product, if they can justify that this would be impossible~~
  - ~~c. Be asked to provide a detection method, but without the need to differentiate, if they can justify that the latter would be impossible~~
  - ~~d. Not be allowed to place the product in question on the market~~
  - ~~e. No opinion/I do not know~~
12. **Transparency of operators and consumers, on plants produced by targeted mutagenesis or cisgenesis:**
- ~~a. Can be achieved via a physical label on the final product~~
  - ~~b. Can be achieved via a digital label accessible through the final product (e.g. link to a website, QR code)~~
  - ~~c. Can be achieved via information available elsewhere (e.g. a website, public database/register)~~



- ~~d. Is not necessary for plants produced by targeted mutagenesis and cisgenesis, when they could have been produced through conventional plant breeding or classical mutagenesis~~
- e. Is not necessary for any plant produced by targeted mutagenesis and cisgenesis
- ~~f. No opinion/I do not know~~

*Note that plants produced with conventional, non-GM breeding techniques, or with classical mutagenesis (GMOs exempted from the scope of the legislation), do not need to be traced or labelled as GMOs; other legislation provisions on traceability and labelling apply, e.g. under EU food legislation.*

**13. Is there any other aspect you would like to mention, for example on the potential economic, social, environmental or other impacts of the above, or would you like to justify/elaborate on your replies?**

[1500 characters maximum]

Tracing and labelling products produced with targeted mutagenesis or cisgenesis will create an unlevel playing field. As above note already mentions, plants produced with classical mutagenesis do not need to be traced or labelled as GMOs and are even allowed to claim “organic” and/or “no GMO”.

Any legal requirements should be proportionate and not impose an additional hurdle for innovative startups, scaleups and SMEs.

Full transparency via labelling to consumers can only be achieved when including all, also traditional, methods of breeding and genetic modification.

**B. Other relevant aspects of a new framework**

The following questions address other aspects, not covered in the previous sections, that are relevant to a new framework.

**14. Which of the following measures do you think would be necessary for future-proof legislation on plants produced by targeted mutagenesis or cisgenesis?** [On a five-point scale from strongly agree to strongly disagree]

- a. Improving legal clarity in the legislation (agree)
- b. Putting in place mechanisms that facilitate easy adaptation to scientific progress (strongly agree)
- c. Risk assessment that takes into account the characteristics and risk profile of a final product (strongly agree)

**Please specify any other measures you would like to propose.**

[500 characters maximum]

Legal clarity via future legislation is an obvious hygiene factor. A future proof legislation can only be obtained via a thorough modernization of the GMO legislation, via extending the scope to include microorganisms in addition to plants and including all genomic techniques, including transgenesis.

**15. Which of the various measures outlined in section B would be most relevant to co-existence with the existing agricultural practices (e.g. conventional, organic)? Are any other measures necessary?**

[1500 characters maximum]

By changing legislation of plants produced by targeted mutagenesis and cisgenesis we won't create a split between GMO and non-GMO. It will however result in an artificial separation of regulated versus non-regulated GMOs. Current organic crops are mostly obtained via classical mutagenesis. How could coexistence of technologies become reality (or even useful?) if it is not possible to distinguish which technology is used to obtain the product? The organic sector should understand

and accept the potential of New Genomic Techniques to develop and stimulate sustainable agriculture.

- 16. Do you think any regulatory measures should be included in new legislation to facilitate access to targeted mutagenesis or cisgenesis technologies/plant genetic resources? Note that this initiative on plants produced by targeted mutagenesis or cisgenesis does not cover intellectual property rules (e.g. plant variety rights, biotechnology patents)**  
[1500 characters maximum]

Access to technologies and resources should not be part of this legislation. This needs to be taken care in the most fitting existing legislation on access and genetic resources. By lowering the boundary of utilizing targeted mutagenesis or cisgenesis and plant resources it will allow startups, scaleups, SME's as well as multinationals to develop product innovations, hereby increasing the number of products and crops, contributing to biodiversity.

- 17. Do you think any regulatory measures should be included in new legislation to facilitate the uptake of these technologies by small and medium-sized enterprises?**  
[1500 characters maximum]

Any regulation or addition to legislation should be focusing on stimulating innovations by startups, scaleups and SMEs via a lean and mean set of rules to follow.

Current GMO regulation has created a high boundary, impossible for startups, scaleups and SMEs to adhere to as the timeline is too long (and therefore expensive) and uncertain. Also bigger companies rarely want to take the risk or invest the time and resources to undergo this process. To illustrate, the current cost and time of the regulatory process for obtaining an EU import authorization is estimated to take 6 years on average and 11-16.7 million euros. The process to obtain GMO cultivation authorization in EU is even longer.

(<https://www.embopress.org/doi/full/10.15252/embr.202154529>)

- 18. You can raise any additional points or provide further information and evidence to support your views using the field below:**  
[1500 characters maximum]

In order to develop future proof legislation that is fit for purpose with regards to NGTs, it is crucial that we break the current deadlock proponents and opponents are in when it comes to genetic modification. Currently, we have a scientific assessment by EFSA that is followed by a completely politicized debate by national authorities that almost never leads to a conclusive vote – with the buck in the end being passed to the European Commission. To end this status quo, we need a repoliticization of the debate up front on the fundamentals of where the European Union wants to go with genetic modification and NGTs. That fundamental debate should in turn lead to a conclusion on how to build a future proof and fit for purpose system.

(<https://journals.sagepub.com/doi/10.1177/01622439221097206>)

Hereby examples of global steps outside of EU to reduce strict regulation NGT:

- In UK the “Genetic Technology Bill” has recently been submitted (<https://ap.lc/TzIkn>)
- In Japan gene edited products already are on the market (<https://ap.lc/NAGx6>)
- New guidelines in China speeds stimulates research and commercialisation of gene edited crops <https://www.nature.com/articles/d41586-022-00395-x>
- In the US no additional regulation on plants that otherwise could have been developed through conventional breeding is imposed via the SECURE biotechnology Regulations (<https://www.nature.com/articles/nbt0616-582>) plus link to CRISPR crops being developed in the US: <https://crispr-gene-editing-regs-tracker.geneticliteracyproject.org/united-states-crops-food/>

If you wish to provide additional information which complements your responses, you can upload a document here. The maximum file size is 1 MB. Provision of a document is optional. Only files of the type pdf,txt,doc,docx,odt,rtf are allowed.

Possibly add all links to references in separate attachment.

#### Useful links

- New Genomic Techniques ([https://ec.europa.eu/food/plants/genetically-modified-organisms/new-techniquesbiotechnology\\_en](https://ec.europa.eu/food/plants/genetically-modified-organisms/new-techniquesbiotechnology_en))
- Factsheet ([https://ec.europa.eu/food/document/download/bc1e9b4a-c3fc-45e9-8d0e-72653984ef1f\\_en?filename=sc\\_modif-genet\\_pub-cons-factsheet.pdf](https://ec.europa.eu/food/document/download/bc1e9b4a-c3fc-45e9-8d0e-72653984ef1f_en?filename=sc_modif-genet_pub-cons-factsheet.pdf))

Contact **5.1.2.e** @ec.europa.eu

**Van:** 5.1.2.e  
**Aan:** 5.1.2.e  
**Cc:** 5.1.2.e @minienw.nl; 5.1.2.e @hollandbio.nl; 5.1.2.e @hollandbio.nl  
**Onderwerp:** HollandBio/Plantum webinar slides  
**Datum:** dinsdag 28 juni 2022 14:10:05  
**Bijlagen:** New Genomic Techniques webinar intro slides 5 juli 2022\_MvV pptx

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Let op, in deze e-mail verzonden door 5.1.2.e @plantum.nl, zijn één of meerdere verdachte links gevonden die uit voorzorg aangepast zijn, zodat deze opnieuw gecontroleerd worden bij het aanklikken. Links kunnen misbruikt worden om malware op uw systeem te installeren. Klik alleen op nog aanwezige links als de e-mail afkomstig is van een door u vertrouwde afzender.

**Indien dit niet het geval is dient u deze e-mail direct te verwijderen.**

DICTU Servicedesk

Dear all,

Thank you again for being willing to present at our online event for the (Dutch) retail sector on NGTs. Rianne and I prepared some slides for the introduction of the webinar, which also includes some poll-questions for the audience to get a feeling of how much they already (think they) know about the topic. We propose to use Zoom for the webinar, we hope this is okay for you.

If you have any slides yourselves, could you share it with Rianne and myself so we can act as back-up in case anything goes wrong during your screenshare? Some days before the event we will update you on the number of participants and an overview of where these people work. If you have any questions, please don't hesitate to contact me.

Best regards,

5.1.2.e  
 Policy advisor  
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 website: [http://secure-web.cisco.com/1z0hI8P9pDmgqYuCFhAjXpYGBrm6-jVU-cvQbHJGge2J4Zyc\\_HkX6xbkYs7m8WHdlB7AGa6teVeDjfrauD2v--eLD2GPp64irNHM9-d\\_v6nmUQ19v0aD6boRUva7RY4naWq0l54F7GciORvFRDlcbobFayYSMnFlfWAQ4K0UTz7JN9rYigafSt-B\\_qLjQRnGVhIMVq2RXCHSvAPI3Veb2gYP-H0CuJWWNMNxFRLwX6gz2wrcLwfGxYOIL9TcfzGS/http%3A%2F%2Fwww.plantum.nl](http://secure-web.cisco.com/1z0hI8P9pDmgqYuCFhAjXpYGBrm6-jVU-cvQbHJGge2J4Zyc_HkX6xbkYs7m8WHdlB7AGa6teVeDjfrauD2v--eLD2GPp64irNHM9-d_v6nmUQ19v0aD6boRUva7RY4naWq0l54F7GciORvFRDlcbobFayYSMnFlfWAQ4K0UTz7JN9rYigafSt-B_qLjQRnGVhIMVq2RXCHSvAPI3Veb2gYP-H0CuJWWNMNxFRLwX6gz2wrcLwfGxYOIL9TcfzGS/http%3A%2F%2Fwww.plantum.nl) | [www.plant-kracht.nl](http://www.plant-kracht.nl)  
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# New Genomic Techniques

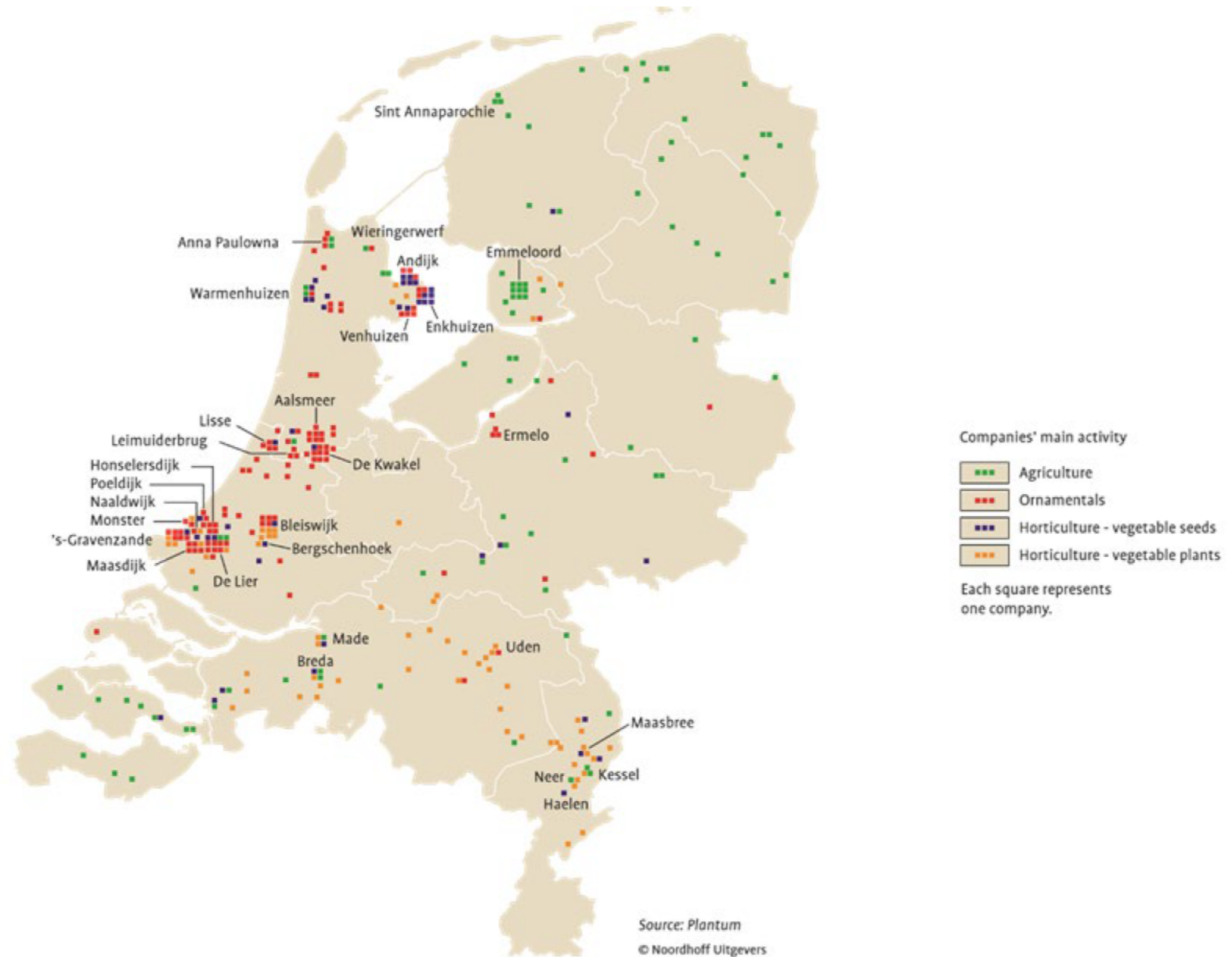
Information session - Webinar





When	What	Who
15:00 – 15:20	Welcome and intro	5.1.2.e (Plantum) and 5.1.2.e (HollandBIO)
15:20 – 15:35	A look at New Genomic Techniques: What are they and why should we care?	5.1.2.e (WUR and Genesprout Initiative)
15:35 – 15:50	Government perspective NL and EU	5.1.2.e (Ministry Environment) and 5.1.2.e (Ministry Agriculture)
15:50 - END	Discussion	All

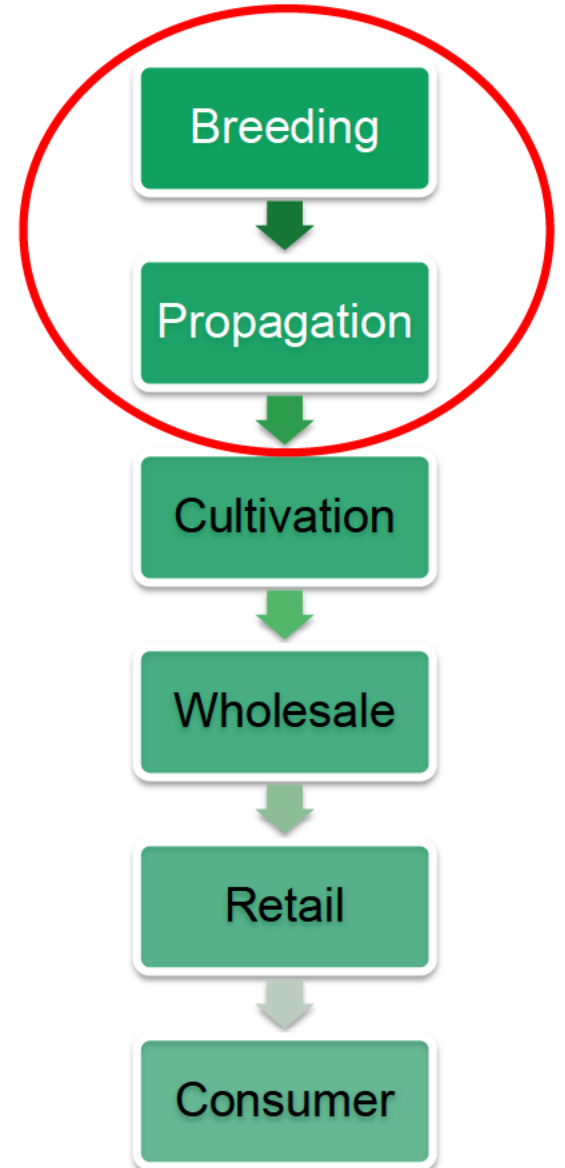
# The Dutch association for breeding, tissue culture, production and trade of seeds and young plants





## Plantum stands for

- Influential voice and professional partner on behalf of approximately 350 members
- Shared economic interest with a turnover in the Netherlands of around 2.7 billion Euros
- Strengthen international competitiveness of the industry





- Industry association in The Hague
- Dutch Biotech sector
- >260 members and 12 employees

Selection of our agri, food and biobased biotech members:





# BIOTECH MAKES LIFE BETTER

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We draw inspiration from nature's potential.

Our innovations help people, animals and the planet thrive.

We make this happen – together.

We are HollandBIO. The advocacy group for the Dutch biotech sector.

## Objective of today

- Share with you information on what New Genomic Techniques are and why this is something you should be aware about.
- Deliver insight in ongoing legislation procedure and perspective of our own government.
- Open interaction, discussion with audience and understanding your needs and questions.

## Question 1

- How much do you know about Genetically Modified Food?
  - I have good knowledge
  - I have some knowledge
  - I have only heard of this
  - I have never heard of this

## Question 2

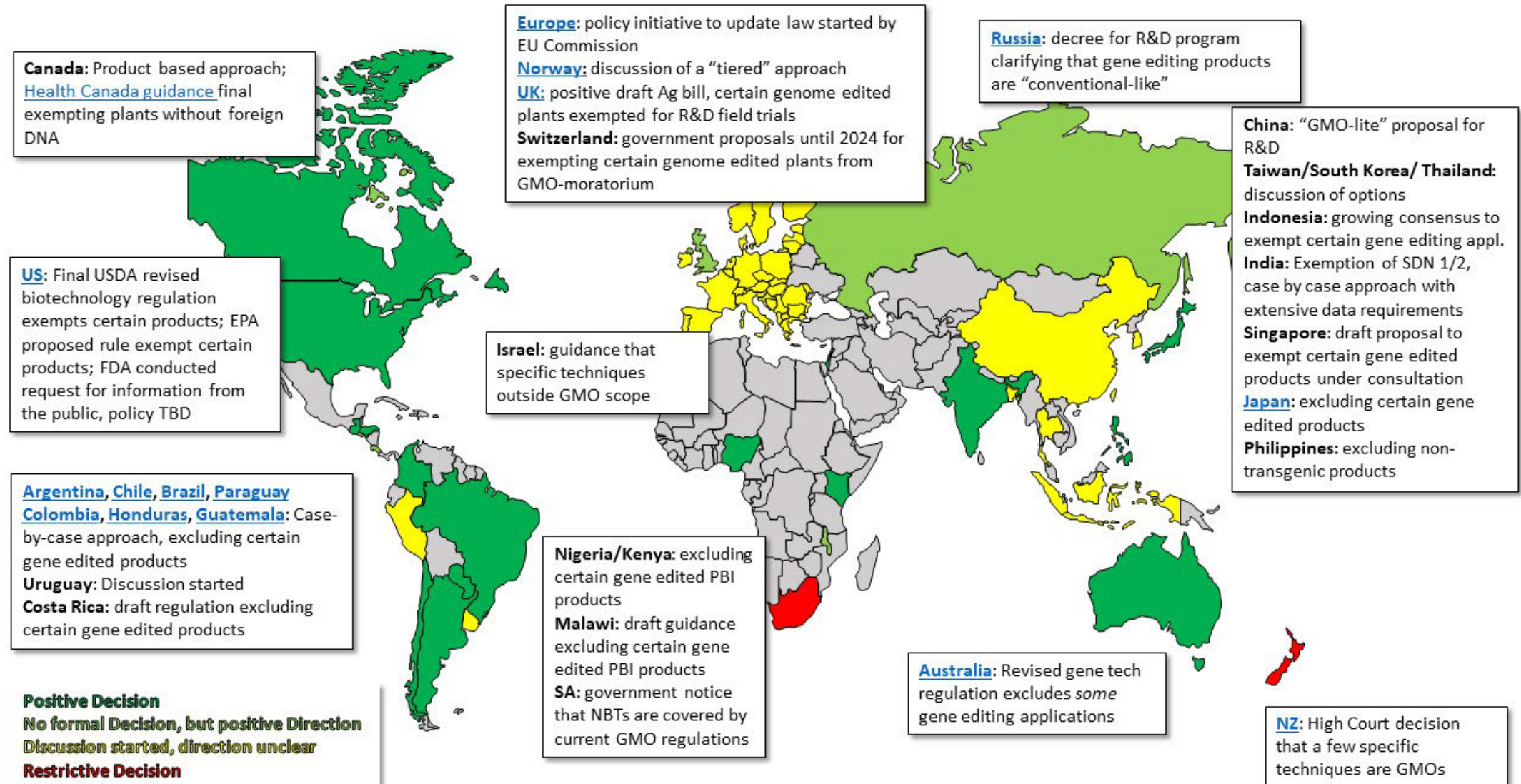
- How much do you know about New Genomic Techniques?
  - I have good knowledge
  - I have some knowledge
  - I have only heard of this
  - I have never heard of this

## Question 3

- Where are products obtained via NGTs considered as GMO?
  - EU
  - US
  - Argentina
  - Japan
  - Australia
  - All of the above

# Answer to question 3

## Policy developments around the world (06/2022)

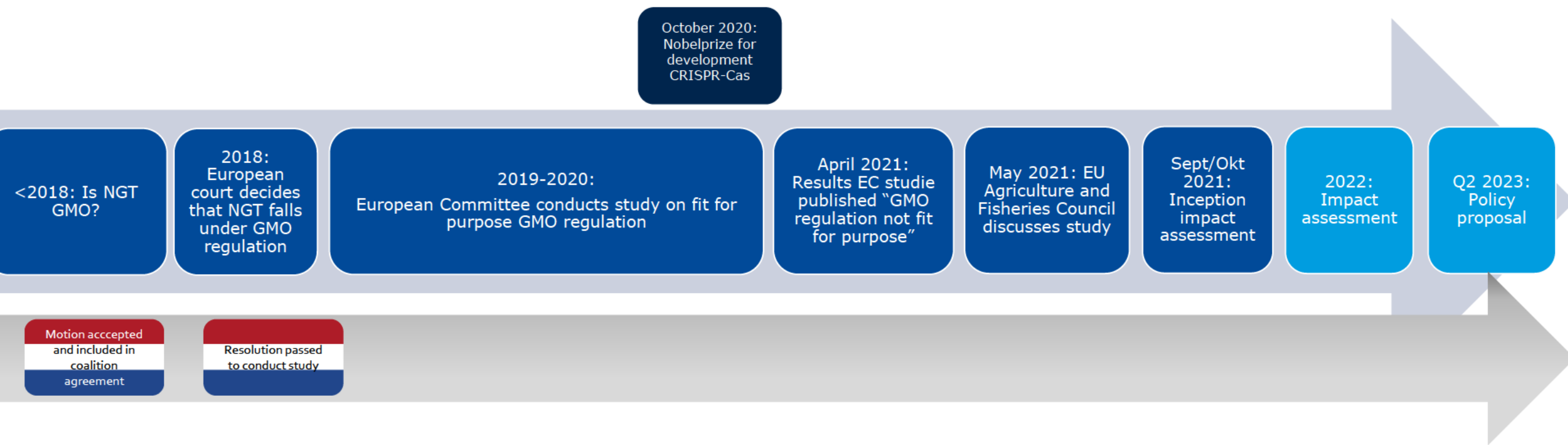


## Question 4.

- How should transparency on plants produced by NGTs be provided to operators and consumers?
  - Via a physical label on the final product
  - Via a digital label accessible through the final product (e.g. link to website, QR code)
  - Via information elsewhere (e.g. website, public database/register)
  - This is not necessary
  - I do not know



# Recent development New Genomic Techniques in EU



**Slides sprekers**

## Question 4 (again)

- How should transparency on plants produced by NGTs be provided to operators and consumers?
  - Via a physical label on the final product
  - Via a digital label accessible through the final product (e.g. link to website, QR code)
  - Via information elsewhere (e.g. website, public database/register)
  - This is not necessary
  - I do not know

# Targeted survey for the impact assessment of new legislation on New Genomic Techniques

This is a targeted survey for the Impact Assessment of new legislation on New Genomic Techniques. The aim of this survey is to gather your input on the various impacts of elements for future policy options for the legislation on plants produced using genomic techniques (NGT). This survey is part of the "Study supporting the impact assessment of legislation for plants produced by certain new genomic techniques" commissioned by the European Commission (DG SANTE) to an independent consortium of policy research bureaux led by Technopolis Group

Dear {TOKEN:FIRSTNAME} {TOKEN:LASTNAME},

Welcome to this survey to gather your input on the various impacts of elements for future policy options for the legislation on plants produced using certain new genomic techniques (NGTs). This survey is part of the "Study supporting the impact assessment of legislation for plants produced by certain new genomic techniques" commissioned by the European Commission (DG SANTE) to an independent consortium led by Technopolis Group.

In this survey we present various changes that could be envisaged regulating specifically plants developed through targeted mutagenesis (TM) and cisgenesis (CG). Thus, from the many techniques that NGTs cover, any reference to NGTs in this survey is understood as TM and CG only. For each potential element for policy options, we ask you to assess their potential positive or negative specific socio-economic, health and environmental impacts in the period 2030-2035. In addition, we ask you to provide information on costs and benefits

Completing the survey will take 45-90 minutes of your time, depending on your level of expertise. The survey must be completed online, but a printable copy (/upload/surveys/959299/files/PrintableSurveyTest.pdf) of all questions can be downloaded as PDF (/upload/surveys/959299/files/PrintableSurveyTest.pdf) prior to providing your response.

This survey is different from the open public consultation. It gathers in a more structured and detailed manner information on specific impacts for various scenarios for 2030-2035 among a selected group of experts and stakeholders

Please read and accept our privacy statement below before starting the survey.

There are 97 questions in this survey.

## Identification

### Introduction

The questions in this section will be used to better understand the background of respondents to this survey

#### Do you fill-out this survey as an individual or on behalf of your organisation? \*

❶ Choose one of the following answers

Please choose **only one** of the following:

- ☐ Individual
- ☐ Organisation

#### In which Member State are you (professionally) / is your organisation based? \*

❶ Choose one of the following answers

Please choose **only one** of the following:

- ☐ Austria
- ☐ Belgium
- ☐ Bulgaria
- ☐ Croatia
- ☐ Cyprus
- ☐ Czech Republic
- ☐ Denmark
- ☐ Estonia
- ☐ Finland
- ☐ France
- ☐ Germany
- ☐ Greece
- ☐ Hungary
- ☐ Ireland
- ☐ Italy
- ☐ Latvia
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Malta
- ☐ Netherlands
- ☐ Poland
- ☐ Portugal
- ☐ Romania
- ☐ Slovakia
- ☐ Slovenia
- ☐ Spain
- ☐ Sweden
- ☐ Other

**Which category characterises your organisation / the organisation you are affiliated with best? \***

① Choose one of the following answers

Please choose **only one** of the following:

- ☐ Academic/research organisation
- ☐ Non-governmental organisation (NGO)
- ☐ Public authority
- ☐ Business association
- ☐ Large company/business (>250 employees)
- ☐ Individual expert
- ☐ Small and medium-sized enterprise (SME) (up to 250 employees)
- ☐ Consumer organisation
- ☐ Trade union
- ☐ Other:

**What is your field of activity or sector? \***

① Check all that apply

Please choose **all** that apply:

- ☐ Plant products / fertilisers
- ☐ Plant breeding / seeds
- ☐ Feed
- ☐ Trade
- ☐ Farming
- ☐ Organic sector
- ☐ GM-free sector
- ☐ Food processing / manufacturing
- ☐ Food retail / services
- ☐ Green biotechnology / bio-based industry
- ☐ Ornamental plants
- ☐ Forestry
- ☐ Other:

**Where would you position yourself in the value chain? \***

① Check all that apply

Please choose **all** that apply:

- ☐ Agro-suppliers
- ☐ Breeders
- ☐ Farmers
- ☐ Traders
- ☐ Processors
- ☐ Distributors
- ☐ Retailers
- ☐ Consumer associations
- ☐ Ministry
- ☐ Authorising authority
- ☐ Other:

**In the wider area of the agricultural market, to what extent do you consider yourself knowledgeable on the following impact areas? \***

Please choose the appropriate response for each item:

	Not at all	To some extent	To a moderate extent	To a great extent	I don't know
Economic impacts (e.g., costs, income)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic impacts (e.g. competitiveness, food security)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact of coexistence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health, consumer and social impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consumer/operator information impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental impacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts on regulatory and/or enforcement costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**If we look ahead at 2030-2035 and future markets of NGTs, at what level of the agricultural market are you able to assess future impacts? \***

① Choose one of the following answers

Please choose only one of the following:

- ☐ For the overall agricultural market in the EU
- ☐ For the overall agricultural market in the member state that you're based in
- ☐ For a specific crop / plant market in the EU
- ☐ For none of these levels

**For which crop/plant market would you be able to assess future impacts under different scenarios for 2030-2035?** If you work with multiple crops, please choose the crop which is most important for your organisation.

N.B. these categories are based on the official Eurostat categories used for the Annual crop statistics Handbook ([https://ec.europa.eu/eurostat/cache/metadata/Annexes/apro\\_cp\\_esms\\_an1.pdf](https://ec.europa.eu/eurostat/cache/metadata/Annexes/apro_cp_esms_an1.pdf)). \*

Only answer this question if the following conditions are met:

((MarketLevel NACK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59740) == "SEU"))

❗ Choose one of the following answers

Please choose **only one** of the following:

- ☐ C0000 Cereals for the production of grain (including seed)
- ☐ C1000 Cereals (excluding rice) for the production of grain (including seed)
- ☐ C2000 Rice
- ☐ P0000 Dry pulses and protein crops for the production of grain (including seed and mixture)
- ☐ R0000 Root crops
- ☐ R1000 Potatoes (including seed potatoes)
- ☐ R2000 Sugar beet (excluding seed)
- ☐ R9000 Other root crops
- ☐ I0000 Industrial crops
- ☐ I1000 Oilseeds
- ☐ I2000 Fibre crops
- ☐ I3000 Tobacco
- ☐ I4000 Hops
- ☐ I5000 Abarcelonatic, medicinal and culinary plants
- ☐ I6000 Energy crops
- ☐ I9000 Other industrial crops
- ☐ G0000 Plants harvested green from arable land
- ☐ G1000 Temporary grasses and grazings
- ☐ G2000 Leguminous plants harvested green
- ☐ G3000 Green maize
- ☐ V0000 Fresh vegetables (including melons)
- ☐ V1000 Brassicas
- ☐ V2000 Leafy and stalked vegetables (excluding brassicas)
- ☐ V3000 Vegetables cultivated for fruit (including melons)
- ☐ V4000 Root, tuber and bulb vegetables
- ☐ V5000 Fresh pulses
- ☐ V9000 Other fresh vegetables
- ☐ S0000 Strawberries
- ☐ U1000 Mushrooms
- ☐ H0000 Permanent crops for human consumption
- ☐ F0000 Fruits, berries and nuts (excluding citrus fruits, grapes and strawberries)
- ☐ F1000 Fruits from temperate climate zones
- ☐ F2000 Fruits from subtropical and tropical climate zones
- ☐ F3000 Berries (excluding strawberries)
- ☐ F4000 Nuts
- ☐ T1000 Oranges
- ☐ T2000 Small citrus fruits
- ☐ T3000 Lemons and acid limes
- ☐ T4000 Pomelos and grapefruit
- ☐ T9000 Other citrus fruits
- ☐ W1000 Grapes
- ☐ O1000 Olives
- ☐ H9000 Other permanent crops for human consumption
- ☐ None of these markets

**If you selected a primary crop in the previous question, please indicate any other major crops in your portfolio below (if any)?** You can select multiple options.

N.B. these categories are based on the official Eurostat categories used for the Annual crop statistics Handbook ([https://ec.europa.eu/eurostat/cache/metadata/Annexes/apro\\_cp\\_esms\\_an1.pdf](https://ec.europa.eu/eurostat/cache/metadata/Annexes/apro_cp_esms_an1.pdf)).

Only answer this question if the following conditions are met:

(! is\_empty(CropCategory NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59741)))

🔍 Check all that apply

Please choose **all** that apply:

- ☐ C0000 Cereals for the production of grain (including seed)
- ☐ C1000 Cereals (excluding rice) for the production of grain (including seed)
- ☐ C2000 Rice
- ☐ P0000 Dry pulses and protein crops for the production of grain (including seed and mixture)
- ☐ R0000 Root crops
- ☐ R1000 Potatoes (including seed potatoes)
- ☐ R2000 Sugar beet (excluding seed)
- ☐ R9000 Other root crops
- ☐ I0000 Industrial crops
- ☐ I1000 Oilseeds
- ☐ I2000 Fibre crops
- ☐ I3000 Tobacco
- ☐ I4000 Hops
- ☐ I5000 Abarcelonatic, medicinal and culinary plants
- ☐ I6000 Energy crops
- ☐ I9000 Other industrial crops
- ☐ G0000 Plants harvested green from arable land
- ☐ G1000 Temporary grasses and grazings
- ☐ G2000 Leguminous plants harvested green
- ☐ G3000 Green maize
- ☐ V0000 Fresh vegetables (including melons)
- ☐ V1000 Brassicas
- ☐ V2000 Leafy and stalked vegetables (excluding brassicas)
- ☐ V3000 Vegetables cultivated for fruit (including melons)
- ☐ V4000 Root, tuber and bulb vegetables
- ☐ V5000 Fresh pulses
- ☐ V9000 Other fresh vegetables
- ☐ S0000 Strawberries
- ☐ U1000 Mushrooms
- ☐ H0000 Permanent crops for human consumption
- ☐ F0000 Fruits, berries and nuts (excluding citrus fruits, grapes and strawberries)
- ☐ F1000 Fruits from temperate climate zones
- ☐ F2000 Fruits from subtropical and tropical climate zones
- ☐ F3000 Berries (excluding strawberries)
- ☐ F4000 Nuts
- ☐ T1000 Oranges
- ☐ T2000 Small citrus fruits
- ☐ T3000 Lemons and acid limes
- ☐ T4000 Pomelos and grapefruit
- ☐ T9000 Other citrus fruits
- ☐ W1000 Grapes
- ☐ O1000 Olives
- ☐ H9000 Other permanent crops for human consumption

**What is your experience with GM crop authorisation in the European Union until today?**

🔍 Check all that apply

Please choose **all** that apply:

- ☐ Submission for field trials
- ☐ Submission for cultivation
- ☐ Submission for use of food and feed and the importation into the territory of the EU
- ☐ No experience with GM crop authorisation in the EU

## General assessments

### Introduction

Before we move to specific scenarios for the future, we ask you some questions that are not specific for any scenario.



**In the current situation, what are the most important factors for plant breeders in deciding to develop new plant varieties using CG/TM techniques for the EU market?** Please distribute 100 points over the following seven categories:

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❶ The sum must equal 100.

❷ Each answer must be between 0 and 100

❸ Only integer values may be entered in these fields.

Please write your answer(s) here:

R&D costs (excluding regulatory compliance costs)

Regulatory costs related to market introduction

Total time to EU market in current regulatory framework

Availability of identification & detection methods

Consumer/retail demand for products derived from plant varieties using CG/TM products

Labelling & traceability requirements

EU regulatory uncertainty

Other (please specify in the next question)

Please specify here what other factors play a role in deciding whether to develop new plant varieties using CG/TM techniques for the EU market?

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

Please write your answer here:

### *Economic impacts*

Only answer this question if the following conditions are met:

((ImpactKnow\_Econ.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Econ.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Only answer this question if the following conditions are met:

Please choose the appropriate response for each item:

[illegible]

Only answer this question if the following conditions are met:

Please choose the appropriate response for each item:

[illegible]

## Health, consumer and social impacts

Only answer this question if the following conditions are met:

((ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

### To what extent is an increased availability and adoption of plant varieties developed using TM/CG methods positively or negatively associated with the following type of health, consumer and social impacts?

Only answer this question if the following conditions are met:

((ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong negative association	Moderate negative association	Small negative association	No association	Small positive association	Moderate positive association	Strong positive association	I don't know
Health benefits (e.g. due to less intolerances or allergies to certain foods/ingredients or improved diets due to improved nutritional profiles)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health risk (toxicity, allergenicity, negative nutritional impact)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Occupational health and safety (e.g. health risks due to exposure to pesticides etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall trust in European food safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant breeders' rights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmers' Rights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension of breeders' and farmers' portfolios to new, neglected or locally important crop species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of products free from NGTs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total consumer choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU food security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food security in developing countries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Income and wealth inequality (due to concentration of power)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Scenarios for 2030-2035 related to risk assessment and detection method

### Introduction

Risk assessment and detection are essential elements of the authorisation procedure for CG (cisgenesis) and TM (targeted mutagenesis) plant products within the existing legal framework on GMOs. For the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place

Scenario for 2030-2035	Risk assessment	Detection
<u>0: As today: the legal framework of today applies unchanged in 2030-2035</u>	As today: risk assessment according to current requirements of GMO legislation	As today: detection required with differentiation from conventional product
<u>A1: Authorisation with proportionate risk assessment and adapted detection method requirements</u>	Proportionate to the NGT product's risk profile	Detection method required but differentiation of NGT product from conventional product not required if not technically possible
<u>A2: Pre-notification of products that are also obtainable naturally or by conventional breeding</u>	Not needed if NGT-based product can also be obtained naturally or by conventional breeding	Not needed if NGT-based product can also be obtained naturally or by conventional breeding

#### Further clarification on the adapted risk assessment

Scenarios A1 and A2 concern adapting risk assessment to the risk profile of the product. The general principles for risk assessment would be fixed in the basic legal act, while specific data requirements adapted to different levels of risk would be set in tertiary legislation and/or EFSA guidance. The basic legal act would also provide the criteria that would be used to determine the type and scale of data required to perform the risk assessment of a specific product.

A draft indicative list of such criteria is presented below as a working basis for the impact assessment analysis

- Presence in the final product of genetic material prepared outside the organism
- Novelty (or not) of the genetic modification
- Novelty (or not) of the trait
- Technique used to introduce the modification
- Extent of the genetic modification
- Resulting (phenotypic) changes in the plant

- Expression of new protein(s)
- Alteration of expression of plant endogenous proteins outside natural variation

For the purpose of the impact assessment, it will be considered that the risk assessment would be carried out by EFSA (as today) for placing on the market of plants obtained by TM and CG and for their food and feed products. The EFSA opinion would be sent to the Commission, which would adopt the authorisation decision (as today). For field trials, the risk assessment would be carried out by national authorities (as today).

#### Criteria defining those CG/TM products that could also be obtained by natural/conventional breeding

A draft indicative list of such criteria for scenario A2 is presented below as a working basis for the impact assessment analysis. The criteria would apply cumulatively (all would need to be met to conclude that a product can also be obtained naturally or by conventional breeding techniques)

- The modification (substitution, deletion, insertion) is shorter than a defined size (number of base pairs)
- The modification is present in other plants of the same species or of a crossable species
- The modification is not intended to change (increases or decreases) the expression of an existing gene beyond the natural variation
- The modification result from cellular repair of a targeted DNA break in the absence of an externally provided repair template
- The resulting genetic composition remains within that which is accessible through crossing sexually compatible species
- The trait introduced does not result in the synthesis of a substance that is not present in existing conventional food
- The food produced from the plant does not contain modified proteins significantly similar to known toxins or allergens
- The endogenous allergen content of the food has not been modified.

The procedure to verify whether or not a product can also be obtained naturally or by conventional breeding would require a mandatory pre-notification by the applicant and verification that the above criteria are fulfilled. This verification would be carried out by EFSA. Based on this verification, the regulatory status of the product would be decided by the European Commission

### Risk-related impacts

Only answer this question if the following conditions are met:

((ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

**At the level of {if(MarketLevel=="OMS",MemberState.shown,"the EU")}, how many CG/TM-produced plant varieties do you expect to be on the market for each of the scenarios in 2030-2035?** Please consider the {if(MarketLevel=="SEU", "{CropCategory.shown} market only", "the overall agricultural market")}).

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or ((ImpactKnow\_Econ.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Econ.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

❗ Only numbers may be entered in these fields.

Please write your answer(s) here:

Number of plant varieties for scenario 0 (As today: the legal framework of today applies unchanged in 2030-2035)

Number of plant varieties for scenario A1 (Authorisation with proportionate risk assessment and adapted detection method requirements)

Number of plant varieties for scenario A2 (Pre-notification of products that are also obtainable naturally or by conventional breeding)

**At the level of {if(MarketLevel=="OMS",MemberState.shown,"the EU") and for each of the scenarios, what percentage of all plant varieties on the market in 2030-2035 do you expect to be developed using CG/TM techniques?** Please consider the {if(MarketLevel=="SEU", "{CropCategory.shown} market only", "the overall agricultural market")}).

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or ((ImpactKnow\_Econ.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Econ.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

❗ Only numbers may be entered in these fields.

❗ Each answer must be between 0 and 100

Please write your answer(s) here:

Number of plant varieties for scenario 0 (As today)

Number of plant varieties for scenario A1 (Authorisation with proportionate risk assessment and adapted detection method requirements)

Number of plant varieties for scenario A2 (Pre-notification of products that are also obtainable naturally or by conventional breeding)

[illegible]

**To what extent do you expect that the following health, environmental, consumer and social impact indicators will change in scenario “A2: Pre-notification of products that are also obtainable naturally or by conventional breeding” in 2030-2035 as compared to today?**

Only answer this question if the following conditions are met:

((ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<-25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)
Presence of potential hazards (e.g. share of (off-target) mutations in new products unintended effects of the genetic modifications changed molecular characteristics of new products changed phenotype/morphology/compositional and agronomic profile)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presence of potential risks (e.g. toxicity allergenicity negative nutritional impacts)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential impact on the environment and biodiversity (e.g. through horizontal gene-transfer accidental consumption persistence and invasiveness) during the field trial phase of CG/TM plant varieties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential impact on the environment and biodiversity (e.g. through horizontal gene-transfer accidental consumption persistence and invasiveness) during the deliberate release of cultivation phase of CG/TM plant varieties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk of non-compliance of products on the market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk of non-compliance of field trials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### *Strategic impacts*

Only answer this question if the following conditions are met:

((ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

(ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")

[illegible]



Only answer this question if the following conditions are met:  
 (/ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

[illegible]



**To what extent do you expect that the following strategic impact indicators will change in scenario “A2: Pre-notification of products that are also obtainable naturally or by conventional breeding” in 2030-2035 as compared to today?**

Only answer this question if the following conditions are met:

((ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<-25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)	I don't know
Number of authorised products or cultivated product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SME market share in breeding / seed industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost/price competitiveness of plant breeding (vis-à-vis countries that have addressed NGTs specifically in their legislation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost/price competitiveness of farming (vis-à-vis countries that have addressed NGTs specifically in their legislation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of funding for biotechnology R&D in academia/research institutes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total private R&D expenditure on plant breeding in EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU share of NGT-related patents globally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food security in EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market concentration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concentration of intellectual property rights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to (bio)technologies and genetic material in EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internal EU trade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
International trade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Coexistence impacts

Coexistence impacts refers to the unintended presence of certain NGT products in other non-NGT products due to unintended presence of NGTs in non-NGT (organic/conventional) crops or unintended admixture of NGT and non-NGT crops in the value chain.

Only answer this question if the following conditions are met:

((ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

(ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")

[illegible]

Impact indicators in *italics* are purely qualitative.

(ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

[illegible]

**To what extent do you expect that the following coexistence impact indicators will change in scenario “A2: Pre-notification of products that are also obtainable naturally or by conventional breeding” in 2030-2035 as compared to today? Impact indicators in italic are purely qualitative.**

Only answer this question if the following conditions are met:

((ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)	I don't know
Net economic impact on organic farmers (e.g., due to lost certificates, due to admixture events, measures in place to avoid contamination, extra burden of certification)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on farmers using NGTs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area under organic farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area under GM-free farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on costs of organic labels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on costs of GM-free labels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic traders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free traders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic processors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free processors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic food industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free food industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic retailers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free retailers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Increase in disputes</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Impact on consumer trust in organic labels</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Impact on consumer trust in GM-free labels</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**What could be alternatives methods for TM/CG plant or plant product traceability when analytical laboratory methods are unavailable or not reliable?**

Please write your answer here:

## Scenarios for 2030-2035 - Risk Assessment - Factors for plant breeders using CG/TM

As a reminder: for the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place

Scenario for 2030-2035	Risk assessment	Detection
<u>0: As today: the legal framework of today applies unchanged in 2030-2035</u>	As today: risk assessment according to current requirements of GMO legislation	As today: detection required with differentiation from conventional product
<u>A1: Authorisation with proportionate risk assessment and adapted detection method requirements</u>	Proportionate to the NGT product's risk profile	Detection method required but differentiation of NGT product from conventional product not required if not technically possible
<u>A2: Pre-notification of products that are also obtainable naturally or by conventional breeding</u>	Not needed if NGT-based product can also be obtained naturally or by conventional breeding	Not needed if NGT-based product can also be obtained naturally or by conventional breeding

**Please rate to what extent these scenarios affect the attractiveness of plant breeding using CG/TM techniques in the EU for EU/international cultivation, compared to the situation today.**

Only answer this question if the following conditions are met:  
 ((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

	Scenario 0 Unchanged policy and regulation (baseline)	Scenario A1 Authorisation with proportionate risk assessment and adapted detection method requirements	Scenario A2 Pre-notification of products that are also obtainable naturally or by conventional breeding
Total regulatory costs	<input type="text"/>	<input type="text"/>	<input type="text"/>
Market uncertainty	<input type="text"/>	<input type="text"/>	<input type="text"/>
Time to market	<input type="text"/>	<input type="text"/>	<input type="text"/>
Total attractiveness for plant breeding using CG/TM techniques for the EU market	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Scenarios for 2030-2035 - Risk Assessment - Impact of traits**

As a reminder: for the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place

Scenario for 2030-2035	Risk assessment	Detection
<u>0: As today: the legal framework of today applies unchanged in 2030-2035</u>	As today: risk assessment according to current requirements of GMO legislation	As today: detection required with differentiation from conventional product
<u>A1: Authorisation with proportionate risk assessment and adapted detection method requirements</u>	Proportionate to the NGT product's risk profile	Detection method required but differentiation of NGT product from conventional product not required if not possible
<u>A2: Pre-notification of products that are also obtainable naturally or by conventional breeding</u>	Not needed if NGT-based product can also be obtained naturally or by conventional breeding	Not needed if NGT-based product can also be obtained naturally or by conventional breeding

*Impact of traits from CG/TM-based plant varieties*

NGTs can in principle develop plants faster than conventional breeding techniques. More new varieties can thus be on the market faster, including those with specific desired characteristics, (e.g. stress resistance or consumer health.) In the following questions, we ask you to estimate the most likely percentage increase (positive percentage) or decrease (negative percentage) possible on such indicators due to new varieties that you expect to be on the market in 2030-2035 when the presented scenario is adopted. We ask for the net impact, meaning that we ask you to assess to what extent the CG/TM-developed varieties by 2030-2035 score higher/lower compared to what you expect to be available through conventional breeding in 2030-2035.

Only answer this question if the following conditions are met:  
 ((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

**In scenario 0: “Unchanged policy and regulation (baseline)”, what net effects do you expect to be attained on the following indicators by new plant varieties developed with CG/TM techniques on the market in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035? Please consider the {if(MarketLevel=="SEU","{CropCategory.shown} market only","the overall agricultural market")}.**

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❗ Each answer must be between -100 and 100

❗ Only integer values may be entered in these fields.

Please write your answer(s) here:

Expected change in pesticide use

Expected change in fertiliser use

Expected change in energy use

Expected change in use of natural resources (soil, water, etc.)

Expected change in total typical yield (either through productivity, or through risk-reduction traits such as drought tolerance)

Expected change in yield value (monetary)

Expected change in yield stability (higher means, lower variance)

Expected change in availability of plants with improved nutritional profiles

Expected change in breeders'/farmers' portfolio with new plant varieties, e.g., vegetables, fruits, neglected or locally important crops

Plant varieties with tolerance/resistance to environmental conditions (abiotic stresses), including climate change effects

Plant varieties tolerance/resistance to plant diseases (biotic stresses), e.g. due to nematodes, fungi, bacteria, viruses or pests

**In scenario A1: “Authorisation with proportionate risk assessment and adapted detection method requirements”, what net effects do you expect to be attained on the following indicators by new plant varieties developed with CG/TM techniques on the market in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?** Please consider the {if(MarketLevel=="SEU","{CropCategory.shown} market only","the overall argicultural market")}.

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❗ Only numbers may be entered in these fields.

❗ Each answer must be between -100 and 100

Please write your answer(s) here:

Expected change in pesticide use

Expected change in fertiliser use

Expected change in energy use

Expected change in use of natural resources (soil, water, etc.)

Expected change in total typical yield (either through productivity, or through risk-reduction traits such as drought tolerance)

Expected change in yield value (monetary)

Expected change in yield stability (higher means, lower variance)

Expected change in availability of plants with improved nutritional profiles

Expected change in breeders'/farmers' portfolio with new plant varieties, e.g., vegetables, fruits, neglected or locally important crops

Plant varieties with tolerance/resistance to environmental conditions (abiotic stresses), including climate change effects

Plant varieties tolerance/resistance to plant diseases (biotic stresses), e.g. due to nematodes, fungi, bacteria, viruses or pests

The development of NGTs has led to new plant varieties with properties such as changed herbicide tolerance, (a)biotic stress tolerance/resistance, etc. In scenario A2: “Pre-notification of products that are also obtainable naturally or by conventional breeding”, what net effects do you expect to be attained on the following indicators by new plant varieties developed with CG/TM techniques on the market in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035? Please consider the {if(MarketLevel=="SEU",{CropCategory.shown} market only,"the overall agricultural market")}.

Only answer this question if the following conditions are met:  
 ((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

- Only numbers may be entered in these fields.
- Each answer must be between -100 and 100

Please write your answer(s) here:

Expected change in pesticide use

Expected change in fertiliser use

Expected change in energy use

Expected change in use of natural resources (soil, water, etc.)

Expected change in total typical yield (either through productivity, or through risk-reduction traits such as drought tolerance)

Expected change in yield value (monetary)

Expected change in yield stability (higher means, lower variance)

Expected change in availability of plants with improved nutritional profiles

Expected change in breeders'/farmers' portfolio with new plant varieties, e.g., vegetables, fruits, neglected or locally important crops

Plant varieties with tolerance/resistance to environmental conditions (abiotic stresses), including climate change effects

Plant varieties tolerance/resistance to plant diseases (biotic stresses), e.g. due to nematodes, fungi, bacteria, viruses or pests

## Scenarios for 2030-2035 - Risk Assessment - Adoption by farmers

As a reminder: for the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place

Scenario for 2030-2035	Risk assessment	Detection
<u>0: As today: the legal framework of today applies unchanged in 2030-2035</u>	As today: risk assessment according to current requirements of GMO legislation	As today: detection required with differentiation from conventional product
<u>A1: Authorisation with proportionate risk assessment and adapted detection method requirements</u>	Proportionate to the NGT product's risk profile	Detection method required but differentiation of NGT product from conventional product not required if not possible
<u>A2: Pre-notification of products that are also obtainable naturally or by conventional breeding</u>	Not needed if NGT-based product can also be obtained naturally or by conventional breeding	Not needed if NGT-based product can also be obtained naturally or by conventional breeding

## Adoption by farmers of plants developed with CG/TM techniques

The following question concern the adoption of plants developed with CG/TM techniques by farmers in 2030-2035. We ask you to assess the market share of such plants or crops. The market share is considered at the level of the farmer against the total crop/plant market in the EU (i.e. the share of CG/TM crops over all crops used).

Only answer this question if the following conditions are met:  
 ((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y" or FieldActivitySector\_SQ005.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y" or PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))



**What do you expect will be the total market share of CG/TM crops/plants used by farmers for each of the scenarios in 2030-2035?** Please answer this question for the {if(MarketLevel=="SEU",{CropCategory.shown} market","the overall agricultural market")} in {if(MarketLevel=="OMS",MemberState.shown,"the EU")}.

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y")) or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Expected total market share (in percent) on the crop market in the EU for **Scenario 0** (As today)

Expected total market share (in percent) on the crop market in the EU for **Scenario A1** (Authorisation with proportionate risk assessment and adapted detection method requirements)

Expected total market share (in percent) on the crop market in the EU for **Scenario A2** (Pre-notification of products that are also obtainable naturally or by conventional breeding)

**In scenario 0: "Unchanged policy and regulation (baseline)", what do you expect will be the market share of CG/TM {if(MarketLevel=="SEU",CropCategory.shown,"crops/plants")} with specific traits used by farmers in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?**

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Plants with traits affecting pesticide use

Plants with traits affecting fertiliser use

Plants with traits affecting energy use

Plants with traits affecting natural resources use

Plants with traits modifying content that could affect health

Plants with traits that modify nutritional profile

Plants with traits affecting total yield

Plants with traits affecting total yield stability

Plants with traits affecting yield value

Plants with traits affecting tolerance/resistance to biotic stresses (e.g. nematodes, fungi, bacteria, viruses or pests)

Plants with traits affecting tolerance/resistance to abiotic stresses (e.g. drought tolerance)

**In scenario A1: “Authorisation with proportionate risk assessment and adapted detection method requirements”, what do you expect will be the market share of CG/TM {if(MarketLevel=="SEU",CropCategory.shown,"crops/plants")} with specific traits used by farmers in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?**

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Plants with traits affecting pesticide use

Plants with traits affecting fertiliser use

Plants with traits affecting energy use

Plants with traits affecting natural resources use

Plants with traits modifying content that could affect health

Plants with traits that modify nutritional profile

Plants with traits affecting total yield

Plants with traits affecting total yield stability

Plants with traits affecting yield value

Plants with traits affecting tolerance/resistance to biotic stresses (e.g. nematodes, fungi, bacteria, viruses or pests)

Plants with traits affecting tolerance/resistance to abiotic stresses (e.g. drought tolerance)

**In scenario A2: “Pre-notification of products that are also obtainable naturally or by conventional breeding”, what do you expect will be the market share of CG/TM {if(MarketLevel=="SEU",CropCategory.shown,"crops/plants")} with specific traits used by farmers in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?**

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Plants with traits affecting pesticide use

Plants with traits affecting fertiliser use

Plants with traits affecting energy use

Plants with traits affecting natural resources use

Plants with traits modifying content that could affect health

Plants with traits that modify nutritional profile

Plants with traits affecting total yield

Plants with traits affecting total yield stability

Plants with traits affecting yield value

Plants with traits affecting tolerance/resistance to biotic stresses (e.g. nematodes, fungi, bacteria, viruses or pests)

Plants with traits affecting tolerance/resistance to abiotic stresses (e.g. drought tolerance)

## Introduction

Labelling and traceability are essential elements within the current policy and regulatory framework for plant varieties developed using CG/TM (cisgenesis or targeted mutagenesis, referred to as NGTs - i.e. new genomic techniques). For the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place:

Scenario for 2030-2035	Labelling (GMO-specific requirements)	Traceability (GMO-specific requirements)
<u>0: Unchanged policy and regulation (baseline)</u>	As today: labelling as a GMO is always required	As today: traceability of the GMO is always required
<u>B1: Additional sustainability label</u>	As today, but with possibility of additional label for sustainability claims, referring to the sustainability contribution of the introduced trait	As today, but with additional traceability for sustainability claims
<u>B2: No labelling if sustainable</u>	No specific labelling needed, only inclusion in public registry if NGT product contributes to sustainability	As today
<u>B3: No labelling and traceability if a product is also obtainable naturally or by conventional breeding</u>	Not needed if NGT product can also be obtained naturally or by conventional breeding, only inclusion in public registry	Not needed if NGT product can also be obtained naturally or by conventional breeding

### Consumer information impacts

Only answer this question if the following conditions are met:

(ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4") or (ImpactKnow\_Cons.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Cons.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

**Compared to the baseline (always a GM labelling requirement), how does the provision of information for consumers on the CG/TM status of products change in the case of the removal of a GM labelling requirement on the final product and replacing it with another method of obtaining information (e.g. link to a website or QR code)?**

Only answer this question if the following conditions are met:

((ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4") or (ImpactKnow\_Cons.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Cons.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

[illegible]

**Compared to the baseline (always a GM labelling requirement), how do the how do the following indicators for CG/TM products change in the case of an additional sustainability label (scenario B1)?**

Only answer this question if the following conditions are met:

((ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_HealConSoc.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4") or (ImpactKnow\_Cons.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Cons.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)	I don't know
Clarity for consumers when CG/TM products will have a sustainable trait label if they have sustainable traits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willingness to buy CG/TM products if sustainable trait label indicates the product has sustainable traits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**To what extent would the following indicators change in case of additional traceability requirements for sustainability claims?**

Only answer this question if the following conditions are met:

((ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease	Moderate decrease	Small decrease	No change	Small increase	Moderate increase	Strong increase	I don't know
Ease of compliance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrative burden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Costs of compliance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***Strategic impacts***

Only answer this question if the following conditions are met:

((ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

[illegible]

Only answer this question if the following conditions are met:  
(ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")

[illegible]

**Compared to the baseline (always a GM labelling requirement), how do the following strategic indicators for CG/TM products change in the case of “No labelling and traceability if a product is also obtainable naturally or by conventional breeding” (scenario B3)?** Impact indicators in *italic* are purely qualitative.

Only answer this question if the following conditions are met:

((ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)	I don't know
Number of authorised products or cultivated products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SME market share in breeding / seed industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost/price competitiveness of plant breeding ( <i>vis-à-vis</i> countries that have addressed NGTs specifically in their legislation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost/price competitiveness of farming ( <i>vis-à-vis</i> countries that have addressed NGTs specifically in their legislation )	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of funding for biotechnology R&D in academia/research institutes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total private R&D expenditure on plant breeding in EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU share of NGT-related patents globally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Food security in EU</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Market concentration</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Concentration of intellectual property rights</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Access to (bio)technologies and genetic material in EU</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Internal EU trade</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>International trade</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Coexistence impacts

*Coexistence impacts refer to the unintended presence of certain NGT products in other non-NGT products due to unintended presence of NGTs in non-NGT (organic/conventional) crops or unintended admixture of NGT and non-NGT crops in the value chain.*

Only answer this question if the following conditions are met:

((ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Only answer this question if the following conditions are met:  
 (ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")

[illegible]



[illegible]

**To what extent do you expect that the following coexistence impact indicators will change in scenario B3: “No labelling and traceability if a product is also obtainable naturally or by conventional breeding” in 2030-2035 as compared to today? Impact indicators in *italic* are purely qualitative.**

Only answer this question if the following conditions are met:  
 ((ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)	I don't know
Net economic impact on organic farmers (e.g., due to lost certificates, due to admixture events, measures in place to avoid contamination, extra burden of certification)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on farmers using NGTs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area under organic farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area under GM-free farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on costs of organic labels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on costs of GM-free labels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic traders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free traders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic processors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free processors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic food industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free food industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on organic retailers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Net economic impact on GM-free retailers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Increase in disputes</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Impact on consumer trust in organic labels</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Impact on consumer trust in GM-free labels</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**What could be alternatives to traceability requirements for sustainability claims?**

Only answer this question if the following conditions are met:  
 ((ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Coex.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please write your answer here:

## Scenarios for 2030-2035 related to sustainability provisions

### Introduction

NGTs can potentially contribute to sustainability goals within the Green Deal. Unlike today, provisions related to sustainability could be introduced in the future policy and regulatory framework for cisgenesis (CG) or targeted mutagenesis (TM). For the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place:

Scenario for 2030-2035	Authorisation
0: <u>Unchanged policy and regulation</u>	As today: no sustainability requirements/incentives for authorisation

<u>C1: Sustainability incentives for authorisation</u>	<b>Positive regulatory incentives for authorisation</b> NGT plant products with traits that contribute to sustainability objectives receive positive regulatory incentives for authorisation (e.g. regulatory and scientific advice before and during approval procedure, measures to facilitate approval process (waiving of fees, faster procedures, allowing sustainability-related claims to appear on the final product)).
<u>C2: Sustainability requirement: no authorisation if detrimental for sustainability</u>	NGT Plant products with traits that are detrimental to sustainability objectives are not authorised

Scope of the scenarios

The considerations for sustainability in these scenarios refer only to the trait in the introduced plant, and its potential impacts on sustainability (e g., a trait that reduces the amount needed of a pesticide or a trait resulting in increased need of water), when compared to the plant without genetic modification

Dimensions of sustainability

The scenarios cover the potential impacts on the three dimensions of sustainability, i.e. environmental, social (including health) and economic aspects

Verification of the impact on sustainability

The impact of the modified trait on sustainability would be verified by a competent authority, based on information supplied by the applicant. This verification process could follow either a decentralised (verification by a national competent authority) or a centralised (by EFSA) procedure.

Two draft indicative lists are presented below as a working basis for the impact assessment analysis. These lists reflect the sustainability-related objectives of the Green Deal and the Farm to Fork and Biodiversity strategies, including those relating to food security, and cover all three dimensions of sustainability mentioned above.

List of desirable sustainability impacts:

- Reduction in use of plant protection products
- Reduction in use of fertilisers
- Reduction in use of natural resources
- Tolerance/resistance to environmental conditions (abiotic stresses), including climate change effects
- Tolerance/resistance to plant diseases (biotic stresses), e.g. due to nematodes, fungi, bacteria, viruses or pests
- Better composition or healthier nutrient profile, e.g. on fats, proteins, vitamins, fibres, sugar content, lower content of toxic substances or allergens
- Better agronomical characteristics, e g., increased or more stable yields, more or larger seeds or fruits, improved flowering time, improved breeding characteristics
- Reduced food waste through better harvest, post-harvest, transport or storage performance
- (Re-)Introduction of niche/orphan plants that are important from a local ecological or agri-food perspective

List of undesirable sustainability impacts sustainability:

- Increase in use of plant protection products
- Increase in use of fertilisers
- Increase in use of natural resources
- Reduced tolerance/resistance to environmental conditions (abiotic stresses), including climate change effects
- Reduced tolerance/resistance to plant diseases (biotic stresses), e g. due to nematodes, fungi, bacteria, viruses or pests
- Worse composition or less healthy nutrient profile, e g. on fats, proteins, vitamins, fibres, sugar content, higher content of toxic substances or allergens
- Increased food waste through worse harvest, post-harvest, transport, or storage performance
- Disappearance of niche/orphan plants that are important from a local ecological or agri-food perspective

Environmental impacts

Only answer this question if the following conditions are met:  
((ImpactKnow\_Env NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

[illegible]

**To what extent do you expect a positive or negative association between the availability and adoption of plant varieties developed with TM/CG techniques on the market in 2030-2035 and the following environmental impacts in the case of sustainability requirements for authorisation such as in Scenario C2: “Sustainability requirement: no authorisation if detrimental to sustainability”?**

Only answer this question if the following conditions are met:

((ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong negative association	Moderate negative association	Small negative association	No association	Small positive association	Moderate positive association	Strong positive association	I don't know
Overall environmental effect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total use of pesticides	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water quality - pesticide pollution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total mineral fertiliser use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water quality - nitrate pollution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water use efficiency in agriculture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total Energy use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total use of natural resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greenhouse gas emission levels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pest or pathogen pressure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on ecosystem services of soil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on non-target organisms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impact on biodiversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### *Impact of traits from CG/TM-based plant varieties*

NGTs can in principle develop plants faster than conventional breeding techniques. More new varieties can thus be on the market faster, including those with specific desired characteristics, (e.g. stress resistance or consumer health.) In the following questions, we ask you to estimate the most likely percentage increase (positive percentage) or decrease (negative percentage) possible on such indicators due to new varieties that you expect to be on the market in 2030-2035 assuming the presented scenarios will be part of regulations that would enter into force in 2025. We ask for the net impact, meaning that we ask you to assess to what extent the CG/TM-developed varieties by 2030-2035 score higher/lower compared to what you expect to be available through conventional breeding in 2030-2035.

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

**In scenario C1: “Sustainability incentives for authorisation”, compared to the baseline what net effects do you expect to be attained on the following indicators by new plant varieties developed with CG/TM techniques on the market in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?** Please consider the {if(MarketLevel=="SEU","{CropCategory.shown} market only","the overall agricultural market")}.

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

① Only numbers may be entered in these fields.

② Each answer must be between -100 and 100

Please write your answer(s) here:

Expected change in pesticide use

Expected change in fertiliser use

Expected change in energy use

Expected change in use of natural resources (soil, water, etc.)

Expected change in total typical yield (either through productivity, or through risk-reduction traits such as drought tolerance)

Expected change in yield value (monetary)

Expected change in yield stability (higher means lower variance)

Expected change in breeders/farmers portfolio size with new plant varieties, e.g., vegetables, fruits, neglected or locally important crops

**In scenario C2: “Sustainability requirement: no authorisation if detrimental to sustainability”, compared to the baseline, what net effects do you expect to be attained on the following indicators by new plant varieties developed with CG/TM techniques on the market in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?** Please consider the {if(MarketLevel=="SEU","{CropCategory.shown} market only","the overall agricultural market")}.

Only answer this question if the following conditions are met:

((TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

① Only numbers may be entered in these fields.

② Each answer must be between -100 and 100

Please write your answer(s) here:

Expected change in pesticide use

Expected change in fertiliser use

Expected change in energy use

Expected change in use of natural resources (soil, water, etc.)

Expected change in total typical yield (either through productivity, or through risk-reduction traits such as drought tolerance)

Expected change in yield value (monetary)

Expected change in yield stability (higher means lower variance)

Expected change in breeders/farmers portfolio size with new plant varieties, e.g., vegetables, fruits, neglected or locally important crops

## Adoption by farmers of plants developed with CG/TM techniques

The following question concern the adoption of plants developed with CG/TM techniques by farmers in the EU in 2030-2035. We ask you to assess the market share of such plants or crops. The market share is considered at the level of the farmer against the total crop/plant market in the EU (i.e. the share of CG/TM crops over all crops used).

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (FieldActivitySector\_SQ005.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

**What do you expect will be the total market share of CG/TM crops/plants used by farmers for each of the scenarios in 2030-2035?** Please answer this question for the {if(MarketLevel=="SEU",{CropCategory.shown} market","the overall agricultural market")} in {if(MarketLevel=="OMS",MemberState.shown,"the EU")}.

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (FieldActivitySector\_SQ005 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Expected total market share in scenario C1

Expected total market share in scenario C2

**In scenario C1: "Sustainability incentives for authorisation", what do you expect will be the market share of CG/TM {if(MarketLevel=="SEU",CropCategory.shown,"crops/plants")} with specific traits used by farmers in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?**

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (FieldActivitySector\_SQ005 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003 NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Plants with traits affecting pesticide use

Plants with traits affecting fertiliser use

Plants with traits affecting energy use

Plants with traits affecting natural resources use

Plants with traits modifying content that could affect health

Plants with traits that modify nutritional profile

Plants with traits affecting total yield

Plants with traits affecting yield stability

Plants with traits affecting yield value

Plants with traits affecting tolerance/resistance to biotic stresses (e.g. nematodes, fungi, bacteria, viruses or pests)

Plants with traits affecting tolerance/resistance to abiotic stresses (e.g. drought tolerance)



**In scenario C2: "Sustainability requirement: no authorisation if detrimental to sustainability", what do you expect will be the market share of CG/TM {if(MarketLevel=="SEU",CropCategory.shown,"crops/plants")} with specific traits used by farmers in {if(MarketLevel=="OMS",MemberState.shown,"the EU")} in 2030-2035?**

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (FieldActivitySector\_SQ005.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y") or (PositionValueChain\_SQ003.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Expected market share of CG/TM plants with traits affecting pesticide use

Expected market share of CG/TM plants with traits affecting fertiliser use

Expected market share of CG/TM plants with traits affecting energy use

Expected market share of CG/TM plants with traits affecting natural resources use

Expected market share of CG/TM plants with traits modifying content that could improve health

Expected market share of CG/TM plants with traits affecting total yield

Expected market share of CG/TM plants with traits affecting yield value

### *Factors for plant breeders developing varieties using CG/TM*

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

**At the level of {if(MarketLevel=="OMS",MemberState.shown,"the EU")}, what number of plant varieties developed using CG/TM techniques do you expect to be on the market for each of the scenarios in 2030-2035? Please consider the {if(MarketLevel=="SEU","{CropCategory.shown} market only","the overall argicultural market")}.**

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y")) or ((ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3") or (ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")) or (TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1"))

❶ Only numbers may be entered in these fields.

Please write your answer(s) here:

Number of plant varieties developed in scenario C1: Sustainability incentives for automisation

Number of plant varieties developed in scenario C2: Sustainability requirement: no authorisation if detrimental to sustainability

**At the level of {if(MarketLevel=="OMS",MemberState.shown,"the EU")} and for each of the scenarios, what percentage of all plant varieties on the market in 2030-2035 do you expect to be developed using CG/TM techniques? Please consider the {if(MarketLevel=="SEU","{CropCategory.shown} market only","the overall argicultural market")}.**

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y")) or ((ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3") or ImpactKnow\_Env.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")) or (TypeOrg.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59736) == "A1"))

❶ Only numbers may be entered in these fields.

❷ Each answer must be between 0 and 100

Please write your answer(s) here:

Number of plant varieties developed in scenario C1

Number of plant varieties developed in scenario C2



**In Scenario C1: “Sustainability incentives for authorisation” examples of positive regulatory incentives are provided for the authorisation of NGT plant products with traits that contribute to sustainability. Would these examples of regulatory incentives be useful in your opinion?**

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

Please write your answer here:

**In Scenario C1: “Sustainability incentives for authorisation” examples of positive regulatory incentives are provided for the authorisation of NGT plant products with traits that contribute to sustainability. What additional regulatory incentives do you think would be interesting or effective for plant breeders?**

Only answer this question if the following conditions are met:

((FieldActivitySector\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59737) == "Y") or (PositionValueChain\_SQ002.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59738) == "Y"))

Please write your answer here:

***Strategic impacts***

Only answer this question if the following conditions are met:

((ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

(ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4")

[illegible]

To what extent do you expect that the following strategic impact indicators will change in scenario “C2: Sustainability requirement: no authorisation if detrimental to sustainability” in 2030-2035 as compared to today? Impact indicators in *italic* are purely qualitative.

Only answer this question if the following conditions are met:

((ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A3" or ImpactKnow\_Strat.NAOK (/admin/questions/sa/view/surveyid/959299/gid/2681/qid/59739) == "A4"))

Please choose the appropriate response for each item:

	Strong decrease (<25%)	Moderate decrease (-10 to -25%)	Small decrease (-1 to -10%)	No change (0%)	Small increase (1 to 10%)	Moderate increase (10 to 25%)	Strong increase (>25%)	I don't know
Number of authorised products or cultivated products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SME market share in breeding / seed industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost/price competitiveness of plant breeding (vis-à-vis countries that have addressed NGTs specifically in their legislation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost/price competitiveness of farming (vis-à-vis countries that have addressed NGTs specifically in their legislation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of funding for biotechnology R&D in academia/research institutes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total private R&D expenditure on plant breeding in EU	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
EU share of NGT-related patents globally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Food security in EU</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Market concentration</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Concentration of intellectual property rights</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Access to (bio)technologies and genetic material in EU</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Internal EU trade</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>International trade</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Scenarios for 2030-2035 - Sustainability - Factors Plant Breeders

As a reminder: for the questions in this section, we ask you to assume the following scenarios for 2030-2035 and assume no national opt-out will be in place

Scenario for 2030-2035	Authorisation
<u>0: Unchanged policy and regulation</u>	As today: no sustainability requirements/incentives for authorisation
<u>C1: Sustainability incentives for authorisation</u>	Positive regulatory incentives for authorisation NGT plant products with traits that contribute to sustainability objectives receive positive regulatory incentives for authorisation (e.g. regulatory and scientific advice before and during approval procedure, measures to facilitate approval procedures including waiving of fees for the detection method, no renewal/time limit for authorisations).
<u>C2: Sustainability requirement: no authorisation if detrimental for sustainability</u>	Not needed NGT Plant products with traits that are detrimental to sustainability objectives are not authorised