

## Genome editing

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

7<sup>th</sup> – 9<sup>th</sup> Informal meeting, online, 15.5. & 2.10.2023, 13.2.2024

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*Brussels, 2.10.2024*

**The European Plant Science Organisation (EPSO) invited policymakers to join EPSO members in the 7<sup>th</sup> to 9<sup>th</sup> informal meetings 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 16-17 countries and the European level were 15-18 scientists and 18-27 policymakers from governmental bodies at the three meetings respectively. 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 meetings**, participants discussed the **current legislation: how it could be improved** in the short and in the longer term. A summary of the current situation and the European Commission's (EC) consultation outcome on its draft impact assessment on policy options regarding New Genomic Techniques (NGT), later on the EC legal proposal were discussed exchanging views from the science and policy sides.

EPSO gave first feedback about the EMBO/EPSO online workshop on IP issues related to Genome Editing. The report will be published in 2024.

Regarding the NGT consultation, EPSO presented its own submission and an overview on the NGT situation in and beyond of Europe.

Once the EC had presented its legal proposal on NGTs, EPSO published its statement to this on 6.11.2023, welcoming the EC proposal and suggesting to further clarify or refine to make the proposal future proof, highlighting: i) Under the criteria for determining NGT 1 status the maximum number of targeted genetic changes allowed in NGT 1 plants should be counted per basic set of chromosomes; ii) calling for the legislation to further enable field trials for scientific purposes; iii) NGT1 plants should not be excluded from organic farming practices.

EPSO further explained its 'must protect' items in the EC NGT proposal, published 19.1.2024, including: i) The criteria for determining NGT1 status should be based on similarity to what can be obtained using conventional methods; ii) products derived from NGT1 plants should not be labelled; iii) Text on Intellectual Property Rights should not be included in the NGT legislation.

EPSO presented its activities in sciences support and science outreach, including the monthly online Plant Science Seminars. It showed success stories from the international Fascination of Plants Day, held across the globe around the 18<sup>th</sup> of May 2022 with over 800 events in over 54 countries.

**Views from the various ministry participants were presented.** These were placed in a wider perspective:

Most present countries from northern Europe tend to support the EC legal proposal. They continue national consultation processes with policymakers, scientists, and different stakeholder groups. Sustainability criteria were rated important but if introduced, they should apply to the entire agri-food value chain and all technologies / approaches (not apply to NGT only) and therefore be rather in the Sustainable EU Food System new initiative. While the participants in the meeting expressed that their ministries were positive about the safe use of NGT in plant products it was also mentioned that in some countries the opinions vary between different ministries.

In central Europe: Again, several governments or ministries tended to support the EC legal proposal and continue the discussions between policymakers and stakeholders. Some member states / ministries funded NGT research programmes / projects. The economic importance of organic farming for some countries was mentioned as a key issue. It was also reported that public opinion and media seem to be more positive on NGT.

Particularly in southern Europe member states reported to support the EC legal proposal towards the use of GE crops in Europe as they already face the challenges of climate change and urgently need the development of improved / adapted crops to sustain their agriculture.

The discussion and voting of the European Parliament were shortly presented and discussed.

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 meetings, Flagships towards GE products and consumer surveys** were discussed:

The ongoing projects and potential flagship products in the R&D chain were presented. The first examples were projects on biotechnology funded under the 'BIOTECH' strategic programme in Italy to develop new knowledge on gene functions and to select new genotypes. Advances were presented on plant health in wheat, grapevine, basil, tomato and eggplant. A new call in Germany was presented inviting 'Modern breeding research for climate- and site-adapted crops'. This aims for instance to make crop plants more tolerant against abiotic and biotic stressors, increase their resource use efficiency and sustainability and increase agro-biodiversity and soil health. Several projects ongoing in Sweden were highlighted, including enhancing nutritional properties of potato, reduce allergenicity of wheat, improve the photosynthesis of poplar, and alter the starch composition in potato.

A brief discussion of the known national stakeholder and consumer surveys on GE was held, particularly the KaVEdiT initiative funded by the ministry in Finland that just started to survey consumers' and plant producers' views on the future of Gene Editing.

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

IPR issues were shortly discussed, and preliminary feedback from the EMBO/EPSO workshop on the IPR question organized in January 2022 was provided. On the question 'Where do we want to be?' most workshop participants agreed to call for facilitating support to ensure good implementation so technologies can be used widely by researchers as well as all sizes of breeding companies and

farmers. On the question 'how do we get there?' the majority concluded that: Do not change the patent legislation and plant breeder's rights but implement it better. The report is foreseen to be published in 2024. In addition, the ALLEA statement on measures to ease the impact of the IP system on NGTS for crop development was summarised. The statement was published in February 2024.

## **Conclusions and actions**

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

The 10<sup>th</sup> meeting will be held in 2024, focusing on activities and discussing advancement of the EC legal proposal in the European Parliament and the Council. 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 sustainable agriculture in Europe and worldwide.

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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### **About EPSO**

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents around 200 research institutes, departments, and universities from 31 countries, mainly from Europe, and 2.600 individuals Personal Members, representing over 26 000 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.

## Annex References

### EC until 13.2.2024:

- EC [legal proposal for a Regulation of the European Parliament and of the Council on plants obtained by certain new genomic techniques](#) and their food and feed & [Annexes](#), 5.7.2023
- Consultation on the [Horizon Europe – interim evaluation \(europa.eu\)](#) (1.12.2022 – 23.2.2023)
- Consultation [towards the impact assessment of policy options on New Genomic Techniques \(NGTs\)](#) (29.4.-22.7.2022)
- [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
- [Roadmap \(inception impact assessment\) on new genomic techniques](#), 24.9.2021
- [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 until 13.2.2024:

- EPSO: [Must-protect components of the NGT legislation proposed by the European Commission](#) - Annex to the EPSO statement on the EC's legal proposal, 19.01.2024
- EPSO [statement on the European Commission's legal proposal](#) for a Regulation of the European Parliament and of the Council on plants obtained by certain NGTs and their food and feed..., 06.11.2023
- EPSO's [Tree and Forest Biology and Biotechnology Working Group – statement on Future research needs](#), 25.9.2023
- EPSO [5<sup>th</sup> Workshop on Plants and Microbiomes](#), Vienna 11-12.12.2023 – Draft programme - submit your mini-abstract by 8 September, 20.7.2023
- EPSO [statement on Nutritional security and announcement 4<sup>th</sup> Workshop](#) 'Addressing the Nutritional Security goal in the context of climate change' in Milano on 13-14 September 2023 – registration deadline 20.6.2023; 31.5.2023; updated 12.7.2023
- EPSO: [Healthy Plants for a sustainable production](#) – statement by the EPSO 'Plant Health' Working Group, 11.7.2023
- EPSO: [first reaction to the EC's legal proposal for a Regulation of the European Parliament and of the Council on plants obtained by certain NGTs and their food and feed](#)", 6.7.2023
- EPSO: [Genome editing - Improving legislation and starting flagships](#) to better address climate, environmental, food and health challenges, Report 6<sup>th</sup> informal science and policy meeting, 7.3.2023
- EPSO: [Contributions from plant research & innovation on the past, present & future of the European Research & Innovation Framework Programmes 2014-2027](#), 21.2.2023
- EPSO: [Genome editing – Improving legislation and starting flagships to better address climate, environmental, food and health challenges](#), report 5<sup>th</sup> informal science and policy meeting, 25.3.2022
- 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
- EPSO: [Genome editing – Improving legislation and starting flagships to better address climate, environmental, food and health challenges](#), Report 4<sup>th</sup> informal science and policy meeting, 4.10.2021
- 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: [Statement on the Farm to Fork Strategy by the European Commission](#), 2.6.2020

### Surveys until 13.2.2024

- The **Norwegian** Biotechnology Advisory Board (2020).

- Norwegian consumers' attitudes toward gene editing in Norwegian agriculture and aquaculture. [www.bioteknologiradet.no/filarkiv/2020/04/Report-consumer-attitudes-to-gene-editing-agri-and-aqua-FINAL.pdf](http://www.bioteknologiradet.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 \(in Swedish\)](#)
- Survey on NGTs in **Finland** - [report](#) ; [Blog](#)
- ETH study in **Switzerland**: Angela Bearth, ETH / CH
  - Bearth, A., Kaptan, G., & Kessler, S. H. (2022). Genome-edited versus genetically-modified tomatoes: an experiment on people's perceptions and acceptance of food biotechnology in the UK and Switzerland. *Agriculture and Human Values*, 39, 1117-1131. <https://doi.org/10.1007/s10460-022-10311-8>
  - Saleh, R., Bearth, A., Siegrist, M. (2021). How chemophobia affects public acceptance of pesticide use and biotechnology in agriculture. *Food Quality and Preference*, 91, 104197 <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_and_food_production)

Please refer to the Annex II and III o 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.