



Impact of future **GMO** regulation scenarios on the **Organic Sector**

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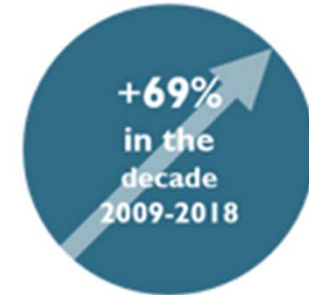
European Consortium for Organic Plant Breeding (ECO-PB) www.eco-pb.org

DFG & Leopoldina Genome Editing in Europe: New Agenda or New Disputes

Session 3: Socioeconomic and Environmental Concerns International Virtual Conference 1.10.2020

Organic Sector in the European Union 2018

- 13.8 million ha organic farmland (7.7%)
- 327'222 organic producers & 71'960 organic processors
- 37.4 billion € EU organic retail sales
- Annual growth of +7.7%



In 2018 over two million hectares more were reported compared with 2017.

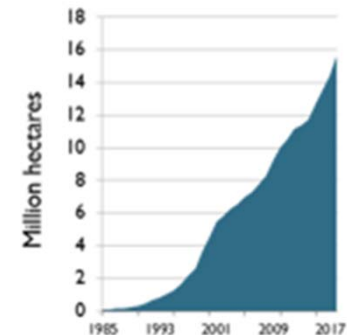
New EU Farm to Fork Strategy (May 2020) aims for 25% share of organic farm land by 2030



FiBL

www.fibl.org

FiBL survey 2020, www.organic-world.net



Growth of the organic agricultural land 1985–2018

Principles of Organic Agriculture

- Based on the principles of **Health, Ecology, Fairness & Care**
- **Value based & process oriented** defined by the organic sector

Since several years the compatibility of breeding techniques with organic agriculture has been discussed at different levels considering

- Risks (precautious principle) for human, animals, plants, soil fertility, environment based on techniques and their application
 - Ethical issues (how far shall it be allowed to modify organisms directly at the DNA level)
 - Socio-economic issues (IPR, breeders privilege, market concentration, dependency of farmers)
 - Expectation and trust of organic consumers
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- In the European Union, organic agriculture is **GMO-free** by definition, as the use of **GMOs** is prohibited in the organic production process, according to the current (Regulation 834/2007, Art. 4), and new organic regulation (Regulation 848/2018, Art. 5).

Criteria for Organic Plant Breeding

Ethical issues

- Genom is respected as indivisible entity, no technical/physical intervention (e.g. isolated DNA)
- Cell is respected as indivisible functional entity, no technical/physical intervention (e.g. cell fusion)
- Maintain reproducibility in species specific manner
- No legal or technical barriers to restrict breeders' right
- Natural crossing barriers are respected
- Promotion of open pollinated varieties as alternative to F1 hybrids to enable farm saved seed
- Transparency

Position of the Organic Sector on the compliance of New Genomic Techniques (NGT)

Position Paper of ECO-PB on Organic Plant Breeding 2013:

- Organic plant breeders in Europe will refrain from any breeding technique that technically interferes below the cell level
- <https://orgprints.org/37038/1/ECO-PB%20Position%20paper%20organic%20plant%20breeding%20final.pdf>

IFOAM International: Position Paper on New Breeding Techniques 2017

- Draft February 2017, consultation and final approval on General Assembly of IFOAM in November 2017
- Clarity & Transparency on the criteria used to determine what breeding techniques are compatible with Organic Farming Systems and Organic Breeding
- https://www.ifoam.bio/sites/default/files/2020-03/Breeding_position_paper_v01_web_0.pdf



Position of the Organic Sector on the compliance of New Genomic Techniques (NGT)

IFOAM Organics Europe Position 2018

- NGT are not compatible with organic farming and should be declared as GMO according to EU regulation and labelled accordingly

https://www.organicseurope.bio/content/uploads/2020/06/ifoameu_policy_kgoo_newgmolea_flet_england_05062019.pdf?dd

BÖLW (Bundesverband ökologischer Lebensmittelwirtschaft) Positionspapier von 2018

- Technical intervention below the cell level are not compatible with organic agriculture, maintains natural fertility

https://www.boelw.de/fileadmin/user_upload/Dokumente/Pflanze/180518_BOELW_Position_Pflanzenzuechtung.pdf

Transparency & traceability to allow freedom of choice for organic farmers & consumers

Impact of present **GMO** regulation on the Organic Sector (**Scenario I**)

- According to the ECJ decision of July 2018 **genome editing is regulated under the GMO regulation** and derived products must be declared and not permitted in the Organic Sector
- 17 EU countries banned GMO cultivation (opt-out)
- The organic value chain follows all measures to keep the organic sector GMO-free and to avoid any contamination from seed to plate <https://www.organicseurope.bio/what-we-do/gmos/>
- <https://orgprints.org/33084/1/SOCIO-ECONOMIC%20IMPACTS%20OF%20GMOs.pdf>
 - High costs for GMO testing & organic certification
 - Risk of declassification due to unintended contamination
 - Most difficult to maintain purity of organic seed (organic maize was terminated in Spain)
 - Until now these costs are paid by the organic sector, not by GMO industry nor user of GMO

Impact of future **GMO** regulations on the **Organic Sector**

Scenario 2

- If genome editing is **no longer regulated as «GMO»** it is expected that the technique will be applied in many breeding programs in Europe and also products derived from genome editing will be produced in Europe and also imported
 - However, NGT will not be accepted by the Organic Setors as the **process** involves genetic engineering or manipulation below cell level (this is not based on a lack of knowledge of the Organic Sector)
- **Full transparency is essential for the Organic Sector to maintain its integrity**
- Labelling and traceability along the value chain
 - Detection methods to minimize unintended contamination and fraud
- Very high risk of contamination will increase with increased commercialization of genome editing derived products
- Increasing cost for separate value chains and certification

Impact of future **GMO** regulations on the **Organic Sector**

Scenario 2

- Separation in organic/NGT-free and conventional breeding programs
- Organic farmers have less choice of cultivars
- Organic breeders have less crossing parents available hampering them to participate on general breeding progress.

Scenario 3

If genome editing is **no longer regulated as «GMO» and not declared**

- It will be impossible to keep NGT out of the Organic Sector
- Organic Sector will lose its credibility and trust
- Farmers and Consumers will lose their freedom of choice
- It might cause a strong decline of the Organic Sector in Europe with negative impact on economy, environment and society

Conclusion

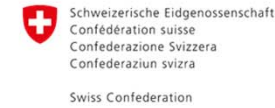
- The GMO/NGT regulations must request **full transparency and traceability** of GMO and New Genomic Techniques (NGT) to safeguard the integrity of the Organic Sector and freedom of choice of citizens
- The legal framework must ensure that the Organic Sector can remain GMO/NGT-free and further develop to reach 25% in 10 years
- The legal framework should protect the income and livelihoods of organic farmers and processors, in such a way that contamination of non-GMO/NGT materials should be prevented by the GMO producer and that detection costs to identify fraud or unintentional contamination is in line with the polluter pays principle.
- Genetic resources need to be protected, preserved, and maintained to stay GMO/NGT-free
- Cultivars and animal breeds acceptable to organic need to be identified
- Greater public resources are needed for research & development of breeding innovations acceptable for organic production (e.g., LIVESEED, BRESOV, ECOBREED)
- Intellectual property rights need to be fair to all



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