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Impact of future GMO regulation scenarios on the Organic Sector

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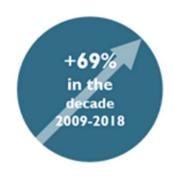
DFG & Leopoldina Genome Editing in Europe: New Agenda or New Disputes Session 3: Socioeconomic and Environmental Concerns International Virtual Conference 1.10.2020

Organic Sector in the European Union 2018

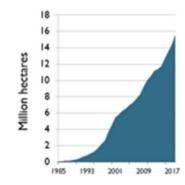
- 13.8 million ha organic farmland (7.7%)
- 327'222 organic producers & 71'960 organic processors
- 37.4 billion € EU organic retail sales
- Annual growth of +7.7%

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





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



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
- 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 complience 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 interfers below the cell level
- https://orgprints.org/37038/1/ECO-PB%20Postition%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 complience 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

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

- According to the ECJ decistion 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 traceablility 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
 - → Increasings 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 loose its credibility and trust
- > Farmers and Consumers will loose 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 traceabilty 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







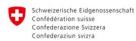












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