Summary

Non-GM seed production at risk: Practical consequences of a deregulation of NGTs for the seed sector

November 2025

GMO-free seeds are the foundation of a GMO-free agricultural and food sector. Yet the potential consequences of the European Commission's proposed deregulation of new genetic engineering (NGT) for GMO-free seed production have received little attention so far. This position paper outlines the key challenges that the GMO-free seed sector may encounter. Here you can find the full version.

Contamination and cross-breeding possibilities: The vulnerability of seed production and the associated legal framework

Variety preservation, seed propagation and a large part of breeding take place on the field or in open greenhouses, not in strictly isolated laboratories. Seed work therefore takes place in an open system. Professional practice means dealing with this consciously in order to exclude or minimise unwanted cross-pollination or contamination as far as possible. Seed legislation recognises this. It stipulates varietal purity, but accepts varying proportions of deviating types, depending on the species. Cross-pollination must be kept below these levels. With regard to genetic contamination, however, it is all the more important for people involved in GMO-free seed production to avoid cross-pollination or mixing completely.

The more genetically modified plants and first- or second-generation seeds there are in the field and in circulation, the more frequently incidents occur that can lead to widespread contamination. This is especially true if these incidents are only noticed after sowing. The list of examples is already long.

Once genetically modified plants are released and cultivated, contamination with GMOs is possible at all stages of plant breeding and seed production:

- Seed production largely takes place in the open air. If genetically modified plants capable of cross-pollination are grown in the wider vicinity of a breeding garden or propagation area, pollen from the GM plants can be spread by wind or insects, leading to cross-pollination. Wild populations into which genetically modified plants have been cross-pollinated can also lead to (back) cross-pollination with GMOs.

- In most crop species, many seeds or other plant parts remain in the field after harvesting. In subsequent years, these can germinate and contaminate the harvest in the same field or other fields via pollen dispersal. The seeds of some plant species can remain viable in the soil for a very long time and represent a significant source of contamination over the years. This problem is increasing as the earth warms: for

example, ‘volunteer maize’ already survives mild winters in the soil and can germinate the following year.

- Even during the breeding phase, varieties are often grown and tested at different locations. Later, the seeds must be transported to the propagation companies and then from the propagation companies to the trade. During the transport of seeds, as well as during their storage, contaminated trailers, containers or silos pose a risk. In addition, genetically contaminated seeds may be lost during transport, resulting in genetically modified plants growing and flowering along motorways, near ports or railway tracks. These can then cross-pollinate with seed production crops, including via other plants.

- Another risk of contamination is posed by the seed source material used to breed a new variety. This often comes not only from the breeder's own breeding garden, but is also obtained from other breeders or gene banks in order to maintain a diverse gene pool. Breeders must carry out extensive tests, especially for high-risk crops, to determine whether their variety development has been exposed to the risk of genetic contamination – also because information on the location of genetically modified cultivation areas in other countries is lacking or the results of seed inspections are not published or are published too late.

Lack of detection methods

Under current EU GMO law, companies must provide genomic data and detection methods when applying for approval. The planned deregulation of NGT 1 plants would remove this obligation, including the requirement to supply reference material.
Without reliable genetic tests, seed contamination cannot be detected – an especially serious problem because contamination multiplies rapidly in seed systems. If companies no longer provide detection tools, other actors will have to carry the burden of developing methods and financing this essential work.

Threats to zero tolerance for unapproved GMOs

EU rules currently demand zero tolerance for unapproved GMOs in seeds. This principle is expected to remain for unregistered NGTs.
However, without comprehensive transparency – where which NGT plants are grown – and without detection methods that can reliably detect and distinguish between NGT1 and NGT2 changes, verification is not possible. The situation is further complicated by the fact that countries like the U.S. already cultivate unlabelled, non-traceable NGT crops.

Loss of transparency and coexistence measures

Today’s GMO legislation requires coexistence rules and a public register of GMO cultivation sites.
The deregulation plans for NGT1 include no such measures. The existing site register would no longer apply. This would make it impossible to know if NGT1 crops are being grown nearby, hindering seed exchange, limiting breeding progress, and preventing farmers from taking protective measures against unwanted gene flow.

Unresolved liability issues

Current law does not place liability for contamination on the developers or patent holders of GMOs; instead, farmers cultivating GM crops are held jointly responsible. The organic sector will inevitably face contamination risks, especially since NGT crops will remain prohibited in organic farming.
Key questions remain unanswered: How can organic and GMO-free farms protect themselves, and who pays when contamination occurs?

Breakdown of labelling along the value chain

EU GMO rules currently require comprehensive labelling—from seeds to processed food and feed.
If the Commission and Council succeed with their proposal to label only NGT seed, from the field onwards it would no longer be possible to tell whether a product contains genetically modified organisms or not. Transparency for consumers and processors would effectively disappear.

Patents: A growing and structural problem

Although the draft regulation treats NGT1 plants as equivalent to conventionally bred plants, companies continue to pursue patents on them. Deregulation would trigger a significant rise in such patents across Europe, increasing the risk that breeders, seed producers, and farmers could face unintended patent infringements if NGT contamination occurs.
The deeper problem is that NGT-related patents are already constraining conventional breeding: companies reference techniques like CRISPR/Cas in patent applications to bypass existing legal prohibitions. While patent issues within the NGT sector are unlikely to be resolved under deregulation, there are viable legal pathways to address improperly granted patents on conventionally bred plants and to limit the spillover of GMO/NGT patents into traditional breeding – without changing the current legal framework.

Conclusion

The EU Commission's proposal to deregulate NGTs will impose significant burdens and high costs on GMO-free seed systems, with far-reaching consequences for the entire food chain.
The IG Saatgut argues that GMO-free seed is essential for independent farmer-led breeding and for the sustainability transition in agriculture. Therefore, new genetic engineering must remain regulated as genetic engineering – to safeguard seed sovereignty and food sovereignty.

IG Saatgut
Interessengemeinschaft für gentechnikfreie Saatgutarbeit

Non-GMO Seed Production at Risk