

# NEW GENOMIC TECHNIQUES (NGT)

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## New Genomic Techniques (NGT) make it possible to breed faster and in a more targeted manner

Biotechnology is widely used in plant breeding and is widely accepted in society. With New Genomic Techniques (NGT), such as CRISPR-Cas, it is possible to breed even faster and more targeted and thus stay ahead of problems in crop cultivation. Plantum is asking the government to continue the current policy and also create legal scope in the Genetically Modified Organisms (GMO) legislation for the use of NGT.

### URGENCY TO ACCELERATE BREEDING

Everything starts with the plant. Better seeds and young plants contribute to health, well-being and more sustainable agriculture and horticulture worldwide. The Netherlands is a global leader in the field of seeds and planting material. This can largely be attributed to our knowledge about breeding. Our plant breeding and propagation companies provide millions of farmers and gardeners around the world with high-quality seeds and young plants. They are therefore at the basis of all (conventional and organic) cultivation systems and global food supply. Climate change and the emergence of new diseases and pests increase the urgency to accelerate the breeding of new varieties.

### 'CREATING' DIVERSITY

Classic plant breeding is a powerful but inherently slow technology that tackles emerging problems, caused by climate change or new diseases in cultivation, too slowly. Breeders have been using modern genetic and physiological knowledge, or biotechnology, for years now to speed up the breeding process. Breeders 'create' the diversity from which they select by crossing plants and looking for or generating mutants. This biotechnology in selection, such as genetic markers, is widely used and accepted. NGT can further accelerate this process. However, the possibilities of NGT are hampered in Europe by restrictive legislation.

### WHAT ARE NGT?

NGT are used as a targeted mutagenesis method, with which mutations in the DNA can be made very precisely via a snip. For instance, a potato variety can be created that can withstand drought better, or one that is more resistant to diseases and therefore requires fewer plant protection products. The traditional path to such a new variety is to cross different varieties, but this requires thousands of attempts to achieve the same result.

### LAWS AND REGULATIONS NGT

Plantum is pleased that the European Commission recognises that the current legislation for genetic modification, which NGT currently falls under, is neither fit for purpose nor future-proof in light of technological developments. This insight is in line with initiatives in many countries outside Europe to adjust legislation and facilitate the use of NGT. Plantum advocates a continuation of the Dutch efforts in Europe to enable innovations that can be achieved much faster with new methods than with conventional breeding. The European Commission has already indicated that the new methods contribute to achieving the goals of the Green Deal. It is therefore extremely positive that the government is also emphatically committed to knowledge and innovation.



## SAFETY AND FREEDOM OF CHOICE FIRST

The safety of new crops is paramount. In its publications, the European Food Safety Authority (EFSA) has indicated that the use of NGT, which leads to properties that could also have arisen with regular breeding, is at least as safe as regular breeding. EFSA does not foresee any other risks than with conventional breeding, which has a long history of safety. The Genetic Modification Committee (COGEM) came to the same conclusion in 2017. Because of this safe approach, COGEM also advises that plants obtained via targeted mutagenesis be exempted from regulations for Genetically Modified Organisms (GMO).

However, there are some important preconditions that must be guaranteed:

- It is crucial that organic growers retain freedom of choice about (the origin of) the varieties they use. The organic sector in most EU countries chooses not to use mutagenesis methods. Plantum believes that organic producers should retain the option to exclude varieties to which specific breeding techniques have been applied.
- Breeders are able and willing to provide transparency about the use of new breeding techniques, so it is always known whether a 'parent variety' used for crossing was created in such a way. The grower can make a choice based on this. However, breeders can only provide information about techniques that they have used themselves. If material from outside the European Union is used for which no information is available, the breeder cannot give any guarantees about this.
- It is important to guarantee consumer freedom of choice. The chain will have to guarantee traceability, because it cannot be determined from the product itself which breeding method has been used. Freedom of choice must also apply to growers who *do* want to use varieties developed with the new methods. The freedom of choice to use CRISPR-Cas in the EU has never existed since its first description in 1987 and the development of CRISPR-Cas9 in 2002, due to restrictive GMO legislation. The current climate change situation and the need for sustainability require clear political choices to enable the application of these techniques in plant breeding.

## PLANTUM ADVOCATES FOR WIDE AVAILABILITY

Plantum is committed to ensuring that all breeding companies have access to NGT. (Strict) regulation will always work to the disadvantage of small and medium-sized enterprises (SMEs), which often do not have the legal and financial capacity to deal with such regulations. SMEs in particular can benefit from the new techniques, because they are relatively easy to apply and enable companies to realise innovations more quickly.

## PATENTS

The investments of the Dutch plant breeding sector are built on breeders' rights. Breeders thus enjoy a temporary exclusive right to market their varieties. However, other breeders may use these varieties to develop and sell new varieties. This 'breeding exemption' in breeders' rights is unique. In recent years, patents have increasingly been granted on plant material. These patents can complicate or even completely block further breeding. Plantum believes that the patent system poses a threat to the (international) competitiveness of Dutch companies, especially SMEs. Breeders' rights are the primary IP system for the plant breeding sector.



### IN SHORT

- Our internationally operating plant breeding companies have a long-term vision; this requires legal transparency.
- Dutch innovation and biotechnology policy is an essential reason for Dutch and international breeding companies to (continue to) concentrate both their research & development and their economic activity in the Netherlands.
- Additional regulation of breeding methods is not in the interests of the diversity of breeding companies, which is partially why the Dutch sector is so strong.
- The climate objectives and the tasks to make agriculture and horticulture more sustainable create a growing urgency for faster breeding. Farmers and gardeners are eager for, for instance, more disease resistance and better heat and drought tolerance in high-quality plant varieties.
- Thanks to a stable research and innovation policy, our plant breeding companies are able to create new plant varieties that contribute to food security, health, sustainability, greening and climate adaptation.
- Organic cultivation will cover 25% of the agricultural area in the EU by 2030. To encourage sustainability on the remaining area, (modern) breeding is of great importance. As a trade association for 300 companies in the breeding, propagation and cultivation of seeds and young plants, Plantum can contribute to this.
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