
Testbiotech report on risks of New GE organisms published

Recommendation: EU Commission should change its approach

8 November 2022 / Testbiotech was commissioned by the Federation of German Consumer Organisations (Verbraucherzentrale Bundesverband, vzbv) to compile a report on the risks of 'new genomic techniques' (NGTs, also 'new genetic engineering', 'New GE' or 'genome editing') to health and the environment. The report identifies key points important for the regulation of organisms derived from New GE. Testbiotech proposes two pillars for future regulation: first, an assessment of the risks associated with intended and unintended genetic changes. And secondly, an examination of the alleged benefits of these organisms in finding solutions to urgent problems, which would be an intrinsic part of technology assessment. Only if both reviews come to a positive conclusion, approvals could be granted.

Testbiotech warns, that without effective control of releases of New GE organisms, the livelihoods of future generations will be under threat. It is possible that NGT organisms across many species and exhibiting a wide range of different characteristics could soon be released into the environment. Large-scale releases would most certainly increase the likelihood of unexpected and undesirable interactions.

According to Testbiotech, current EU Commission proposals for the future regulation of NGT organisms are divorced from reality. In particular, the Commission cites European Food Safety Authority (EFSA) opinions on NGT plants, but EFSA has never had a mandate to comprehensively investigate the risks of these plants. An in-depth assessment of unintended genetic changes has been omitted, as have assessments of possible interactions of different NGT organisms in the environment.

The report shows that there are specific differences between NGTs and natural processes (or conventional breeding methods) that are easy to overlook, but can have serious consequences. Similar to pollution of the environment with plastics and chemicals, it does not have to be a specific NGT organism that causes the problems; rather, it is the aggregate of different effects caused by multiple, different NGT organisms and their interactions that can be critical. Not only could environmental problems be much more diverse and complex, but they may also persist longer in the environment, and thus impact many future generations.

The new dimension of potential hazards caused by possible releases of NGT organisms could rapidly overwhelm the adaptive capacity of ecosystems. As a result, NGTs may exacerbate already existing human-induced crises such as climate change, and thus contribute to the further destabilisation of ecosystems or worsen certain adverse effects. The sum total of NGT organisms released into the environment should, therefore, be kept to a minimum.

Consequently, Testbiotech strongly advocates the role of technology assessment. Even though NGT processes have huge potential for genetic modification, it is not easy to translate this potential into actual benefits. Guidelines and criteria are needed to distinguish between 'actual benefits' and 'empty promises'. For example, many of the plants and animals that have had their genetic makeup altered with NGTs, have significantly impaired vigour. These drawbacks may possibly only be remedied by lengthy further breeding. Unlike the current regulatory review, a technology assessment can weigh these disadvantages against the claimed benefits, taking into account other influencing factors, such as patents and consumer choice as well as the protection of traditional food production systems.

Overall, the use of NGTs implies a new dimension of potential hazards: the use of tools such as CRISPR/Cas enables a new depth of intervention. This can lead to extreme types of biological

characteristics and unintended genetic changes that would not be expected to emerge in the context of conventional breeding or natural processes. At present, we are seeing a growing number of applications across many species and traits. Many of these are not only restricted to domesticated plants or animals, but there are also many projects working on a broad range of wild species embedded in complex ecosystems, e.g. trees, insects, vertebrates and microorganisms.

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