

GMOs are back
and they're worse than before



This is not a gmo.



The Greens | EFA
in the European Parliament

www.greens-efa.eu

In the European Union, genetically modified organisms are subjected to a specific regulation¹. Before being authorized for planting or used in food or feed, they have to undergo a health and environmental impact assessment by the European Food and Safety Agency (EFSA)², then to be authorised individually by a specific committee and finally, to be labelled clearly as a GMO.

For all the faults with this regulation, it nonetheless allows farmers and consumers to make informed choices. The fact that only one GM plant is currently authorised for cultivation in the EU - a maize - and is grown on a few thousand hectares shows how successful farmers and citizens have been in mobilising against GMOs.

The Greens/EFA Group in the European Parliament has been against the use of GMOs in agriculture from the very beginning and hasn't changed position since.

New techniques...

The agro-industry is far from happy with this state of play, and has been manoeuvring to find ways to shift the balance back into its favour. The past few years have seen the development of new biotechnologies that allow the manipulation of the genome of plants, animals, bacteria and human beings³. They are usually called "new breeding techniques" (NBTs), a term coined by public relations agencies to blur the distinction between conventional breeding and these new biotechnologies in order to avoid falling within the scope of the EU regulation on GMOs. But don't be fooled - these new biotech methods work in the same way as older GM techniques, by **direct interference in cells and genomes**.

When applied to agriculture, these NBTs cause changes that **do not occur naturally**. They carry a risk of collateral damage since they can induce unintended changes in genetic material (in other words, unintended mutations or changes in the genome expression that can cause unwanted changes in the plant). Furthermore, these techniques pose similar and additional risks to the environment (for example, reducing both cultivated and wild biodiversity, increasing pollution linked to the use of pesticides and herbicides or promoting herbicide resistance in wild plants) and to public health as "old fashioned" biotechnologies.



1. Several texts, notably the 2001/18 Directive

2. which has been lately heavily criticized for its shortcomings, and its lack of transparency, notably for not publishing the raw data of the studies they are using

3. Examples of such methods are cisgenesis and oligonucleotide-based techniques.

The list of 7 techniques established by the EU Commission is notably incomplete, as it doesn't take into account most recent techniques, as CRISPR Cas9, the most efficient ones, which attracts all the attention of global seed companies.

...same logic



Supporters of these new biotechnologies claim they will miraculously cure hunger, produce plants that are resistant to drought or floods, help reduce the need for pesticides, and much more. Interestingly, we were promised the exact same things by transgenesis (the technique used to produce what we know today as genetically modified organisms) in the 1990s. Quite apart from the genetic manipulation of seeds, plants and animal in agriculture which Greens refuse on principle, these promises were patently not kept. In fact, regardless of whether it is NBTs or transgenesis, the result remains the same: what they try to impose are herbicide-resistant plants that are designed for use with products such as glyphosate (main component of Monsanto's Roundup), or, worse, pesticide plants designed to produce their own poison to kill pests.

Old wine in new bottles

The use of herbicides has increased throughout the world as a result of the planting of herbicide-resistant plants at the same time as hard-to-control herbicide-resistant weeds have proliferated. Some of these herbicides are highly controversial, arousing significant concerns in terms of their impacts on the environment and human health. Glyphosate, the most widely used herbicide molecule, is for example in the middle of a scientific controversy concerning its carcinogenic properties⁴.

Moreover, complex traits such as drought resistance, which are not embedded in a single gene, are in fact

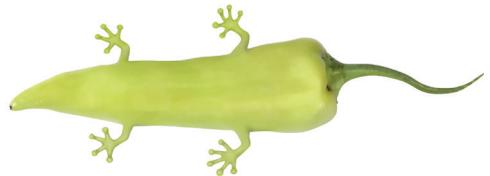
more efficiently obtained through the use of classical breeding methods using traditional and regionally adapted species and varieties. This selective breeding is more time consuming, but takes the plant as a whole and doesn't reduce it to one or some modified genes.

Same risks...

In addition to the risks posed to the environment by the industrialised model of agriculture these plants are intended for, there are concerns about the techniques themselves.

These new techniques modify the genetic material (gene editing) or the way it expresses itself in the organism (epigenetic).

EFSA confirmed that these new technologies, in particular cisgenesis and intragenesis *"can produce variable frequencies and severities of unintended effects. The frequency of unintended changes may differ between breeding techniques and their occurrence cannot be predicted and needs to be assessed case by case"*⁵. Coming from the agency which green lighted more than 60 GMOs for use in food and feed, and a handful for cultivation over the years, this declaration is alarming.



Some of these techniques are cheap, broadly accessible - and very difficult to detect in the final plant. One of them, CRISPR Cas9, has for this same reason recently been included by the US Intelligence

4. IARC, a WHO's agency, declared glyphosate was probably carcinogenic, when EFSA considers it to be safe.

5. <http://www.efsa.europa.eu/fr/efsajournal/pub/2561>

Community on a list of new potential bio terrorism weapons.

Doing biotech research in a lab is one thing, releasing the results in the environment is a different matter altogether. The genetic contamination of other plants is as probable with these techniques as it is with “old style” GMOs, inevitably leading to biodiversity loss. **For organic farmers, this contamination would be especially problematic**, as these new biotechnologies are incompatible with organic principles, not to mention the broader consumer demand for GMO-free food. Yet without traceability or labelling, these techniques could still be imposed on farmers and consumers alike.

... same privatisation of seeds

These techniques, and the resulting organisms, will be patented. This speeds up the privatisation of Life and the monopolization of nature itself by a handful of global agrochemical companies.

Patents mean higher prices and further concentration of an already highly concentrated market. They also constrain further breeding and seed reproduction and would particularly disadvantage small-scale seed breeding businesses and farmers.



Indeed, without proper labelling, farmers and breeders might use patented seeds without even knowing it, and face court cases, as has happened several times in the USA and Canada with current GMOs.

New breeding techniques are GMOs!



New breeding techniques are, clearly and without a doubt, biotechnologies⁶ and as such should be banned in agriculture in the EU as long as the European Commission fails to implement a new assessment of their impacts (health, biodiversity, utility for society, environment, social issues, tax evasion)⁷.

This means they have to be officially defined as “genetically modified organisms” (GMOs) under the existing EU regulation on biotechnologies, contrary to the demands of the agroindustry and some Member States, who are asking for deregulation.

6. As demonstrated by several legal analyses, such as this one by Dr. Spranger, DE: http://bfm.de/fileadmin/BFM/agrogentchnik/Dokumente/Legal_analysis_of_genome_editing_technologies.pdf

7. as required by the European Council in December 2008

“Old style” GMOs

= Transgenesis



Submitted to EU regulation:

Health and environment impact assessment, traceability, labelling

In the field:

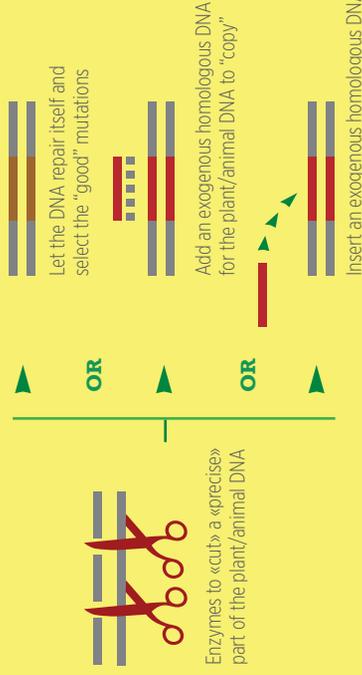
99,9% are either herbicide resistant or pesticide producing plants



New GMOs

This terms covers gene editing (the most promising, explained below), epigenetic but also new ways to use “old style” GMOs

= “Gene editing” techniques lab techniques to modify the DNA of a living organism. Most use enzymes to ‘cut’ parts of the genome. The genome then ‘repairs’ itself. The result is an insertion, replacement or removal of bits of DNA.



Legal status pending:

no specific measures defined

In the field:

In the places where they are already cultivated: herbicide resistant plants.





**ORGANIC
FARM
DO NOT
SPRAY**



**THE GREENS/EFA GROUP
IN THE EUROPEAN PARLIAMENT
IS FIGHTING FOR:**

**The inclusion of these new biotechnologies
in the scope of EU legislation on GMOs;**

No use in agriculture of the plants, animals and micro-organisms created using new biotechnologies without a prior risk assessment, based on independent scientific studies - with enhanced and strengthened risk assessment procedures, taking into account social, environmental, and economic impacts;

Adequate labelling of the products issued from these techniques respecting the consumers' rights to make an informed choice;

The involvement of the European Parliament, which represents EU citizens, in the decision-making process concerning the legal status of these techniques;

A ban on the use of herbicide-resistant species and poison-producing plants in agriculture.

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