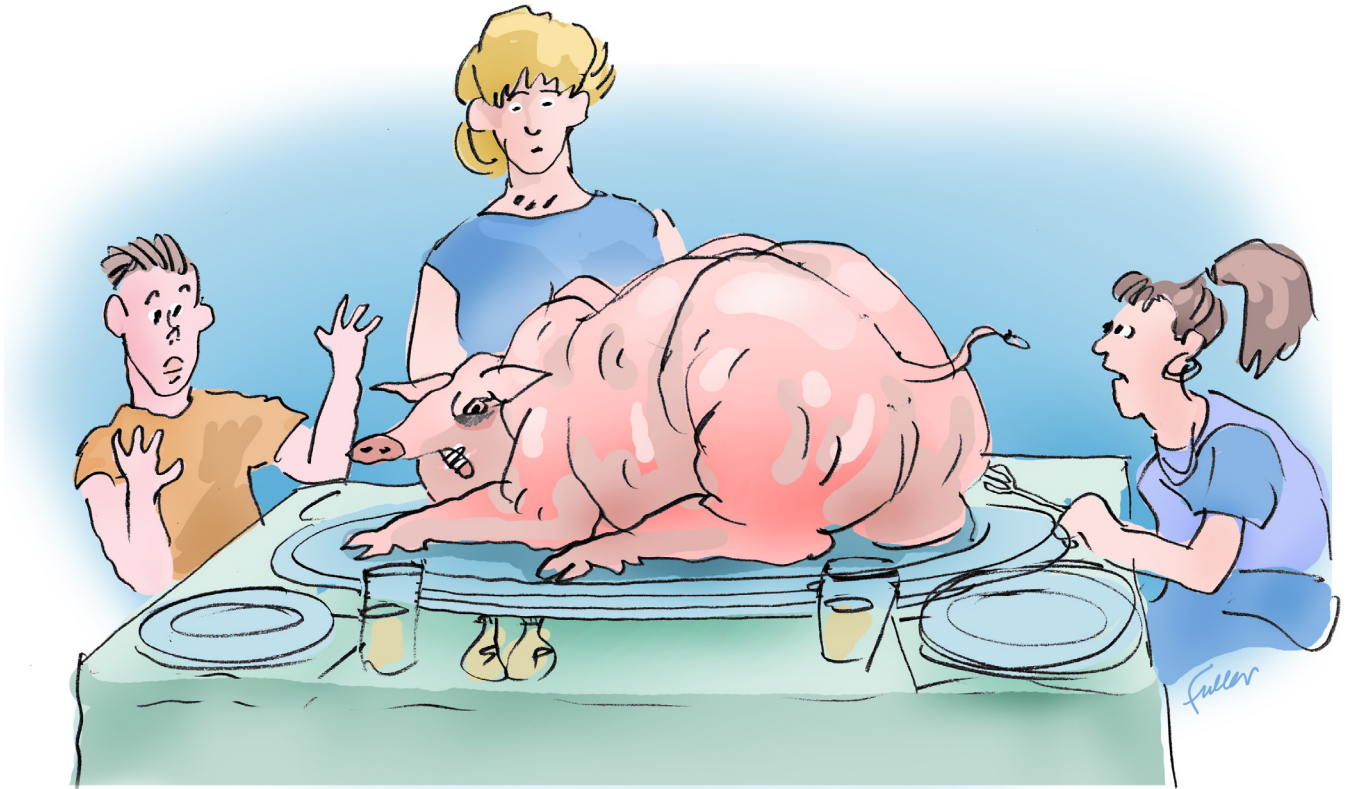


COMING TO YOUR DINNER PLATE SOON?



Did you think GM crops and foods had pretty much gone away in Europe?

NOW THEY'RE SET TO RETURN

If lobbyists get their way, new genetically modified (GM) crops, foods, and farm animals will appear in our fields and on our dinner plates – with few or no safety checks and no labelling.

These new GM crops and foods are produced with so-called gene-editing techniques. Gene-edited organisms already developed include super-muscled pigs (similar to the one in the image above), a non-browning mushroom, and a soybean that produces altered fats.

GMO companies are also planning to market new [gene-edited herbicide-tolerant crops](#), including [wheat](#). These plants are engineered to survive being sprayed with large amounts of toxic herbicides, such as those based on glyphosate.

Gene-editing techniques are often called “New Breeding Techniques” (NBTs). But they are not breeding techniques. They are artificial laboratory GM techniques that result in the production of GMOs (genetically modified organisms).

Gene-editing techniques are not precise and the effects cannot be predicted or controlled. This means that plants developed using these methods could contain new toxins or allergens, or have unexpected effects on wildlife.

We must act now to demand that “new GMOs” continue to be strictly regulated and labelled. Otherwise, farmers and consumers won’t have a choice about whether to grow or eat the new GMOs because they won’t know what is and what is not a GMO.

What can you do?

- Share links to this [leaflet](#) and the web page with more detailed information and [FAQs](#) on social media
- Keep informed – visit www.gmwatch.org and sign up to our free newsletters.
- Write (in the UK www.writetothem.com; in Europe www.europarl.europa.eu/meps/en/home) to your MP and MEPs, asking them to stand up for citizens’ right to choose what they eat and to demand that new GMOs remain strictly regulated and labelled.

Why now?

For the past few years the GMO lobby – agbiotech industry people and lobby groups, patent-holding scientists, and researchers from institutions that received GMO industry funding – has been trying to get gene-edited crops and animals exempted from the GMO regulations in the EU and at national level. The aim is to allow these “new GMOs” to escape the safety checks currently required for all GMOs and to ensure that they do not have to carry a GM label.

But in 2018, in an important victory for the public, the European Court of Justice [ruled](#) that certain gene-editing techniques (called mutagenesis techniques in the case) are indeed [GM](#) and that products of these techniques have to be subjected to the same safety checks and labelling as older-style GMOs.

In response, the GMO lobby is putting pressure on decision-makers to change the rules to exempt gene-edited GMOs from the GMO regulations in the European Union, or to subject them only to “light-touch” regulation. This is the perfect time for the lobbyists to push for a change in the law, as in the wake of the 2019 EU elections, the new Commission is defining its work programme.

What’s at stake in the de-regulation battle?

The EU’s current GMO laws regulate approval, safety checks, traceability, and labelling requirements for GM seeds, food and feed. If new GMOs are removed from the scope of the regulation, we face the threat of untested and unlabelled “hidden GMOs” entering our fields and food supply. But if new GMOs stay regulated, GM seeds and foods will be labelled in the European Union. Farmers will retain their right to choose whether to grow GMOs and consumers will be able to make informed decisions about the food on their plates.

Other battles around gene editing

Despite claims of the naturalness and safety of gene editing techniques, they have been [recognised](#) by the US Intelligence Community as posing a security threat, since they can be used to engineer bioweapons. For example, they can be used to develop viruses that attack people’s DNA, or to engineer “killer mosquitoes”. They can also be used to engineer “[gene drives](#)”, designed to eradicate entire species or wipe out a staple crop.

Are GM foods already in the EU?

A number of GM foods are allowed to be used in human food and animal feed in the EU, but due to public rejection, the food sector has phased them out. The majority of GM foods imported into the EU end up in animal feed. Meat, eggs and dairy from GM-fed animals do not have to carry a disclosing label. The rest of the imported

GMOs are used as biofuels to power cars.

The cultivation of GM crops is allowed in the EU, but more than 17 countries have banned them from their fields. Only one GM maize is grown in Spain.

Are GMOs the answer to our food and farming problems?

Gene-edited plants and farm animals are hyped as the answer to many of our food and agricultural problems. Back in the 1990s, the same promises were made for the first generation of GM crops and foods.

Yet two decades on, 99% of GM crops are [engineered](#) with just two traits:

- Herbicide tolerance, to enable the plant to survive being sprayed with large amounts of toxic weedkillers
- Insecticidal, to kill insects.

GM hasn't provided higher-yielding, more nutritious, more environmentally sustainable, or climate-resilient crops, compared with naturally bred crops already available.

On the contrary, GM has led to the spread of herbicide-resistant superweeds, [escalating](#) herbicide [use](#), and [pests resistant](#) to the insecticidal toxins engineered into GM crops.

The chief ingredient of the Roundup herbicide used with most GM crops, glyphosate, has been classed as a [probable carcinogen](#) by the World Health Organisation's cancer agency IARC.

So we should be skeptical about claims made for "new GM" crops, foods, and farm animals. They are marketing hype and do not reflect what is ready to be grown in farmers' fields.

Are GMOs needed to feed the world?

GM is not needed to feed the world's growing population. We already [produce](#) enough food to feed 14 billion people – more than the 9 billion projected at peak population in 2050. We have thousands of food plants that are adapted to different climate and soil conditions, high

yielding, and resistant to pests and diseases.

In the developed world, 40% of all food is [wasted](#). In the developing world, hunger is widespread. However, hunger is not caused by a shortage of food production, but by poverty – people cannot afford to buy the food that is available in markets, even in the poorest countries. Hunger is a political and social issue that cannot be solved by GM.

A [report](#) on the future of food and agriculture authored by over 400 international scientists and sponsored by the UN, the World Bank, and the World Health Organisation concluded that the best way to feed the world's growing population was agroecology, a system of ecologically responsible farming methods. The report did not endorse GM crops as a solution to hunger, noting that yields were "highly variable", that safety questions persisted, and that the patents attached to them could undermine seed saving and food security in developing countries.

Where do the solutions lie?

Techno-fixes like GM cannot solve complex problems like climate change. And the traits we need for sustainable agriculture, such as plants that are resilient to pests and climate changes, cannot be [obtained](#) by tweaking one or a few genes, as with GM techniques (including gene-editing techniques). That's because these traits have many genes at their basis, working together in complex [networks](#).

We need a climate-resilient system of food production that protects ecosystems and delivers healthy food for all. Locally adapted solutions developed in collaboration between farmers, researchers, and local communities are the real innovative food future.

Are new GMOs safe to eat?

No one knows if new GMOs are safe to eat because no feeding studies have been conducted in humans or animals. However, a [number](#) of animal feeding [studies](#) with the first generation of GM crops [show](#) that the GM diet harmed the animals' health. Ill effects [include](#) organ damage, immune responses, and altered blood biochemistry and gut bacteria.

Are new GMO techniques precise?

Scientists still do not fully understand the effects of gene-editing processes on living organisms. An ever-growing body of research shows that contrary to GMO lobby claims, gene-editing tools are not precise, nor are their outcomes predictable. They produce many mutations (damage to DNA) and [unintended effects](#), not only at [“off-target” sites](#) of the genome (sites that were not intended to be “edited”), but also at the [intended](#) gene-edited [site](#).

What does this mean for the consumer and the environment? Genetic manipulation techniques, including gene editing, bring about new combinations of gene functions and can change the composition of plants in unexpected ways. This means that they could produce new toxins or allergens, or harm wildlife. That’s why EU law requires safety checks on GMOs before they can be used.

Are mutations natural?

Exposure to natural stresses like sunlight can also cause mutations in plants. So GMO [advocates](#) say that mutations are evolutionary and natural, and thus we should not worry about mutations caused by gene-editing techniques.

But in reality, mutation rates in nature are normally [very low](#). Organisms go to great lengths to keep them as low as possible, because many mutations are harmful. This is also why regulators try to minimize our exposure to manmade mutagens such as chemicals.

Just because DNA damage sometimes occurs in nature in response to a stress does not mean it is wise to deliberately cause it in our food plants. We do not know what effects any given mutation in a plant will have on its composition and thus on consumers of the plant or the environment.

A [statement](#) by the European Network of Scientists for Social and Environmental Responsibility draws attention to the risks. It demands that all products of new GM techniques are regulated at least as strictly as older-style GMOs and that they are labelled.

Are gene-edited plants indistinguishable from conventionally bred ones?

In order to patent a GMO plant or animal, the developer has to tell the patent office that the product is unique and constitutes a novel “invention” that could not happen in nature. Yet the same companies and affiliated lobbyists tell the public and regulators that their new GMO products cannot be distinguished from conventionally bred plants.

Both claims cannot be true. No GMO developer company would have an interest in releasing a GMO that cannot be distinguished from a plant that is conventionally bred. That’s because the company needs to protect its patented invention from those who may copy it and from farmers who may try to illegally save and replant a patented gene-edited seed. Thus the company must be able to distinguish its product from a naturally bred plant.

Are new GMOs detectable?

We’re told by advocates of de-regulation that some new GMOs cannot be detected. But this argument is not valid. Currently the EU’s GMO regulations demand that the developer provides a sample of the GMO and a detection method to regulators before the GMO can be authorised. This requirement simply needs to be enforced with new gene-edited GMOs: “No detection method, no market.”

For unauthorized and undeclared gene-edited products for which no prior information exists, detection is more challenging, but possible. Given the resources and a mandate, scientists at GMO detection labs will be able to develop detection methods. This needs to happen now. Also, a global database should be established for all GMO field trials and other releases, with details of the GMOs involved and detection methods.

Conclusion

We must act now to ensure that new GMOs remain strictly regulated and labelled.

For more detailed information and FAQs, visit [the GMWatch site](#).