Thin Ice

GM FREEZE
for a responsible, fair and sustainable food system

the GM Freeze Campaign newsletter *Issue 54 December 2019*

Lack of scrutiny and the (un)level playing field: Brexit uncertainty rolls into a General Election

After the latest Brexit extension, we are now just days away from another General Election and GM Freeze has taken the opportunity to publish our own Manifesto for a Responsible, Fair and Sustainable Food System. Supporters have been using the manifesto to talk to candidates in their area about GM in food and farming, asking them how they plan to provide:

- Protection for people, animals and the environment, through robust GM regulations that allow the use of GMOs in food and farming to be properly scrutinised by politicians and the public.
- A fair deal for farmers, growers, beekeepers and everyone in the food chain, with protection from contamination and clear financial liability for any harm done by growing or using GM crops.
- Informed choice for everyone through clear labelling of food containing GM ingredients or made from GM-fed animals.

Our manifesto, which can be found online at www.gmfreeze.org/GE2019, also supports the principle of public subsidy for public good; the recognition of genetic diversity as one such public good; and the immediate and ongoing implementation of 2018's European Court of Justice ruling that genome editing and many other new forms of genetic engineering are GM and must be regulated as such (*Thin Ice 49*).

Beyond the election, the political factors that could affect the future of GM in the UK were highlighted by two different documents released during October.

Firstly, a leaked official paper from the Government's Brexit department called into question promises of a

… continued on page 2

Deregulation Down Under as new technique highlights problems with CRISPR

The Australian Government has deregulated genetic engineering techniques including forms of gene editing and RNA interference, which can be used to "silence" genes. Removing restrictions designed to keep the food supply safe means that many GM animals, plants and micro-organisms will be able to enter the Australian environment and food supply without any safety testing. They won't be traceable or labelled and could, according to the country's National Association for Sustainable Agriculture (NASAA) be "a disaster for Australia's organic industry".

An Australian Greens motion asking the Australian Senate to disallow the move failed to gain enough support on 13 November leading Louise Sales from Friends of the Earth's Emerging Tech Project to say that *"the changes effectively turn Australia – our ecosystems and our health – into a giant genetic engineering experiment."*

Responding to the move, the European Network of Scientists for Social and Environmental Responsibility (ENSSER) described the Australian Office of the Gene

… continued on page 3

Lack of scrutiny *... continued from page 1*

"level playing field" on EU rules, after Brexit. The paper, which was shared with ministers and leaked to the press, states that the withdrawal agreement re-negotiated by Boris Johnson "leaves room for interpretation" on just what the level playing field with Europe will mean. Under the current proposed deal, key environmental protections that were included in the previous withdrawal agreement are instead listed in the accompanying political declaration which does not have the same legal weight as the agreement itself.

Separately, academics from the University of Sussex raised serious concerns about the mechanisms used to transfer EU rules into UK law after Brexit, including those dealing with GM in food and farming. Key issues raised in the briefing paper by three members of the University's UK Trade Policy Observatory include lack of parliamentary scrutiny, the possibility that the devolved nations will adopt different standards and the capacity of UK bodies to replace key roles played by EU agencies.

It has been estimated that around a thousand different Statutory Instruments (SIs) are being used to transfer EU rules, regulations and procedures into UK law. These are a form of secondary legislation which means that they are not debated in the way that would normally happen in Parliament. In theory, they make slight adjustments to ensure that existing regulations can still operate in the UK after we leave the EU. However, one of the SIs places responsibility for GM food safety assessments currently carried out by the European Food Safety Authority (EFSA) with different bodies in each part of the UK. None of these bodies has the capacity to effectively replace EFSA's role but the delegation of this responsibility to the UK's devolved nations also raises the prospect of England, Scotland, Wales and Northern Ireland all coming to different conclusions about the risks of growing or importing a particular GM crop.

All three devolved governments have long taken a more sceptical approach to GM in food and farming than their Westminster counterparts. In 2015 Scotland, Wales and Northern Ireland all used the EU "opt out" mechanism to ban cultivation of the one GM crop authorised in the EU and several others that were then in the authorisation pipeline (*Thin Ice 38*). GM Freeze would welcome strong GM regulations in any part of the UK but without proper measures in place to prevent contamination, border areas would struggle to retain their GM-free status if GM crops were grown in England. The only way to truly safeguard our farms is, of course, to impose and enforce strict regulations across the whole UK.

Many Brexit SIs transfer significant powers currently held in Brussels to UK ministers, rather than our four parliaments and assemblies. On GM this means that ministers will be able to change rules on sampling and testing for the presence of GMOs and on the level of GM contamination that is allowed in non-GM food, feed and seed, all without proper political or public scrutiny.

We shared our General Election 2019 manifesto online, but the timing of the election announcement made it impossible to get a paper copy out to our supporters in time to contact their local candidates. If you do not already receive our email updates and action alerts, sign up at www.gmfreeze.org/emails to ensure you don't miss the latest developments and opportunities to get your voice heard.

TAKE ACTION

Please keep sharing our two key campaign actions:

- **The *Don't Hide What's Inside* petition to secure our GM ingredient labels whatever happens over Brexit. www.donthide.gmfreeze.org**
- **The poll raising difficult questions about contamination and liability by asking *Who Should Pay to Safeguard our Farms?* www.gmfreeze.org/poll**

Sharing both actions on social media is a great way to help us reach a wider audience, or get in touch on info@gmfreeze.org or 0845 217 8992 if you would like a paper copy of the petition or the poll to use at a public event.

European GMO risks assessments inadequate

The results of a three-year international research project presented to a conference in October highlight serious gaps in the risk assessments that have led to more than 70 GMOs being authorised for import to the European Union (EU) as food and feed, despite opposition from elected Members of the European Parliament (MEPs).

Between 2016 and 2019, the RAGES project (Risk Assessment of Genetically Engineered Organisms in the EU and Switzerland) critically evaluated the work that the European Food Safety Authority (EFSA) and its Swiss counterpart have done to assess the risks of importing new GM plants for use in food production or as animal feed. The results identified a range of concerns that add up to a shockingly inadequate programme of risk assessment. Specific issues raised include:

- When assessing the risks of importing herbicide-tolerant GM crops (which are designed to be repeatedly sprayed with one or more particular weed killers), the agencies did not take account of the herbicide residues likely to remain on the crops when harvested. Animal feeding studies with this kind of crop often used crops that had not actually been sprayed, even though no farmer would pay the premium to grow such a crop if they were not going to spray it.
- Most GM crops now include several different GM traits. These "stacked events" are assessed individually, as if there was no way that they could interact with each other. For example, *Smart Stax* GM maize produces six Bt toxins (intended to kill insect pests) and can also tolerate being sprayed with several different herbicides. Consent was given for Smart Stax to be imported as food or animal feed without any animal feeding studies because studies had been done in the past on each individual trait.

... continued on page 4

Deregulation Down Under ...
continued from page 1

Technology Regulator's claim that the deregulated techniques "present no different risk than organisms carrying naturally occurring genetic changes" as untenable. An ENSSER statement added that "Regulation does not prevent responsible industries from bringing forward safe products that are sought by the public. However, it is essential to provide a series of checks and balances to stop potentially dangerous products from being released into our environment and food chain."

Meanwhile, the Austrian Federal Chamber of Labour (an organisation representing the interests of employees and consumers) issued a statement that supports the European Court of Justice ruling last year that newer forms of genetic engineering are GM and must be regulated as such. The statement supports comprehensive risk assessments, labelling and traceability, saying that "European regulation of these procedures is necessary so that the same rules apply in all EU countries."

The importance of maintaining a comprehensive approach to GM regulation was highlighted in October, when news headlines announced that a "new gene editing tool could fix most harmful DNA mutations". Known as prime editing, the latest genome editing technique cuts only one strand of DNA in order to introduce a new section of genetic code. This contrasts with the much-hyped CRISPR Cas9 process which relies on cutting across both sides of a double DNA strand to make changes.

Writing in the journal *Nature*, the team that developed the new technique describe it as "a versatile and precise genome editing method that directly writes new genetic information into a specified DNA site… [with] …much lower off-target editing than Cas9".

Guardian Science Editor Ian Sample expanded on that comparison, saying that CRISPR-Cas9 "leads to cells with a haphazard mix of edits, including extra chunks of DNA called insertions, or missing chunks of genetic code called deletions." We couldn't agree more but we also have longer memories than those promoting all forms of GMO seem to think. Twenty years ago, we were told that GM was a precise new way to improve plants and animals. More recently CRISPR has been hailed across the globe for its precision and now, already, there is a new pretender to the throne.

So, as we're likely to see many more "new and improved" genome editing techniques before Governments learn to respect, rather than attempting to conquer, nature, it is useful to remember some key points:

- Media hype about every "precise" new tool is inevitably followed over time by evidence that it is not nearly as precise as its promoters would have us believe.
- Precision is not the same thing as accuracy – a stopped clock is very precise, but it is only accurate twice a day.
- Neither precision nor accuracy can promise predictable results. Genetics is about far more than DNA sequences and we are only just beginning to recognise the complex ways in which genes interact with each other and the environment around them.
- Even the most successful of GM traits (herbicide tolerance and insect-killing Bt toxins) are being undone by the power of nature because pests evolve and we know far less about the complexity of ecosystems than we might like to think.

Bad news for Bees and for us in latest evidence on pesticides

A new review of scientific literature, published in October in the journal *Insects*, has found that exposure to glyphosate has a wide range of negative impacts on honeybees, with implications for the long term survival of their colonies. Key concerns included evidence that ingesting the herbicide impairs honeybees' senses and learning abilities. Other noted effects included diminished short-term memory, changes in gut microbiota (microorganisms necessary to keep the bees' digestive systems healthy) and greater susceptibility to both infection and malnutrition.

The bee study comes after years of increasingly bad news for glyphosate, which is heavily sprayed on the most popular "roundup ready" GM crops and has led to the widespread development of glyphosate-tolerant weeds. The GM industry response to

that problem is to create GM crops that can tolerate regular spraying with cocktails of different weed killers. Meanwhile a new report from Pesticide Action Network and the Soil Association shows that even non-GM farming is falling victim to chemical dependency with shocking statistics about the pesticide cocktails affecting our food, soil and water.

The Cocktail Effect is a new report revealing that around a quarter of all food and a third of fruit and vegetables consumed in the UK contain pesticide cocktails with traces of up to 14 different pesticides. In addition, the report showed that mixtures of as many as ten different chemicals with the potential to affect wildlife were found in UK soil and water. The situation is no better outside the UK as a United States Food and Drug Administration report in September found that 84% of domestic fruit, 53% of vegetables and 42% of grains sold to consumers carried pesticide residues.

European GMO risks *... continued from page 2*

- EFSA risk assessments do not consider reproductive health, immune system effects or the impact of eating particular GM crops on the gut microbiome (the extraordinary range of microorganisms that live in our gut and are essential to maintaining good health).

The problem at the heart of the project's worrying findings is that the companies that develop and sell GMOs also fund and control most research projects on their own products. These same companies generate the data that feeds into the approval process and the RAGES project findings suggest that the authorities that should be protecting us are following a "don't look, don't find" approach instead.

The RAGES project is a joint initiative of the European Network of Scientists for Social and Environmental Responsibility (ENSSER), Critical Scientists Switzerland, GeneWatch UK and Testbiotech. It was funded by the Swiss Mercator Foundation. A final set of project results will be published in early 2020.

INTERNATIONAL NEWS

Thailand

Despite pressure from the United States (US), Thailand is holding firm with plans to ban three pesticides, with effect from 1 December 2019: insecticide chloropyrifos and herbicides glyphosate and paraquat. Paraquat has been banned in Europe since 2007. Thai news outlets report that US officials have warned that the bans will interfere with trade but, as public health minister Anutin Charnvirakul is quoted as saying, *"our job is to take care of the people's health."*

United States

The powerful Food and Drug Administration has given the go-ahead for human consumption of GM cottonseed produced with a gene silencing technique (RNA interference) that has raised serious concerns due to the possibility that the molecules which "turn off" genes can survive digestion. The GM cotton has been engineered to have reduced levels of a toxic substance called gossypol in the seeds whilst allowing other parts of the plant to keep producing the chemical which helps guard against pests.

Brazil

The approval and release of new GMOs has risen sharply under the government of Jair Bolsonaro with 22 new GM plants being approved in the first year of the regime, compared with 32 GMOs in the previous three years and 53 between 1998 and 2015. Most of the new GM corps are resistant to multiple herbicides, a doomed response to the increasing prevalence of weeds resistant to the herbicides used on the the first generation of GM crops.

Impossible claims coming our way?

Impossible Foods, the company that is busy trying to convince Americans that GMOs are health foods *(Thin Ice 52)*, has made the first move in a possible bid for the European market. The makers of the controversial meat-substitute Impossible Burger have asked the European Food Safety Authority (EFSA) for permission to sell soy leghemoglobin (SLH) in the European Union (EU). SLH is an iron-containing molecule made from GM yeast and is one of the key additives that makes the Impossible Burger look and taste like meat.

Earlier this year, Impossible Foods defended their decision to switch from non-GM textured wheat protein to GM soya as the main ingredient in the Impossible Burger on sale in the United States. CEO Pat Brown described GM soya as *"the safest and most responsible option"* – a claim that was quickly torn apart by environmentalists and food writers.

GM Freeze is working to help create a world in which our food is produced responsibly, fairly and sustainably. We consider and raise the profile of concerns about the impact of genetic modification. We inform, inspire, represent and support those who share our concerns. We campaign for a moratorium on GM food and farming in the UK. We oppose the patenting of genetic resources.

GM FREEZE
for a responsible, fair and sustainable food system

A referenced version of this newsletter is available online – www.gmfreeze.org/thinice

GM Freeze, Open Space Co-operative, Unit 1, 41 Old Birley Street, Hulme, Manchester, M15 5RF.
info@gmfreeze.org 0845 217 8992

We use an 0845 phone number to protect the privacy of our staff, who work from home. Calls to this number will cost 3p per minute plus your telephone company's Access Charge.

/GMFreezeUK
@gmfreeze
www.gmfreeze.org

Design: www.lathwell.com Printed on recycled paper (100% post consumer waste)