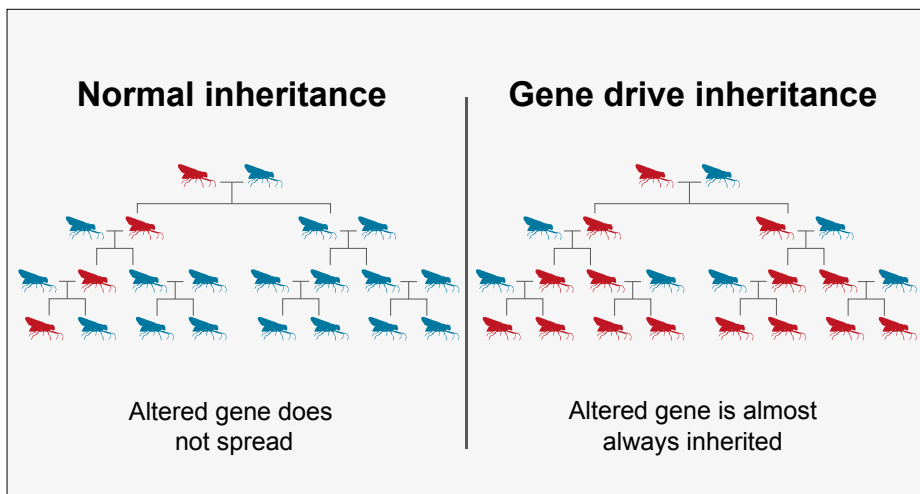


Gene Drives – Opposition to super-charged GM rises

[A report](#), published on World Food Day (16 October 2018), lifts the lid on a new threat to our food and our farms.

Forcing the Farm, researched and produced by ETC Group and The Heinrich Böll Foundation, explains how gene drive technology could entrench industrial agriculture and threaten food sovereignty. The report also highlights the way that promotion of gene drives focuses on altruistic applications, whilst patents on agribusiness uses are being quietly lodged in large numbers.

Gene drives are a form of “super charged” GM technology that overrides natural laws of inheritance to ensure that a particular characteristic is passed on to all offspring. This can very quickly change the genetic make-up of an entire population, including the option to completely eradicate a species. Scientists have proved that the technique can work in a range of life forms, including plants, insects and even mammals. Media headlines wildly promise the extinction of pests or disease-carriers like mosquitoes. Interest, and funding, are on the rise. However, while the hypothetical



potential to rid the world of a terrible disease or troublesome pest makes for good headlines, the agri-tech giants are already getting in on the act and the impact of any gene drive on the ecosystem is incredibly difficult to predict.

Accompanying the report’s launch, over 200 organisations and individuals joined a call for a global moratorium on any release of engineered gene drives. The [Call to Protect Food Systems from Genetic Extinction Technology](#)

is signed by leading figures including seed activist Vandana Shiva, World Food Prize winner Dr Hans Herren, environmentalist and geneticist David Suzuki and Olivier De Schutter, who served as the UN Rapporteur on the Right to Food from 2008-2014. Organisations involved include La Via Campesina International, Global Forest Coalition, African Biodiversity Network, Friends of the Earth and organic groups from around the

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Scientist behind GM potatoes says he got it wrong

Caius Rommens, the scientist who developed GM potatoes now authorised for sale in the US, Canada, Australia and New Zealand, has published a book renouncing his work and calling for the potatoes to be withdrawn from the market.

[Pandora’s Potatoes: The Worst GMOs](#) describes a range of potential health and agricultural risks with a crop that is now widely enough grown in the US to be considered a

risk to non-GM potato supplies. The book has attracted criticism from its author’s former employer, JRR Simplot, but Rommens says that he “never criticized the company about anything. I only criticized one person, and that is me. And I criticized myself not for what I did but for what I failed to see.... I believe that it is important for people to understand how little genetic engineers know, how biased they are,

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Caius Rommens

Brexit: Bills, Consultations and Retained EU Law

Preparations for the UK's departure from the European Union (EU) are gathering pace. The Government's Agriculture Bill, which will set the direction for farming and forms the biggest change to agriculture policy in a generation, is going through the process of parliamentary debate as we write.

GM Freeze [submitted evidence](#) to a House of Commons Environment, Food and Rural Affairs Select Committee inquiry into the bill. Mirroring our evidence to the consultation that took place before the bill was drafted ([Thin Ice 48](#)) we highlighted:

- The importance of genetic diversity
- The need for a robust and transparent process for authorising the use of GMOs and effective measures to prevent GM contamination
- The importance of GM food labelling
- The devolved nations' right to make their own decisions about GM crops

We are supporting bill amendments that will help make our food system more responsible, fair and sustainable. These are subject to significant change as they pass between committees and the two houses of Parliament, so we

are sharing updates and action requests regularly on social media. Please follow us on [twitter @gmfreeze](#) or [facebook /GMFreezeUK](#) and make sure you are signed up to receive our emails by visiting [www.gmfreeze.org/emails](#). If you don't use social media or email but still want to support a better Agriculture Bill, please call us on 0845 217 8992 to discuss ways that you can help.

Away from the Agriculture Bill, we submitted detailed evidence to another five Brexit related Government consultations in October. [Four concerned potential trade deals](#) with different nations and in each we focused on the need to retain high standards on GM regulation and the labelling of food with GM ingredients.

The [fifth consultation covered retained EU law](#) on food and feed safety and hygiene. Retained EU law is supposed to directly replicate the rules we follow as members of the EU, but some aspects have to be rewritten to work as UK law. With this consultation we raised concerns about the UK's capacity to take on the risk assessments currently carried out by the European Food Safety Authority (EFSA) as well as repeating our call to retain GM labelling and respect

Scotland, Wales and Northern Ireland's rejection of GM crops.

Petition takes off but please help keep it flying

Almost 2,000 people have now signed our petition to protect our all-important GM ingredient labels and ensure that post-Brexit regulations *Don't Hide What's Inside* our food. The petition is running mostly online at [www.donthide.gmfreeze.org](#) but we also have paper sheets that some supporters are using to gather signatures in their own communities. If you can help in this way, get in touch on [info@gmfreeze.org](#) or call us on 0845 217 8992. Otherwise, please ensure you have signed yourself and keep sharing the petition online.

TAKE ACTION

Readers who use twitter can now easily let their MP know that voters care about GM and want ALL forms of GM to be regulated after Brexit. You can find our "Tweet your MP" action at [www.gmfreeze.org/safeguard](#) or direct at <https://bit.ly/2OAPUTq>. Keep visiting the campaign webpage too as we will update this action with new messages as things change.

Farming Minster complies with ECJ judgement on gene editing – for now

Following the European Court of Justice (ECJ) ruling in July that controversial new genetic engineering techniques are GM and must be properly regulated ([Thin Ice 49](#)), GM Freeze and GeneWatch UK wrote to Environment Secretary Michael Gove to [demand a halt to Rothamsted Research's trial of plants genetically modified using genome editing techniques](#). Although grown as part of a trial that went through the GM authorisation process, the genome edited plants were treated as non-GM throughout that process so had not been subjected to the appropriate risk assessment or public consultation. Farming Minister George Eustice replied to us in October, acknowledging the impact of the ECJ ruling and confirming that Rothamsted will not be

allowed to continue the genome edited plant trial without additional consent. However, that was far from his final word on genome editing.

During the Conservative Party conference in early October, Mr Eustice told journalists "*We disagree with the judgement the ECJ has come up with. We think gene editing and cisgenesis [GM using genes from the same or a closely related species] is largely an extension of conventional breeding techniques, the likes of which we have had for decades. I think this would be an early candidate for us to depart from the approach the EU is taking.*"

Meanwhile, on the opposite side of the world, Australian state governments clashed with the federal Office of the Gene Technology Regulator (OGTR) and Food Standards Australia New Zealand

(FSANZ) over plans to deregulate new GM techniques. The State and Federal Governments met at the Legislative and Governance Forum on Gene Technology in Adelaide in October with OGTR and FSANZ both recommending that a number of new GM techniques be deregulated. State governments took a different view, leading the meeting to defer any decision to the next forum meeting in a few months' time.

GM Freeze's [Safeguard our Farms](#) campaign calls for robust regulation of all forms of GM in food and farming after Brexit. [We're asking people to tweet their MP to show that voters don't want to open the UK's door to gene editing so if you have a twitter account, please take part at \[www.gmfreeze.org/safeguard\]\(#\).](#)

and how wrong they can be. My story is just an example.”

Caius Rommens worked for Monsanto for five years before joining Simplot, one of the largest potato processors in the world. After thousands of unsuccessful attempts, he eventually combined three commercially-desirable traits in a single potato, but he was also hit by doubts. “I identified some minor mistakes and had my first doubts about the products of my work. I wanted to re-evaluate our program and slow it down, but it was too little too late. Business leaders were involved now. They saw dollar signs. They wanted to expand and speed-up the program, not slow it down.”

One of the key selling points for Simplot’s GM potatoes is that they don’t bruise but Rommens explains that this is not actually true. Rather, the GM trait ensures that any bruises to the potatoes do not discolour. These ‘concealed’ bruises can still accumulate toxins and pathogens but they do not show up as a tell-tale

colour change so processors and consumers cannot identify and remove the damaged tissue.

The book’s publication comes just as US campaign group Non-GMO Project has re-classified potatoes as at high risk of GM contamination. The move means that products made with potatoes will now be subjected to additional scrutiny before than can carry the Non-GMO Project Verified logo. Previously included in their “monitored” category, the change of status reflects the NGO’s view that the GM potatoes that have been grown and sold (unlabelled) in the US since 2015 are a threat to the non-GM supply chain.

GM potatoes cannot currently be grown or imported into the European Union. A trial of GM potatoes modified with stacked traits including resistance to late blight is currently running at the Sainsbury’s Laboratory in Norwich. GM Freeze was joined by 32 other organisations in [objecting to the trial](#).

world. The text reminds Governments and decision makers that “*This moratorium is necessary to affirm the precautionary principle, which is enshrined in international law, and to protect life on earth as well as our food supply.*” GM Freeze has joined the call and we encourage organisations and individuals who share our concern to do the same by emailing genedrives@synbiowatch.org.

In a separate move, GM Freeze joined a group of 28 organisations from across Europe to [urge the European Commission](#) to support an international moratorium on gene drives at a high level international meeting in November. The meeting of Parties to the Convention on Biological Diversity (CBD) was scheduled to take place from 17-29 November, just as this issue of *Thin Ice* went to press. We will report any significant developments in a future issue but you can keep up to date more quickly by following [@gmfreeze](#) on twitter or liking our page [/GMFreezeUK](#) on facebook.

Wasted food could feed the hungry twice over

A third of the world’s food is lost or thrown away each year



Rich nations are wasting more than double the amount of food needed to end global hunger, according to David Beasley, head of the United Nations World Food Programme.

Releasing an extraordinary set of statistics to mark World Food Day on 16 October, Beasley stated that the value of food wasted by wealthy countries is some \$750billion a year. Other shocking statistics include the

821 million people around the world did not have enough to eat in 2017



fact that a third of the world’s food is lost or thrown away each year, while 821 million people around the world did not have enough to eat in 2017. Britain plays its part in this shameful picture, binning an estimated £15billion worth of edible food each year, including the equivalent of three million glasses of milk.

The idea that we need to increase agricultural production to feed a



Britain bins an estimated £15 billion worth of edible food each year

growing population is a popular justification for the development of more GM crops. These figures back up the findings of a peer-reviewed report published last year on GM scepticism amongst NGOs. As stated in the [press release accompanying the report](#), “*Genome editing is not the answer to world poverty, because food shortage isn’t the problem.*”

INTERNATIONAL NEWS



China

A team led by agricultural scientist Yuan Longping of the Qingdao Sea Rice Research and Development Centre has harvested a crop of non-GM salt-tolerant rice grown in east China's Shangdong Province.

Twenty percent of the world's irrigated farmland is contaminated with salt. Rising sea levels and the impacts of intensive agriculture mean that figure is likely to rise and the prospect of crops that can grow in salty water has long been one of the popular, but empty, promises of those promoting GM crops. Now, conventional breeding has beaten them to it.

After starting to grow rice in diluted seawater at home, Yuan Longping, known as China's "father of hybrid rice", moved his technique to the desert and planted a trial crop outside Dubai. Now it is claimed that saltwater cultivation could boost China's rice production by nearly 20%, feeding 200 million people.

Ajay Parida, Executive Director of an Indian research foundation still trying to develop a GM salt tolerant rice is quoted in media coverage of the Chinese development as having said previously that "conventional breeding just takes too long, and this problem is urgent".



United States

In October, [an article in the American Association for the Advancement of Science's popular journal Science](#) questions the motives of government-backed research into the use of virus-carrying insects to genetically engineer crops.

The extraordinary programme, known as Insect Allies, allegedly aims to alter the genes of crop plants by using insects to spread infectious GM viruses that will alter the plants' chromosomes. The US Defence Advanced Research Projects Agency, which is funding the programme to the tune of \$45million, says that the research is focused on crop security, distributing beneficial genes for disease and drought resistance.

However, the international team of scientists and lawyers who wrote the *Science* article warn that the technology could, in fact, be a new bioweapon system. They say that "the knowledge to be gained from this program appears very limited in its capacity to enhance US agriculture or respond to natural emergencies. As a result, the program may be widely perceived as an effort to develop biological agents for hostile purposes and their means of delivery." If true, that would violate the international Biological Weapons Convention.



Burkina Faso

The Burkinabé National Biosafety Agency (ANB) [is reported to have approved](#) what will be the first open release of GM mosquitoes in Africa and the insects involved aren't even designed to reduce the spread of malaria.

The Target Malaria research consortium plans to release male mosquitoes genetically modified to be sterile, in order to test the infrastructure and systems for future releases of different GM mosquitoes. Those future releases would include the use of controversial gene drives (see page 1) to reduce the population of Anopheles mosquitoes, which can transmit the parasite that causes malaria.

All GM releases bring the risk of unintended consequences, but this experiment also risks immediate harm to the local population. Male mosquitoes do not bite humans, but any release of this kind will include some biting females. The researchers working on this project are said to be offering financial compensation to local villagers in exchange for the collection of biting female mosquitoes from their own bodies. As Helen Wallace, Director of GM Freeze member organisation GeneWatch UK said, "*The use of a financial incentive to individuals to expose themselves to biting female mosquitoes, and potentially to malaria, is ethically extremely questionable*".

Allergies to GM crop toxin to be considered

The European Commission has asked the European Food Safety Authority (EFSA) to consider new evidence that the insect-killing toxins produced by GM Bt crops could cause food allergies.

A study on mice earlier this year found that the Cry1Ac toxin produced

by some GM crops was capable of producing an immune system response, including the possibility of extreme and potentially fatal anaphylaxis. The study also suggested that the toxin could be associated with food allergies, bowel disease and

colon cancer.

Jean-Michel Wal, a former member of EFSA's GMO panel, is quoted on the EU Food Policy website www.eufoodpolicy.com as saying that the study has "solid scientifically grounded results".

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.



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

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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.



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