

# Thin Ice



the GM Freeze Campaign newsletter

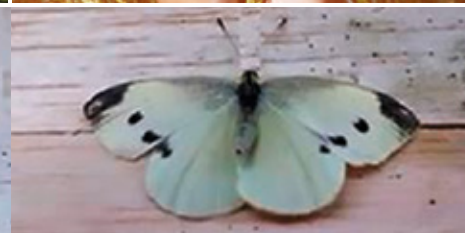
Issue 52 June 2019

## New farming minister ignores mounting objections to support GM field trials

Robert Goodwill was rather an unknown quantity when he replaced George Eustice as UK Farming Minister in March. His support for GM crops has, however, been quickly demonstrated by the approval of three risky GM field trials, despite detailed objections submitted by GM Freeze and many others.

On 9 April Goodwill granted permission for the John Innes Centre's GM [brassica](#) and [wheat](#) trials. A month later he gave the go-ahead for a new five-year field trial of Rothamsted Research's GM [camelina](#).

As reported in [Thin Ice 51](#), GM Freeze submitted [formal objections](#) to all three trials, on behalf of over thirty different organisations. We know that Defra also received a large number of submissions from individuals including many of our supporters. Our combined efforts did have some impact because the consent letters for the wheat and



Example of cabbage butterflies (pinned to insect boards) fed experimental diets 48 hours after emergence: butterfly with deformed wings (left panel, 100% EPA + DHA diet) compared to a butterfly with intact wings (right panel, control diet). Hickson, S.M. et al, 24 March 2016. PLOS ONE journal <http://dx.doi.org/10.1371/journal.pone.0152264.g001>

camelina trials demand more stringent measures to prevent pollen escape than had been suggested in the respective applications. However, all

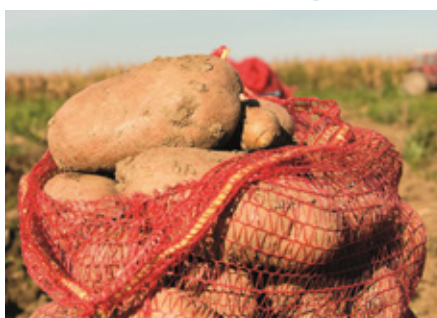
three trials still risk contaminating both crops and wild relatives in the areas in which they are grown. The camelina

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## Stacked traits and gene silencing coming to a field near you?

We reported in March on what was already an unprecedented rush of GM field trial applications, but that was far from the end. By the time [Thin Ice 51](#) came back from the printers, a fourth application had been [lodged with the Department for Environment, Food and Rural Affairs \(Defra\)](#).

The Sainsbury Laboratory's application, which is still pending, is for an extension to their ongoing GM potato field trial programme with new GM lines to be planted in Suffolk and Cambridge. The proposed new trial includes a significant number of different traits affecting different biological functions, but the risk assessment did not consider possible interactions between these "stacked traits". As GM Freeze Director Liz O'Neill said in a press release: "When



*a patient is prescribed more than one medication, their doctor and pharmacist consider the potential for interactions on a case by case basis. Here, a bunch of unrelated genes are being added to a staple food crop and assessed on a simple 'face value' basis."*

The planned potato trial also includes gene silencing techniques that "switch off" the function of particular genes.

Like all forms of GM, these can lead to off-target effects and unintended impacts. There is no agreed protocol for assessing the risk to people or animals who may accidentally or deliberately eat plants modified in this way, so it is not possible to complete a meaningful risk assessment of these plants and they certainly shouldn't be grown in an open field.

Given the level of concern about the plants in the proposed potato trial [our formal objection](#) (signed by an additional thirty organisations) also raised a red flag over The Sainsbury Lab's plans to only monitor the trial site for two years after harvesting the GM potatoes. As we, and many of our supporters who also submitted

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trial could also harm wildlife. Canadian researchers who found that butterfly larvae fed the omega 3 oils produced by these GM plants suffered significant harm (see [Thin Ice 40](#)) have [continued to raise concerns](#) that GM crops of this kind could disrupt the whole ecosystem.

Another very worrying aspect of Defra's decision to allow the new camelina trial hinges on the way that the genetic modifications themselves were described in the application. Regulations state that those applying for consent to release GMOs into the environment must provide significant technical detail on the organisms they plan to release. Rothamsted Research did not do this and now they have been given permission to grow plants with unidentified combinations from over a hundred different genetic elements. In a [press release](#), we described this "pick and mix" approach as "playing games with the regulations".

## Stacked traits ... continued from page 1

objections to the trial, pointed out, anyone who has grown potatoes at home will tell you that they can lie dormant in the soil for several years and pop up as a vigorous new plant when you least expect it.

### We couldn't do it without you

The first few months of 2019 have been something of a whirlwind at GM Freeze, with four different field trial applications arriving in quick succession.

Analysing trial applications to identify specific concerns that can be backed up with solid evidence is a very time-consuming task. We also work very hard to "translate" that scientific information into points that everyone can understand and communicate in their own words, before sharing those plain English messages as widely as possible.

We asked for your financial support

As we write, there is no word from Defra in response to this latest trial application. We will share news of what's decided, and any response we might be able to make, through our email list. Do please make sure you are signed up by visiting [www.gmfreeze.org/emails](http://www.gmfreeze.org/emails).

to fund this work and you responded immediately with GM Freeze friends and supporters donating funds to help oppose these risky and completely unnecessary GM field trials. Many of our supporters are not able to contribute financially so we really appreciate the support of those who can. Thank you – we couldn't do it without you.

If you planned to donate to the cost of opposing GM field trials but other things got in the way, it's not too late – please visit [www.gmfreeze.org/stop](http://www.gmfreeze.org/stop) to give online or you can send a cheque, payable to GM Freeze, to our address at the bottom of page 4.

## Brexit uncertainty highlights need for strong GM regulation

With Brexit day delayed again, the future of the UK's relationship with Europe is far from clear. The importance of securing strong regulation of GM in food and farming is, however, becoming more and more obvious.

The French Ambassador to the United States (US), Gérard Araud, took the opportunity of his retirement in April to warn that "it will be GMOs for breakfast, lunch and dinner" if the British sign a free trade agreement with the US after Brexit.

Things could be little better in the European Union (EU) itself, though, if warnings about a future EU:US trade deal are realised. The Institute for Agriculture and Trade Policy [reported on 15 April](#) that "the U.S. is quite transparent about wanting to block labelling and oversight of currently unregulated newer genetic manipulation techniques."

Back home on 30 April, the cross-party House of Commons Environment, Food and Rural Affairs Committee [published a damning assessment](#) of the parts of the Government's draft Environment (Principles and Governance) Bill that have been published so far. Describing



the proposed environmental protections as a "significant regression" on EU standards, the committee also said that the planned new Office for Environmental Protection (OEP) needed "greater independence and sharper teeth".

We are working to keep on top of relevant political developments and to share useful actions that our members and supporters can take in response to specific proposals and developments.

[Our key priorities](#) throughout all of this remain as follows:

- Rigorous regulation that protects people, animals and the environment: don't drop our standards for a trade deal.

- Protection from contamination: GM polluters should be financially liable for any contamination they cause.
- GM labelling: don't hide what's inside our food.

### TAKE ACTION

Please keep sharing our petition online at [www.donothide.gmfreeze.org](http://www.donothide.gmfreeze.org) and contact us on [info@gmfreeze.org](mailto:info@gmfreeze.org) or 0845 217 8992 if you can take a paper copy of the petition to collect signatures from friends and family, or at a public event likely to attract people who care about what they are buying and eating.

# Industry moves to attack EU GM directive as evidence against new forms of GM mounts up

In April, 22 European business organisations, including biotech lobby group EuropaBio, [signed an open letter](#) to European Union (EU) member states and the European Commission.

The letter is a direct response to the European Court of Justice (ECJ) ruling back in July 2018 that genome editing and a range of other techniques are covered by a key European Directive and so must be regulated as GM (*Thin Ice 49*). The signatories are asking for “a legislative change that provides innovation-friendly rules” on “innovative targeted mutagenesis methods”. Put more simply, they want to change the law so that newer GM techniques can escape regulation.

One of the claims in the letter is that “many gene-edited products may be indistinguishable from products changed by natural processes or with conventional breeding techniques.” However, a 26 March [report from the European Network of GMO Laboratories](#) (ENGL) states that products from new GM techniques can be identified and measured if the intended DNA changes are known and unambiguous. The [text of the industry letter](#) also asserts that “Our goal is to obtain practical and science-based rules ... that foster public confidence and trust” but their recommendations fly in the face of new studies highlighting the need for tighter, not looser, regulation of new GM techniques.

A new [peer-reviewed analysis](#) by scientists including Dr Ricarda Steinbrecher of EcoNexus considered the hazards of both intended traits and unintended changes to plants developed with new GM techniques including genome editing, cisgenesis



(inserting genes from the same or a closely related species) and others. They concluded that the small extent of the DNA changes to be made, or the precision with which a gene editing tool can be targeted to a particular site, is not an indication of safety. All new GM techniques can result in unintended changes and new organisms created by these techniques must be subjected to case by case risk assessments.

One of the key concerns with genome editing techniques is, as we described in *Thin Ice 41*, the possibility of off-target alterations, ie changes to DNA sequences other than those that are intended. A [new study](#), though, finds that even where the DNA cuts are made in the correct location, modifications intended to switch a gene off can instead lead to the production of unplanned proteins. Commenting on the study, molecular geneticist Dr Michael Antoniou said that the findings “add to the increasing number of ways in which gene editing can go wrong”.

Meanwhile, another peer-reviewed paper identified several molecular differences between genome editing and conventional breeding. Published in the journal *Frontiers in Plant Science*, [the review](#) found

that a cell’s own repair mechanisms protect certain parts of the genome so that, with conventional breeding and spontaneous mutations, some regions undergo DNA changes less frequently than others. Genome editing techniques like CRISPR/Cas can bypass these natural protections.

Beyond the molecular level, [research by plant biologists in Belgium, Switzerland and Canada](#) found that attempts to use gene editing to help plants fight off a particular virus actually boosted the virus instead. The researchers used the high profile CRISPR-Cas9 technique in an attempt to create cassava plants resistant to the cassava mosaic virus. When their experiments proved unsuccessful, they looked more closely at the virus and found that, instead of succumbing to the intended effects, the virus had responded in the way that viruses do best and mutated quickly to get around the genetic changes. Rather than CRISPR beating the virus it was nature that had outwitted the scientists.

In May, GM Freeze joined 23 organisations from across Europe to urge candidates for the presidency of the European Union to retain strong regulation of all forms of GM.

## Naturally Impossible

The organisers of the world’s largest natural food trade show have been slammed for allowing Impossible Foods to serve samples of their GM Impossible Burger and not informing those trying the burger that it contained GMOs.

With veganism taking the world by storm, the market for “realistic”

plant-based meat substitutes is ripe for exploitation and the Impossible Burger has received a huge amount of attention for its meaty taste and red blood-like colour. However, the promotion at Natural Products Expo West, which was held in Anaheim, a city outside Los Angeles, in March, was met with heavy criticism from

US Friends of the Earth food policy campaigner Dana Pearls who described it as “deceptive marketing”. Jim Thomas, Co-Executive Director of ETC Group, which tracks new genetic engineering technologies, said the sampling stall was “like inviting an arms manufacturer to exhibit at a peace convention.”

# INTERNATIONAL NEWS



## Australia

On 10 April Minister for Regional Services, Senator Bridget McKenzie [announced](#) a set of amendments to the country's Gene Technology Regulations that deregulate some forms of genome editing. The moves, if confirmed, will place Australia somewhere between the EU's strict regulation of all forms of genome editing as GM and the United States (US) approach that only applies its very limited GM regulation to transgenic organisms, ie those to which DNA from another species has been added.



## Ireland

Membership body the Irish Grain Growers' Group has [called for a ban on GM soya and maize](#), as well as palm products, as part of a move to protect the Irish tillage sector. Linking the call to a new petition on the issue of Brazilian deforestation, the group's statement recognised that the Irish population is beginning to question

the environmental impact of the country's agricultural sector. Noting that up to 75% of the grains used in the recent past in Ireland have been imported, a group statement described shipments of grain from Ukraine, Canada and South America as *"simply illogical"*. The went on to warn that grains imported in this way *"may possibly be currently treated with pesticides banned from Ireland and the EU up to 30 years ago."*



## South Africa

The African Centre for Biodiversity (ACB) has [lodged a detailed and fully referenced objection](#) to plans for three separate permits to sell and cultivate GM maize resistant to a number of powerful pesticides, including glyphosate and 2,4-D. If permits are granted to Corteva (formerly Dow AgroSciences), they will increase use of 2,4-D which has been linked to toxic effects on both humans and the wider environment. Corteva claims to have conducted a thorough risk

assessment but ACB disputes this. ACB Director Mariam Mayet said that *"Corteva has made inaccurate and misleading claims"* and that the company is *"making a mockery of South Africa's scientific and regulatory processes"*.



## Nigeria

The Health of Mother Earth Foundation recently brought together over 100 stakeholders in a conference that rejected calls to allow indigenous foods to be genetically modified. Highlighting the fact that Nigeria's food production challenges will not be solved by GM, the conference called for an urgent review of the country's regulatory frameworks. A statement said: *"What is needed is adequate support for farmers in terms of extension services, credit schemes, storage and processing facilities to reduce wastage, good roads to access markets, and increased access to agricultural land for increased productivity and food security."*

## GM chestnut tree plans cause serious concern

In April, the Campaign to STOP Genetically Engineered Trees joined forces with Global Justice Ecology Project (GJEP) and Biofuelwatch to [release a White Paper](#) detailing key concerns with plans to release GM American chestnut trees.

The American chestnut was once a dominant species in forests in the eastern parts of North America but

it was decimated in the first half of the twentieth century by fungal blight and logging. Researchers at State University of New York's College of Environmental Science and Forestry have developed a GM blight resistant variety of the tree and are hoping for permission to release it into the environment.

The White Paper's authors describe

the project as *"a test case to sway public opinion toward supporting the use of biotechnology for forest conservation"*. They have also expressed deep concern about the fact that this would be the first GM tree planted with the specific intention of spreading freely through forests. Once released, there would be very little chance of halting or reversing its spread.

**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.**



for a responsible, fair and sustainable food system

A referenced version of this newsletter is available online – [www.gmfreeze.org/thinice](http://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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