

Thin Ice



the GM Freeze Campaign newsletter

Issue 22, July 2011

Westminster Coalition issues GM policy, then GM wheat trial mooted

The Coalition Government posted its first GM policy statement on the Defra website Friday, 17 June. GM Freeze thinks while the language may leave room for manoeuvre on GM in the future, the policy falls well short of a ringing endorsement of GM crops.

There is a welcome prioritisation of human health and environmental protection, but the Government needs to demonstrate it really means this by adopting a precautionary approach. This means blocking new GM crops at European level in every instance where

there is scientific dispute or uncertainty. It also means giving a guarantee that no GM crops will be grown in the UK until comprehensive regulations are in place putting full economic and environmental liability on consent holders (biotech companies) and not on farmers.

Since the new policy does not indicate that the Coalition sees GM crops as a means to put agriculture on a sustainable footing, GM Freeze is repeating its call for a transfer of research funding from risky GM projects to agroecology and non-GM

approaches to plant breeding such as Marker Assisted Selection (MAS).

The Westminster coalition is in a difficult position because Scotland and Wales have long had strong no-GM policies. They must also be aware of public rejection of GM food and crops, and GM Freeze is also repeating the call for the Government to make good on its rhetoric about the importance of "clear labelling" by ending the unlabelled use of animal feed in the food chain.

By coincidence Defra announced on 20 June that Rothamsted Research



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at Harpenden has applied to trial GM wheat in the UK in 2012. The GM wheat aims to repel aphids and attract aphid predators to the crop using genetic constructs, which include synthetic sections, mimicking aphid hormones. The impact on neighbouring, non-GM crops from the displaced aphids is unclear, and it does not form part of Rothamsted's research.

The move is puzzling given the lack of a market for GM wheat globally.

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INTERNATIONAL ROUNDUP

Africa

Kenya

In April the International Centre of Insect Physiology and Ecology announced the extension of its successful “push/pull” program, which is already used by nearly 40,000 farmers in East Africa, increasing yields and assisting 300,000 people out of hunger since its introduction in 1997.

The low-cost non-GM approach uses intercropping of desmodium with maize and a border of Napier grass. The desmodium “pushes” crop pests away from the maize while the Napier grass “pulls” them as a desirable nest site. The Napier grass also acts as a natural pesticide, trapping pest hatchlings in a gummy sap and ensuring few survive to adulthood.

In addition to dissemination of the technique to a further 50,000 farmers, the Centre is looking for new “push/pull” plant partners to help in drier, hotter conditions where the grasses used now can struggle. The project leader said, “We hope to have about one million households benefiting from the technology by 2020.”

South Africa

In May a group of organisations lead by the Africa Centre for Biosafety (ACB) submitted a report to the Competition Commission requesting an investigation into Monsanto’s market dominance in the country’s seed market. The report says Monsanto controls 50% of maize seed, putting prices up 45% in the past five years, while during that time prices paid to farmers for their crops have stagnated. ACB’s Director said, “This is typical of Monsanto’s world-wide strategy to lock farmers into using Roundup herbicides, and explains how they control 60% of the market in glyphosate-based herbicides in South Africa. In this way Monsanto continues to reap in billions of dollars profits, while Roundup use around the world is leading to catastrophic consequences for local communities and the environment.”

Uganda

In May farmers rejected using GM seeds saying rather than offering a solution to food challenges in Uganda, or Africa more widely, they cause more problems. The meeting of farmers’ groups noted in particular the potential for detrimental impacts on indigenous seeds and the privatisation of seed ownership. The meeting issued a joint statement saying, “The protection and preservation

of indigenous/traditional seed is fundamental in ensuring food security.”

Americas

Canada

In May new research from Canada’s Sherbrooke University Hospital reported finding whole Bt toxin in the blood of women and clear evidence that it was passed to foetuses. The toxin is the same type produced by GM Bt crops. The women in the study did not work with pesticides or live with anyone who does, suggesting that they acquired the toxins from their diet, which in Canada includes unlabelled GM in food and animal feed in the food chain.

Current regulatory advice from EFSA and the FSA states that no GM protein survives intact in the intestinal tract to enter the blood stream, so the detection of intact Cry1Ab toxin in human blood is of great significance. In a 21 June written Parliamentary answer Anne Milton from the Ministry of Health reiterated the standard advice and said, “[I]t is not clear whether the analytical methods that were used in this study were suitable for identifying the quantity of such low levels in human samples.” However she did not give any indication the Government is taking any action to answer this question or to ensure further studies are carried out to repeat and confirm the findings.

GM Freeze is calling for an immediate halt to GM Bt crop cultivation and imports of GM Bt food and feed until the findings are properly evaluated and further study confirms product safety. See www.gmfreeze.org for further information and action.

Peru

In May the Government passed biosafety regulations aimed at promoting biotechnology research, permitting research, production and domestic trade in GMOs for the first time and placing both research and regulation in the hands of a single organisation (the National Institute of Agrarian Research). Critics fear this raises a conflict of interest and that allowing the GMOs to enter the country will put crops of global importance (like potato) at risk because Peru is centre of genetic diversity for a number of staple crops. The Peruvian Society of Environmental Rights stated GM is not needed for productivity and called for a precautionary approach.

Yet soon after the Congress was due to discuss another bill setting a 15-year moratorium on the entry of any GMOs

into the country, apart from GMOs for research purposes and drugs not available in other forms, so the situation in Peru is unclear.

Earlier in March Peru’s National Institute for Agrarian Innovation said GM papaya was needed to “save” the country’s crop from allele virus (which causes Ringspot, Bunchy Top and Phytophthora). Pilot fields are planned from 2012, aiming to double exports in three years.

However the development of a non-GM ringspot resistant papaya was just announced by scientists in a Phillipine/Australian collaboration published in *Euphytica*. While the plants showed initial mild signs of the disease, researchers reported, “They continued to grow vigorously and produce fruit for 3 years under high disease pressure provided by the infected controls and other susceptible plants. Good quality marketable fruit were produced on these plants. Application of these results should lead to restoration of the papaya industry in virus-infested regions of the Philippines and worldwide.”

Uruguay

In March a study by the University of the Republic (published by *Environmental Biosafety Research*) found GM contamination in maize crops, showing that regulations requiring separation distances don’t work. GM maize has been grown in Uruguay for some time – Mon810 since 2003 and Bt11 since 2004.

Researchers studied five pairs of commercial maize fields where farmers planted GM maize at about the same time as a nearby non-GM crop. In three cases the GM genes were later found in the non-GM crop at a rate of 0.83% 100 meters from the GM field. In one case a Eucalyptus barrier between fields 12 meters tall and 30 meters wide was insufficient to prevent the contamination, and in another case contamination happened more than 250 meters away from the GM field. Government regulations stipulate separation distances should be more than 250 meters, but how much more is needed to be effective remains to be seen (eg, a three-year study by the Hokkaido Department of Agriculture published in 2008 found cross-fertilization in maize at 1200 meters).

The Uruguay study’s lead author said, “These results also show that the current regulation in Uruguay is insufficient.” The Manager of Uruguay’s National Seed Institute said the findings were not representative and “the frequency of GM contamination was very low”.

US

As if US rice farmers didn't have enough to contend with (see TI 13, 16, 17, 20 and 21), in May the Mississippi Rice Council called for a 1 June curtailment of aerial spraying of Monsanto's Roundup (glyphosate) after reports the chemical and Bayer's Liberty (gluphosinate) is either burning or deforming whatever non-GM rice plants aren't killed outright. University of Arkansas field studies report up to 80% reduced yields.

Also in May the Ninth Circuit Court of Appeals directed the US Department of Agriculture to conduct a "rigorous review" of the impacts of GM sugar beets resistant to Monsanto's Roundup herbicide (see TI 19, 20 and 21). The attorney for the Center for Food Safety said, "[The order] cements a critical legal benchmark in the battle for meaningful oversight of biotech crops and food." A spokesperson for Monsanto said the order had little impact on beet growers because the USDA had issued interim measures permitting this year's crop to be planted.

Meanwhile the Obama administration is reported to be backing the unlimited sale of the new Monsanto/BASF drought tolerant maize, which, if approved, would be the first commercialised GM crop designed for this purpose. But the USDA's own draft environmental assessment says the GM variety is nothing special: "The reduced yield [trait] does not exceed the natural variation observed in regionally-adapted varieties of conventional corn ... Equally comparable varieties produced through conventional breeding techniques are readily available in irrigated corn production regions."

This raises clear questions about why anyone would buy more expensive GM seed and be tied to Monsanto's contractual technology use obligations. Pioneer's non-GM drought tolerant maize is already sold in Texas, Colorado, Kansas and Nebraska.

In April Monsanto announced EPA authorisation of its Dow collaboration "single-bag refuge solution" Genuity SmartStax RIB Complete maize, which will be available for the 2012 season. The product combines each company's maize, including multiple "stacked" GM herbicide and insect tolerant traits, with 5% non-Bt maize seed so farmers can comply with refuge requirements

supposed to help prevent insect tolerance developing.

The company said the "refuge-in-a-bag" product, "[S]implifies refuge management by eliminating the structured refuge, which can contribute to timely, more-efficient planting and on-farm productivity."

However a professor in the Department of Crop Sciences at the University of Illinois and lead author of a recent article in *Journal of Economic Entomology* says, "Seed mixtures may make insect resistance management (IRM) risky because of larval behaviour and greater adoption of insecticidal corn." More worryingly he points out, "EPA recently acknowledged that a corn hybrid pyramided [stacked] with two toxins active against corn rootworms does not significantly increase larval mortality... Without this increase in mortality through independent activity of each toxin, the pyramid has much less value for IRM" – that is to say, they may not work any better despite the premium price.

An entomologist from Purdue University concurs, saying that while the increase in farmer compliance with refuge requirements is "no doubt" a benefit of the new product, there are considerable risks: "The concern with refuge-in-a-bag, or seed mixes, has always been sub-lethal exposure with toxic plants and non-toxic plants standing side-by-side. That's one of the ways that resistance can develop in an insect population more rapidly... It's that old adage that whatever doesn't kill you makes you stronger."

A University of Illinois extension entomologist added, "As the number of refuges configured as blocks, strips, or separate fields declines, soil insecticide use should also be reduced. Ultimately loss of soil insecticide products will result in reduced flexibility of producers to effectively manage economic infestations of white grubs, wireworms, and other soil insects." If resistance to the GM options develops, as is beginning with Bt cotton, growers will need these dwindling tools.

Asia

China

Market research company CCM reported to the annual National People's Congress that nearly 70% of Chinese consumers object to GM food. The national committee then debated "Is GM

food an ecology helper or a potential killer?" CCM's Glyphosate China Monthly Report in March 2011 noted that most professionals believe global GM cultivation is still driving the increased demand for glyphosate.

India

A member of the Genetic Engineering Appraisal Committee (GEAC, see TI 13 and 17) resigned following a request from its Co-chair for members to do so if they had a conflict of interests. The GEAC was preparing to determine the testing regime for Bt brinjal (eggplant, see TI 17). P Anand Kumar sat on GEAC as head of the National Research Centre on Plant Biotechnology (NRCPB) under the Indian Agricultural Research Institute (IARI). Sources close to Kumar said he resigned because he was frustrated with "political interference" in the Committee's work, but the Supreme Court's appointee to GEAC Pushpa Bhargava said members had agreed to sign a declaration stating they had no conflicts of interest.

Kumar has been under fire for allegedly being the author of a controversial report submitted by six science academies favouring the immediate release of Bt brinjal. Further resignations are expected.

In May the Environment Ministry announced a Supreme Court-ordered review of all existing field trials of GM crops in India to determine if they meet the safety parameters set by the GM regulator. Several field trails of GM crops are ongoing, including rice, tomato, brinjal and cotton. Aruna Rodrigues (see TI 8, 11 and 13) had petitioned the Court for a full stay on the trials being conducted by various companies alleging they have contaminated local vegetation and poultry.

Also in May the Director of India's Central Institute for Cotton Research wrote "10 Years of Bt in India" noting the promises of the technology may not be materialising in the field:

"Currently, the main issue that worries stakeholders is the stagnation of productivity at an average of 500 kg lint per hectare for the past seven years ... Other concerns relate to the enhanced problems of sap-sucking insects such as leaf hoppers, aphids, whiteflies and thrips on the vast majority of susceptible Bt hybrids. New pathogens such as 'leaf streak virus', Myrothecium

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"It really comes down to customer preference to have a non-GM product in the food chain."

A spokesperson for CBH, Western Australia's largest grain handler, on the likelihood non-GM canola (rapeseed) will continue to attract a premium of Aus\$30-\$40 at least until next season.

Monsanto stopped previous GM wheat development in the UK and elsewhere in 2004 due to lack of markets following rejection by consumers and farmers. Canada's National Research Council announced in April 2011 it has no intention of researching GM wheat, with the President of NFU Canada saying, "Wheat improvements can and must happen without the use of transgenics. GM wheat would spell disaster for Canada's wheat growers." In March the Premier of Australia's largest wheat growing state similarly rejected GM wheat saying, "We are not contemplating GM wheat, and I did not note Japanese consumers would not support GM wheat." (see TI XV)

Defra invites "any person to make representations relating to any risks of damage being caused to the environment by the release" to contact them by 19 August 2011 at: GM Team, Department for Environment, Food and Rural Affairs, Area 8A, 9 Millbank, c/o 17 Smith Square, London SW1P 3JR, or email gm-regulation@defra.gsi.gov.uk, giving the application reference number 11/R8/01.

Earlier in June the Coalition Government responded to a House of Commons Science and Technology Committee Report backing high security measures for GM trials where necessary.

■ *Devolved cultivation update (see TI 15, 16, 19, 20 and 21):* On 21 June Farming Minister Jim Paice gave the following written answer to a Parliamentary question from MP Zac Goldsmith: "The Government do not support the Commission's proposal. We do not believe that it will provide Member States with meaningful discretion to take legally sound national decisions. We are also concerned the proposal would undermine the principle of the Single Market and move away from regulatory decisions being grounded on a science-based safety assessment."

■ *Zero tolerance update (see TI 16, 20 and 21):* Press reports on 24 June indicated the Commission adopted new rules permitting unapproved GMOs in animal feed imports to a level of 0.1%.

INTERNATIONAL ROUNDUP

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and Ramularia started affecting the new Bt hybrids. Insect populations of mealybugs, miridbugs, gall midges, mosquito bugs and safflower caterpillars, which were hitherto unknown as pests, suddenly emerged as concerns after the introduction of the new Bt-cotton hybrids.

"This may have occurred due to the reduction in pesticide usage during the reproductive phase of the crop, which normally would have been used on conventional cotton... Other factors that may have contributed to the sudden upsurge of these minor insect pests is that there are many Bt-cotton hybrids which are highly susceptible to these pests, apart from being susceptible to leaf reddening and wilt."

Europe

In April the Commission reported the results of its survey showing 13 of 27 Member States see no benefit from GM crops.

In May Agriculture Commissioner Ciolos told an interviewer for Romania's daily *Adeverul* that he personally strongly favours traditional agriculture that meets consumer demand for quality food as part of varied diets. He said GM agriculture cannot do this, that European agriculture should not be based on lowest prices regardless of the cost and that the EU should be careful not to adopt policies that undermine the confidence of global markets in European products. He said the US is pressing the EU to adopt a more open approach to GM, and while acknowledging that farmers should be able to choose what to grow, including GM crops, he said this should not be to the detriment of non-GM farmers.

Cyprus

In April legislators unanimously voted into law a Bill making it compulsory to put GM foods on separate shelves in shops, as well as for clear GM labels in three languages, with fines for non-compliance. A 2005 attempt to pass the Bill was foiled by pressure from the US Government.

Hungary

In April the Parliament approved the country's new Constitution, which includes Article XX stating, "1. Everyone has a right to material and mental health; 2. The enforcement of the right mentioned in (1.) will be ensured by Hungary via an agriculture free of genetically modified organisms, via access to healthy food and drinking water...."

UK

In April EU a report on an 18-month study by the Nuffield Council on Bioethics declared agrofuels targets under the EU Renewable Energy Directive "unethical". While not backing a full halt in agrofuel use, the report recommended targets should be lifted until new safeguards are put in place to protect food production and the environment, saying, "Multiple requirements for land use are not able to be met with current technology." Currently 3% of UK road fuel is biofuel ... It is clear that current EU policies as currently produced and incentivised are unsuitable and unethical."

Critics pointed out that instituting certification systems for crops destined for biofuels, as recommended by the report, would not fix the many problems agrofuels pose.

The GM Freeze Campaign is calling on the Government for a Freeze on:

- **The growing of genetically modified plants and the production of genetically modified farm animals for any commercial purpose.**
- **Imports of genetically modified foods, plants, farm crops and farm animals, and produce from genetically modified plants and animals.**
- **The patenting of genetic resources for food and farm crops.**

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