

## Contamination Matters – Why GM crops can't be managed at a national level

June 2014

The European Union is considering a hugely significant change to the way genetically modified (GM) crops are authorised. Proposals for “national opt-outs” appear to allow individual countries to make their own decisions about whether or not to grow GM, but past experience shows that the risk of cross-border contamination is likely to make a nonsense of national bans.

Particularly in the European context of small fields in relatively small countries and the reliance on road and rail transport, contamination, including across national borders, is a real and serious threat that will grow with every new crop approved for cultivation. This means that countries supporting the proposal because they wish to ban GM crops in their own territory cannot be assured that pro-GM neighbours will not disrupt their farming or trade. Furthermore farmers, food producers and exporters are not protected from the costs of these disruptions, nor is the environment protected from the impacts of GM contamination. Without a liability regime in place the decision is being made out of proper sequence, and the risks are high.

This briefing reminds decision makers that GM contamination happens, and it does damage on farms and in international trade. As the source or cause of GM contamination is often never found, or is suspected to be due to natural forces outside human control, farmers, processors, exporters and others are left to fend for themselves in seeking redress for harm caused by products they do not wish to use and actively avoid.

GM contamination matters, and those wishing to exercise their right to grow, sell and eat non-GM crops need protection from this known risk. If those promoting and profiting from GM crops stand by the safety of those products, they have nothing to fear from liability.

The following examples demonstrate how difficult it is to ensure that GMOs are contained while also highlighting the serious economic impact of international GM contamination incidents. Without a clear liability regime in place the so-called “opt out” proposal puts businesses in our food system at risk of a potentially sharp increase in GM contamination costs while also failing to place responsibility for environmental cleanup where it belongs.

### Example 1 – US rice

Between 1998 and 2001 Aventis (acquired by Bayer CropScience in 2002) grew experimental GM rice variety LL601 on test sites in the US. Development was halted after those trials.<sup>1</sup>

In July 2006 Bayer notified the US Department of Agriculture (USDA) and US Food and Drug Administration (FDA) that the company detected contamination of commercial rice supplies as early as January that year.<sup>2</sup> EU authorities were informed of the problem in August 2006.<sup>3</sup>

In November 2006, at the request of Bayer, the USDA deregulated (ie, commercialised) LL601, giving it regulatory approval in an attempt to calm market fears.<sup>4</sup>

However LL601 was not approved for commercial cultivation or import anywhere else in the world. The contamination announcements triggered Emergency Measures in Japan, the Philippines and South Korea introducing strict testing requirements (resulting in the rejection of US rice imports). Russia and Bulgaria banned US rice outright.<sup>5</sup> In the EU the Commission issued Emergency Measures on 23 August 2006.<sup>6</sup> UK authorities dragged their feet implementing emergency testing measures, which lead to legal action.<sup>7</sup>

Efforts to find and isolate contaminated rice stocks were hampered by Bayer's refusal to send reference material to more than a handful of labs. By then the GM rice was found in 24 countries, suggesting that US rice supplies had suffered years of undetected contamination by an

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experimental GMO without any commercial approval.<sup>8</sup> The US rice industry estimated some 41% of its market was affected and proposed measures to try to rid US rice supplies of the GM trait.<sup>9</sup>

To make matters worse in early 2007 Bayer announced that a second experimental GM rice (LL62) was also contaminating supplies, found in US plantings estimated to date back to 2004.<sup>10</sup> Testing labs found a third unidentified LL GM contamination that must have come from one of Bayer's other experimental lines abandoned at least a decade earlier.<sup>11</sup>

The 2007 USDA investigation failed to find the source of the contamination despite 8,500 hours of staff time, visits to 11 US states and Puerto Rico and analysis of some 396 samples. A lack of long-term records was blamed and a host of regulatory failures recorded.<sup>12</sup>

The US authorities decided not to prosecute Bayer, so farmers and exporters were left to fend for themselves to fight for compensation from Bayer. Damages were estimated at US\$1 billion (about 16% of Bayer's 2007 net income), but Bayer's lawyer said, "It's our view most of these plaintiffs didn't suffer market losses in selling their rice."<sup>13</sup>

In August 2009 over 2,000 Arkansas rice farmers filed a complaint in the US District Court detailing seven counts against Bayer including negligence, fraudulent concealment, ultra hazardous activity, absolute or strict liability, punitive damages, statutory negligence and breach of contract. The complaint said that within *four days* of the 2006 announcement of the contamination the decline in rice futures cost US growers about US\$150 million.<sup>14</sup>

EU restrictions on US rice imports were not lifted until April 2010.<sup>15</sup>

The legal cases dragged on until at least March 2011 when a US jury awarded the US company Riceland Foods Inc US\$136.8 million for the damage the contamination did to the business. The award followed several others in US courts, including an award by a jury in Stuttgart, Arkansas for US\$11.8 million in compensatory damages and US\$125 million in punitive damages to Riceland on 19 March – believed to be the highest award in Arkansas history. Other payments included a jury award of US\$48 million to 12 Arkansas rice growers in 2010.<sup>16</sup>

The cause of the contamination was never found.

### **Example 2 – Chinese rice**

Greenpeace discovered rice contaminated with the unauthorised GM trait Bt63 in August 2005. The GM trait, developed by Huazhong Agricultural University and grown in experimental field trials, appeared in a Carrefour store and at a seed market in Wuhan, among other places.<sup>17</sup> In March 2006 it was found in Heinz baby food in Beijing (some 1,500 miles from the source of the contamination).<sup>18</sup>

By September 2006 the Bt63 contamination had spread to foods in the UK, France and Germany. Despite Chinese Government efforts to destroy contaminated crops and prevent the sale of contaminated seeds, further Bt63 contamination was found in imported Chinese noodles in Sweden and Germany in November 2007.<sup>19</sup> On 15 April 2008 EU Emergency Measures came into force against Chinese rice imports.<sup>20</sup> In December 2011 the European Commission revealed that *four* illegal GM rice traits had been found in Chinese consignments at EU ports, and further controls were put in place on Chinese rice imports.<sup>21</sup>

Despite three years of investigation Chinese authorities did not find the cause of the GM contamination and were no closer to stopping it. In fact the problem had grown and spread.

As of February 2014 illegal contamination of Bt63 was still being detected in Chinese imports of food and animal feed.<sup>22</sup>

### **Example 3 – Canadian flax**

In the 1990s Canada and the US approved a GM flax variety "Triffid" for experimental use only. It

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was then withdrawn in 2001 by the Canadian authorities after flax growers complained that their exports would be damaged if the crop was widely grown.<sup>23</sup> The crop was therefore illegal everywhere in the world when it turned up in European food supplies.

In September 2009 GM Freeze wrote to the UK Food Standards Agency (FSA) and then Food and Environment Minister Hilary Benn asking for urgent clarification as to why the UK Government and FSA failed to respond to a major contamination of Canadian flax exports with an unauthorised, experimental GM variety.<sup>24</sup> The FSA claimed there were "no grounds for issuing a Food Alert" in response to the EU Rapid Action Alert.<sup>25</sup>

By October 2009 the contaminated flax had reached at least 30 countries worldwide. In November 2009 the contamination had spread to at least 36 countries, and tests conducted by GM Freeze found the illegal flax in bread sold by Marks & Spencer supermarkets.<sup>26</sup>

The EU resumed imports of Canadian flax in October 2011, but GM Freeze questioned the legality of this move as the contamination was still being detected in food imports.<sup>27</sup> After two years Canadian tests of flax seed were still reporting that one in 25 samples contained traces of the illegal flax.<sup>28</sup> As of 2012 Canadian flax industry officials were still providing updates to EU officials, saying the contamination rates were "on the decline".<sup>29</sup>

The cause of contamination was never explained. Canada's flax growers and seed industry suffered the consequences despite the fact that they had pressed the Canadian authorities to withdraw the GM flax in 2001 precisely to avoid such contamination.

### **Political context**

On 12 June 2014 the European Council (Council) is scheduled to vote on a highly controversial proposal to enable EU Member States to restrict or prohibit the cultivation of authorised GM crops. While this may at first appear to be a step forward, the proposal is riddled with problems and is in fact motivated by a desire to approve more GM crops more quickly rather than to give individual Member States greater control over their agriculture.

This is the third Council attempt to secure such an agreement. The UK Government supports the move, despite the clear opposition of both the Welsh and Scottish Governments to GM agriculture. At the time of writing the proposal is expected to achieve the Qualified Majority it needs to pass.<sup>30</sup>

GM Freeze is opposed to this proposal for a variety of reasons, including:

- It undermines democratic decision making by requiring Member States to negotiate with GM companies with a clear conflict of interest in banning their own crops.
- All options require the indefinite acquiescence of GM companies, among others, to have any legal surety. This means that Member States wishing to ban any authorised GM crop do not have any meaningful assurance that such measures would not at some point be challenged in the courts or under international trade agreements.
- Any acceleration in GM crop approvals and uptake will occur in a context of limited, weak or absent coexistence regulations. Contrary to the usual Polluter Pays principle applied in other industries, there is no liability regime identifying who is accountable for the damage caused by GM contamination.

The Council itself recognises the complexity of adopting GM agriculture, but seems inexplicably reluctant to stand by its own recommendations. In 2008 the Council Conclusions on Genetically Modified Organisms addressed a number of key issues, including the need "to take full account of the specific regional and local characteristics of the Member States, particularly ecosystems/environments and specific geographical areas of particular value in terms of biodiversity or particular agricultural practices".<sup>31</sup> Rushing to approve a legally flawed compromise in order to facilitate more rapid GM crop authorisation and uptake runs counter to this need and puts these characteristics, including GM-free zones, at clear risk.

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## Conclusion

The incidents presented above are not the only examples of GM contamination causing problems in the food, farming and trade systems. Others also belie assurances that GM is a contained, controlled technology, including:

- Escaped experimental GM bentgrass designed for golf courses but now spreading along watercourses in Oregon.<sup>32</sup>
- The court cases stemming from the 2013 contamination of US GM wheat supplies (also in Oregon) that has yet to be explained<sup>33</sup> (but which may have been caused by wild geese<sup>34</sup>).
- The ongoing suspension of Chinese imports of US corn due to the detection of unauthorised GMOs in incoming shipments.<sup>35</sup> Syngenta's refusal to honour the requests from the US National Grain and Feed Association and the North American Export Grain Association to suspend the commercial use of the GMOs in question until China and other US export markets have the chance to grant regulatory approval gives us an insight into how GM companies respond to legitimate requests to curtail sales of their GM products.<sup>36</sup>
- Even when a country bans both GM crops and imports, as is the case in Switzerland, GM plants spread readily along rail and road transport links due to insecure containment leading to the escape of viable seed.<sup>37</sup>

The examples presented here all have one thing in common: the farmers and other businesses caught up in the contamination incidents had to choose between carrying the losses and cleanup costs themselves or going to court against powerful companies because there is no clear means to hold the GM industry liable for the environmental or economic damage done by their products.

Europe must learn from this experience rather than repeat the mistake and reject the proposal for so-called national opt-outs. If the rights of those who choose to avoid GM are to be respected, we need protecting from GM crops, and that protection needs to be in place before those crops are sown.

## Notes

<sup>1</sup> Coextra.eu, 2006. "US Department of Agriculture Deregulates GM Rice LL601" (now cached)

<sup>2</sup> USDA APHIS, 24 November 2006. "USDA Deregulates Line of Genetically Engineered Rice"

<sup>3</sup> UK FSA, 1 September 2006. "Testing to be Carried Out for Illegal GM rice"

<sup>4</sup> USDA APHIS, 24 November 2006. *Opt cit*

<sup>5</sup> Greenpeace and GeneWatch UK, undated. "US GM Rice Trials Contaminate World Rice Supplies"

<sup>6</sup> Commission Decision (2006/578/EC) on emergency measures regarding the non-authorized genetically modified organism LL RICE 601 in rice products (notified under document number C (2006) 3863).

If food or feed supplied within the EU does not meet the EU safety and legal requirements, (for example because it contains unauthorised GMOs) the EU can introduce Emergency Measures under Article 53 of the General Food Law – EC Regulation 178/2002. These Emergency Measure often seek to prevent the import of further contaminated products and require EU Member States to take action to verify the absence of contaminated products already on the market (eg, through testing of products already on sale).

<sup>7</sup> GM Freeze, 31 July 2010. *GM in The Dock: US Courts step in where regulators fail - Briefing III: Bayer brought to book for contaminating rice* for detail

<sup>8</sup> Save Our Seeds, undated. "The illegal Release of Bayer Crop Science's GM Rice LL601"

<sup>9</sup> US Rice Federation, undated (noted as 28 November 2006 by Save Our Seeds and 29 November 2006 by docuticker.com). "US Rice Industry Recommendations to Reestablish Supply and Marketability of US Rice"

<sup>10</sup> USDA APHIS, February 2007. "USDA Provides Update for Farmers on Genetically Engineered Rice"

<sup>11</sup> *Washington Post*, 6 March 2007. "Rice Recalled Over Gene Contamination"

<sup>12</sup> USDA APHIS, October 2007. *Report of LibertyLink Rice Incidents*

<sup>13</sup> Bloomberg, 15 October 2008. "Bayer Avoided Class Actions, Faces 1,200 Rice Suits (Update 1)"

<sup>14</sup> ricelitigation.com, undated. "Arkansas Rice Farmers File Complaint Against Bayer CropScience - Genetically engineered rice eliminated rice markets and reduced farmer's income" (now cached)

<sup>15</sup> Reuters, 19 April 2010. "UPDATE 1-EU lifts restrictions on US rice imports – Official"

<sup>16</sup> Arkansas Business, 19 March 2011. "UPDATE: Riceland Awarded \$136.8 Million In Suit Against Bayer CropScience"

<sup>17</sup> European Commission, 12 February 2008. "Commission requires certification for Chinese rice products to

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stop unauthorised GMO from entering the EU”

<sup>18</sup> Greenpeace and GeneWatch UK, undated. “Illegal Rice Bt63 from China Contaminates Food Products”

<sup>19</sup> *Ibid*

<sup>20</sup> European Commission, 12 February 2008. “Commission Requires Certification for Chinese rice Products to Stop Unauthorised GMO from Entering the EU”

<sup>21</sup> European Commission, undated. *Final report of an audit carried out in china from 29 March-8 April 2011 in order to evaluate the control systems for genetically modified organisms in respect of seed, food and feed intended for export to the EU*. Ref DG(SANCO) 2011-6208 - MR FINAL

<sup>22</sup> UK FSA, February 2014. “February 2014 update on the Animal Nutrition Section of the Standing Committee on the Food Chain and Animal Health”

<sup>23</sup> Canadian Grain Commission, 2010. “Background Information on Genetically Modified Material Found in Canadian Flaxseed”

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Canadian Biotechnology Network, undated. “Learn the Lesson of Flax Contamination”

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AgBioForum, 2012. “Economic Implications of Low-level Presence in a Zero-tolerance European Import Market: The case of Canadian Triffid flax”. *AgBioForum*, 15(1), 21-30

<sup>24</sup> GM Freeze, 14 September 2009. “Illegal GM Contaminates Flax - UK fails to respond”

<sup>25</sup> Letters to GM Freeze from FSA, 18 September 2009

<sup>26</sup> GM Freeze, 5 November 2009. “Illegal GM Flax Found in UK Bread – FSA fails to protect consumers”

<sup>27</sup> GM Freeze, 17 October 2011. “EU Imports of Canadian Flax Resumed - Legality questioned”

<sup>28</sup> AgCanada.com, 12 October 2011. “Flax Industry Sees ‘Good Progress’ Against Triffid”

<sup>29</sup> *Manitoba Co-operator*, 29 March 2012. “CDC Triffid Contamination on the Decline”

<sup>30</sup> Further detail about the current proposal and previous versions is available at

[www.gmfreeze.org/actions/42/](http://www.gmfreeze.org/actions/42/)

<sup>31</sup> Council of the European Union, 4 December 2008. “Council Conclusions on Genetically Modified Organisms – 2912<sup>th</sup> Environment Council meeting”

<sup>32</sup> Snow AA, 2012. “Illegal gene Flow from Transgenic Creeping Bentgrass: The saga continues.” *Molecular Ecology*, 21: 4663–4664

<sup>33</sup> *The Oregonian*, 20 May 2014. “Critics Appeal to USDA Year After GMO Wheat Found in Oregon: Food safety roundup”

<sup>34</sup> *Ottawa Citizen*, 22 July 2013. “Pooping Canada Geese May Spread Genetically Modified Wheat, Documents Show”

<sup>35</sup> Reuters, 14 February 2014. “Cargill to Reject for Export Crops with New GMO Syngenta Corn Trait”

and

RT, 12 April 2014. “US Corn Exports to China Drop 85 percent after Ban on GMO Strains – Industry report”

<sup>36</sup> *Ibid* (Reuters)

<sup>37</sup> Schoenenberger N and D'Andrea L, 11 September 2012. “Surveying the Occurrence of Spontaneous Glyphosate-tolerant Genetically Engineered *Brassica napus* L. (*Brassicaceae*) along Swiss Railways”. *Environmental Sciences Europe* 2012, 24:23