



# Calendar of Calamities - 2000

## Biotech's "Generation One" - *Travails of a Misspent Youth*

*The RAFI Revue ("tongue-in-cheek") of the scientific, political and media disasters that struck the Agbiotech industry since the BioSafety Protocol was adopted in January.*

### January, 2000

- ❑ **Soiled reputation:** As delegations readied for the Montreal biosafety meeting, US and Venezuelan researchers confirmed that the *Bt* toxin in transgenic maize could (contrary to industry expectations) escape into the soil killing larvae up to 25 days after the break-out.<sup>1</sup>

### February, 2000

- ❑ **Hard to resist:** Canadian scientists acknowledged that Monsanto's *Roundup*, Cyanamid's *Pursuit*, and Aventis's *Liberty* herbicides lost their effectiveness against weeds only 2 to 3 years after an Alberta farmer planted the companies' GM canola seeds.<sup>2</sup>

### March, 2000

- ❑ **Vowel language:** A long-suppressed U.S. Government memo dating to 1993 revealed an experiment in which 4 of 20 female rodents fed the *FlavrSavr* (a GM tomato now owned by Monsanto) suffered gross stomach lesions.<sup>3</sup>
- ❑ **"Play possum" penis plot:** New Zealand scientists proposed to develop GM carrots engineered to sterilize possums when eaten. Possums are threatening the country's crops.<sup>4</sup> Scientists pooh-poohed concern that the carrots might have the same effect on people, and insisted the carrots could be kept separate from the human food chain if necessary.
- ❑ **The "Which Blair Project":** Tony Blair reversed his position of a year earlier ("the Prime Minister is very strongly minded that these [GM] products are safe.") and told readers of *The Independent* that "there is no doubt that there is potential for harm from GM food."<sup>5</sup> Further flip flops are widely predicted.

### April, 2000

- ❑ **Weevil wars:** It was found that GM cotton that "volunteered" in GM soybean fields may be bringing the dreaded cotton boll weevil back into the USA as a major pest.<sup>6</sup>
- ❑ **A-maize-ing pace:** American maize growers were shunning GM seeds because their 1998/99 exports to Europe had dropped to 137,000 tonnes from 2 million tonnes one year earlier.<sup>7</sup> The announcement came on the heels of media reports that major potato processors and fast-food chains were warning growers to avoid GM potatoes.

### May, 2000

- ❑ **"Safe" ... wherever they are?** GM seeds were routinely - though accidentally - shipped to Europe by U.S. and Canadian seed companies who couldn't seem to keep their conventional seeds separate from their GM lines.<sup>8</sup> In the following days, the sloppy inventory management problem spread throughout Western Europe as country after country found their fields contaminated with illegal and unwanted GM crops. (New Zealanders were assured that such stock management problems could never occur with carrots.)
- ❑ **"Safe" ... whoever they are:** Monsanto advised U.S. officials that it had detected an unidentified strand of DNA making "mystery guest" appearances in its GM soybeans, Monsanto assured officials that the unknown DNA was perfectly safe (and was not a virus playing "possum").
- ❑ **German Bee Bellies:** A researcher in Saxony found that a gene had transferred from genetically engineered rapeseed to bacteria and fungi discovered in the gut of honeybees. Industry had previously claimed such a transfer was highly unlikely or impossible.

### June, 2000

- ❑ **Spider man:** A "jumping gene" being used in genetic engineering has crossed the species barrier at least seven times, including one jump between flies and humans. If organisms modified using this footloose gene are released, there is risk of further unexpected jumps.<sup>9</sup> (New Zealanders were assured the gene would not be used in developing transgenic carrots).
- ❑ **"Safe" ... whatever they are:** The New Zealand Government admitted that there were at least 100 illicit GM crop experiments underway in the country.<sup>10</sup> After checking on half the experiments, the Government announced that (as with Monsanto) everything was okay (and that none of the experiments could possibly involve either possums or carrots).

### July, 2000

- ❑ **No safe refuge:** Non-GM maize "refuges" planted by farmers near their GM maize fields in order to slow resistance to the bacterial toxin in the GM fields just don't work. The vulnerable insects in the refuge plots refuse to breed with the resistant insects from the larger GM fields. (Possums, however, are understood to find the corporate designed plots to be ideal breeding grounds.)
  - ❑ **Wander-lust?** A large-scale study of the UK's oilseed rape crop and indigenous weedy relatives proved that crosses can occur and that traits such as GM herbicide-tolerance could leap to weeds.<sup>11</sup>
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- ❑ **Still mad:** UK authorities reported a new case of Mad Cow disease in one cow born after stringent new controls were established in 1996.<sup>12</sup> Public distrust of government and scientists over GM crops in Europe began with their failures in handling Mad Cows.

#### August, 2000

- ❑ **And madder still:** Human deaths from Mad Cow Disease in the UK were reported to have increased markedly in the first half of 2000 compared to 1999. There were 15 deaths to August 2000 compared to only 18 in all of 1999.<sup>13</sup>
- ❑ **The real Golden Rice:** A U.S. university study of "sticky" rice varieties in China and the Philippines showed that planting a number of diverse varieties increased yields by 89% while reducing disease by 98%. Their conclusion: diversity outperforms genetically uniform GM varieties.<sup>14</sup>
- ❑ **Better flee butterfly!** - Researchers in Iowa (USA) confirmed a controversial Cornell study proving that GM maize is a threat to Monarch butterflies. Industry had disputed the earlier Cornell findings.<sup>15</sup>
- ❑ **Possum labels?** - Bowing to public pressure, both New Zealand and Australia announced they would require labeling for almost all GM foods. This brought the two countries close to Europe and further isolated Canada and the USA who still oppose labeling.<sup>16</sup>

#### September, 2000

- ❑ **Taco bulls:** A GM maize variety ("Starlink") banned in the USA for human consumption (because of fears of allergic reactions) but permitted as a livestock feed, showed up in taco shells served at Taco Bell restaurants. The Aventis variety raised new concerns about industry's and government's capacity to regulate and manage GM products.
- ❑ **Golden fleeced:** The May surrender of the public sector's Golden Rice technology to AstraZeneca due to fears that the Vitamin A enhanced GM cereal contravened up to 105 intellectual property arrangements was shown to be false. At most 11 patents could be implicated and all would likely be surrendered upon request.
- ❑ **"Safe" ... whatever part it is?** U.S. researchers warned of a loophole in biosafety regulations for GM crops such as tomatoes and potatoes where the rule of "substantial equivalence" applies only to the edible portion of the plant and neglects changes that might occur in roots or leaves. Failure to test for significant genetic alteration of the inedible parts could risk the environment they warned.<sup>17</sup>

#### October, 2000

- ❑ **Power Ranger epi-needles:** The Taco Bell scandal spread to Kellogg's corn flakes as the giant cereal company closed down one plant for fear that the illicit GM StarLink maize had infected breakfast cereals. (StarLink was approved for animal feed but not for human consumption.) In a panic, the White House sent emissaries to Japan and Europe to try to calm concerns that Aventis's "Starlink" had illegally entered their countries. Consumers joked that breakfast cereal makers would have to give away epi-needles or epi-pens (injections to treat anaphylactic shock) in cereal boxes instead of Power Rangers or StarWars toys, for fear of allergic reactions in children.<sup>18</sup>
- ❑ **Super sugarweeds:** German researchers reported that a GM sugarbeet designed to resist one herbicide accidentally acquired resistance to a second herbicide. EU biosafety rules do not permit double-resistance because of the increased possibility of gene diffusion into weeds and the creation of superweeds.<sup>19</sup>
- ❑ **Slow learners:** Mad Cow disease = the food crisis that sparked distrust of scientific judgement and government regulatory competence, appeared to be taking hold in France with new reports of diseased animals.<sup>20</sup>
- ❑ **Possum patent policy:** A policy change that would have allowed the world's largest agricultural research network devoted to Third World food security to patent genes and gene sequences was turned down when the Consultative Group on International Agricultural Research (CGIAR) met in Washington. The move would also have encouraged a shift toward GM crops.<sup>21</sup>

#### November, 2000

- ❑ **Unethical monopolies:** The first meeting of the UN Food and Agriculture Organization's Ethics Panel (a group of world-renowned agronomists and ethicists) concluded that GM crops are risky, Terminator technology is immoral; and that patenting genes and other genetic material leads to crop genetic erosion and unacceptable monopoly.<sup>22</sup>
- ❑ **Biotech's billion dollar mistake:** With the Aventis "Starlink" scandal spreading to hundreds of food products and companies, the company estimated that its clean-up costs would be less than \$1 billion. Then the GM maize turned up in Japan and Korea ...<sup>23</sup>

#### December, 2000

- ❑ **Montpellier's Monsanto rescue:** The world's "biocrats" gathered in France to debate biosafety rules and rescue Monsanto. Never before have so many gathered to debate biosafety for so few! In essence, the \$2.5 billion GM seed market involves 4 major industrial crops (soybean, maize, cotton and canola) grown in 3 countries (the US, Argentina, and Canada accounted for 98% of the total GM area in 2000). In 1999, Monsanto's GM seed traits accounted for over four-fifths of the total world area devoted to GM crops.<sup>24</sup> Demand for GM seeds almost flattened in 2000 with an increase of only 8% after years of doubling and redoubling. Analysts predicted that, at least until 2003, demand would remain flat or decline. In other words, the purpose of Montpellier was to rescue Monsanto, the USA, Canada and Argentina from their GM blunder!
- ❑ **Possums' "pay"-TV:** Australian researchers may have found the answer to New Zealand's possum problems. Reports earlier in the year that Aussie possums were dropping like flies from above-ground cable TV wiring has stirred speculation in the island country that a similar emphasis on overhead wires could eliminate the need for GM carrots.

## Watch for RAFI's "Generation 3" Communique

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- <sup>1</sup> 'Toxic Leak', *New Scientist*, 4 December 1999, p. 7.
- <sup>2</sup> 'Resistance is useless', *New Scientist*, 19 February 2000, p. 21.
- <sup>3</sup> Edwards, Rob, 'Is it or isn't it?', *New Scientist*, 4 March 2000, p. 5.
- <sup>4</sup> Graham-Rowe, Duncan, 'Possums on the Pill', *New Scientist*, 4 March 2000, p. 18.
- <sup>5</sup> Editorial, 'Just give us the facts', *New Scientist*, 4 March 2000, p. 3.
- <sup>6</sup> Coghlan, Andy, 'Pocket of resistance', *New Scientist*, 15 April 2000, p. 17.
- <sup>7</sup> 'Maize malaise', *New Scientist*, 15 April 2000, p. 17.
- <sup>8</sup> Coghlan, Andy, 'Sowing dissent', *New Scientist*, 27 May 2000, p. 4.
- <sup>9</sup> Edwards, Rob, 'Look before it leaps', *New Scientist*, 24 June 2000, p. 5.
- <sup>10</sup> 'Red faces all round', *New Scientist*, 10 June 2000, p. 5.
- <sup>11</sup> Sample, Ian, "Modified crops could corrupt weedy cousins", *New Scientist*, 15 July 2000, p.6.
- <sup>12</sup> *New Scientist*, "Young, nut Mad", July 8, 2000, p.5.
- <sup>13</sup> *New Scientist*, "CJD creeps up", 12 August 2000, p.19.
- <sup>14</sup> *New Scientist*, "Triumph for Diversity", 19 August 2000, p.21
- <sup>15</sup> Kilman, Scott, "Modified Corn a Threat to Butterfly, Study Says", *Wall Street Journal*, August 22, 2000.
- <sup>16</sup> *New Scientist*, "Stick a Label on it", 5 August 2000, p.5.
- <sup>17</sup> Coghlan, Andy, "Killer Tomatoes", *New Scientist*, 23 September 2000, p.9.
- <sup>18</sup> *New Scientist*, "Shells off the Shelves", September 30 2000, p.5.Noelle Mennella, PARIS, Nov 9 (Reuters) .
- <sup>19</sup> MacKenzie, Debora, "Stray genes highlight superweed danger". *New Scientist*, 21 October 2000, p.6.
- <sup>20</sup> MacKenzie, Debora, "La folie francaise". *New Scientist*, 28 October 2000, p.6.
- <sup>21</sup> RAFI attended the CGIAR meeting in Washington October 23-27 and participated actively in opposing the draft "New IPR Guiding Principles".
- <sup>22</sup> FAO, Panel of Eminent Experts on Ethics in Food and Agriculture, First Session, Rome, 26-28 September 2000.
- <sup>23</sup> Noelle Mennella, PARIS, Nov 9 (Reuters).
- <sup>24</sup> *Monsanto Press Release*, Feb. 10, 2000.