

“We blew it”

It is surprising what US presidents say after they leave office! In a keynote address for World Food Day on 23 October 2008, former US President Bill Clinton said:



“We need the World Bank, we need the International Monetary Fund, we need all the big foundations, we need all the governments to admit that for 30 years we all blew it, including me, when I was President. We blew it. We were wrong to believe that food is like some other product in international trade. And we all have to go back to a more environmentally responsible, sustainable form of agriculture.”

Well, it's a start. But what he means by “a more environmentally responsible, sustainable form of agriculture” may well be very different from what we in GRAIN mean by the phrase...

Fishy business

A nine-year study by the University of British Columbia in Canada has found that 90 per cent of small fish caught in the world's oceans every year are processed to make fishmeal and fish oil to be used in animal feed. Factory-farmed fish, pigs and poultry are consuming 28 million tonnes of fish a year.



Sardines on the slab

Senior researcher Jacqueline Alder said: “Society should demand that we stop wasting these fish on farmed fish, pigs, and poultry. Although feeds derived from soya and other land-based crops are available and are used, fishmeal and fish oil have skyrocketed in popularity because forage fish are easy to catch in large numbers and, hence, relatively inexpensive.”

Dr Ellen Pikitch, executive director of the US-based Pew Institute for Ocean Science, which funded the research, said: “It defies reason to drain the ocean of small, wild fishes that could be directly consumed by people in order to produce a lesser quantity of farmed fish.”

GM dwindle

A study published in November by the Austrian government identified serious health threats linked to genetically engineered (GE) crops. In one of the very few long-term feeding studies



Mice look to a narrowing future

ever conducted with GE crops, the fertility of mice was found to be seriously impaired, with mice fed on GE maize producing fewer offspring than mice fed on non-GE crops.

The study, sponsored by the Austrian ministries for agriculture and health, was presented at a scientific seminar in Vienna. Professor Dr Jürgen Zentek, Professor of Veterinary Medicine at the University of Vienna and lead author of the study, summarised the findings: “Mice fed with GE maize had fewer offspring in the third and fourth generations, and these differences were statistically significant. Mice fed with non-GE maize reproduced more efficiently. This effect can be attributed to the differences in the food source.”

“GE food appears to be acting as a birth control agent, potentially leading to infertility – if this is not reason enough to close down the whole biotech industry once and for all, I am not sure what kind of disaster we are waiting for”, said Dr Jan van Aken, GE expert at Greenpeace International. “Playing genetic roulette with our food crops is like playing Russian roulette with consumers and public health.”

To bee or not to bee

Finally the authorities around the world are taking action on colony collapse disorder (CCD) – the term coined for the catastrophic collapse in the number of bees that has occurred in recent years, especially in the USA. In December the European Food Safety Authority (EFSA) announced a €100,000 grant to a consortium of European scientific institutions to investigate the problem. Earlier in the year the US Department of Agriculture had provided US\$4m in funding to the University of Georgia for similar research.

There is now a consensus that the problem has become very serious. The bee population in commercially managed hives in the USA is estimated to have declined by 32 per cent in 2006 and 36 per cent in 2007. “Nature works in cycles but we've been constantly losing more and more bees”, said Ed Levi, secretary of the Apiary Inspectors of America. “We used to think that the problem would just go away but today I think it's the canary in the mine.” The bees are mainly affected by two types of infestation: a tracheal mite and the varoa mite that attacks their intestines.

While as yet no scientist has come up with an explanation, it is almost certain that the collapse is linked in one way or another to the rapid expansion in industrial farming. The natural diet of bees is pollen and honey – a mixture rich in enzymes, antioxidants and other nutrients. However, partly because of the decline in natural foraging areas, beekeepers in industrialised countries are increasingly supplementing this natural food with a mixture of artificial supplements, protein and glucose/fructose syrup. It is now believed that

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Attacking the varoa mite with a fungus

this diet may have weakened the bees' immune system. Pesticides used on crops have also been affecting bees. For instance, the insecticide imidacloprid disrupts the bees' homing behaviour. For more than a decade French beekeepers have been calling for a complete ban on the insecticide, saying that it is causing "mad bee disease".

There are also other factors. Beekeeping in the USA has become a multi-billion-dollar industry. Many beekeepers make much more money renting out bees to pollinate food crops than they ever made selling honey. Juggernauts stacked with hundreds of hives travel huge distances, carrying the bees from one monoculture crop to another. The bees are stressed by the journey and have difficulty finding their bearings in alien ecosystems. Mortality rates are high. There is also growing concern that the bees may have been harmed by feeding on GM maize, which now accounts for more than half of the maize in US fields.

It is possible that CCD has multiple causes, with different factors combining to weaken the bees. As *The Ecologist* pointed out 18 months ago, "The single coherent thread that connects all the various theories of CCD is a massive failure of these creatures' immune

systems. It is entirely possible that CCD is the inevitable result of an overwhelming, ongoing assault on their immune systems." If this is indeed the case, it will be a difficult problem to solve. It is likely that, at best, the scientific studies currently under way will come up with a technical fix of one kind or another. This will not solve the underlying problem.

Albert Einstein once famously declared: "If the bee disappeared off the surface of the globe, then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man." As yet, bees are reported to be alive and well in areas of the world with little industrial farming. Yet there is good reason for all of us to feel extremely concerned.

Intravenous GM

Advocates of biotechnology often cite the case of GM insulin to demonstrate the safety of GM products. They say that GM insulin has been used for many years and has never caused any problem. But evidence continues to emerge that this is not the case. To cite just one example, the Australian *South Gippsland Sentinel Times* carried a story in September about the terrible side effects suffered by a

diabetic who had unknowingly been using GM insulin for over 20 years. His symptoms included extreme tiredness, weight gain, memory loss, mental confusion, fluctuations in the level of sugar in his blood, constant tiredness, and pain in his joints. Moreover he lost the symptoms associated with hypoglycaemia, which makes the condition dangerous and even life-threatening. He also developed Crohn's disease – a serious complaint that causes inflammation of the intestine and can cause arthritis, eye inflammations and skin eruptions.

Once he discovered that he was using GM insulin, the patient decided to return to natural insulin obtained from animals. He says that the fluctuations in his sugar level ended immediately and he was able to reduce the amount of insulin in his daily injections by 15 per cent. Many of his other symptoms also improved markedly over time. In the fortnight following publication several readers wrote in about similar side effects caused by GM insulin.

Indeed, diabetes sufferers in other parts of the world have for some time been calling for more rigorous investigations into the safety of GM insulin, also known as human insulin. According to the UK-based Insulin Dependent Diabetes Trust, "The first research in 1980 using GM 'human' insulin, by Professor Harry Keen, involved 17 healthy non-diabetic men, and in 1982 'human' insulin was given a licence for general use. This is a remarkably short time for a new drug, especially as 'human' insulin was the first ever genetically engineered drug to be used on people." The Trust's website (<http://www.iddtinternational.org/gmvsanimalinsulin/index.htm>) contains numerous cases of side effects similar to those reported in Australia.



Injecting insulin