

Why I Turned From GM Opponent to Advocate

BY MARK LYNAS, 30 MAY 2014

Just under 20 years ago, when the issue of GMOs was first hitting the news, I was a dedicated anti-biotech activist. I believed that genetic modification was a dangerous technology that would harm the environment and dispossess farmers around the world. Accordingly, I joined with others in organising protests and even crop vandalism - I personally destroyed GMO field trials on multiple occasions, including for oilseed rape, sugar beet and maize in the UK. As recently as 2008, I penned an article for the Guardian arguing that GM would "not be a harvest for the world". [1]

In recent years I came to realise that this position is completely wrong. GMO crops have, by and large, proved to be a boon for farmers and have improved the environment by reducing insecticide applications and encouraging no-till farming which benefits the soil and cuts carbon emissions. [2] The problem with this technology is not that it has been scaled up too fast, but that it has been hampered from being able to fulfil its potential - whole continents, including Europe, Africa and much of Asia, continue to maintain de facto bans on GM crops and seeds without any scientific foundation.

As you might expect, I am constantly asked how I came to change my mind. In particular, people are keen to know what the single "lightbulb" moment was when I realised that I had got this one wrong. The truth, however, is more prosaic: my change in opinion came gradually as a result of a better understanding of science, in particular as a result of my work on climate change. When I realised that the international scientific consensus on GMO safety was as strong as that on the reality of climate change, I had little choice - continuing to fight against GMOs would put me in the same intellectual and scientific category as climate change deniers. [3]

It is now apparent, from 20 years of safety research and hundreds of scientific papers, that, in the words of the American Association for the Advancement of Science, "the science is quite clear: crop improvement by the modern molecular techniques of biotechnology is safe". [4] Thus the assumption that I had held as an anti-GMO activist, that there was something dangerous about the technology of recombinant DNA, has been proven scientifically wrong. I had no choice but to change my mind.

Over the last year, I have been honoured to be able to work directly with scientists and agronomists in developing countries who are trying to ensure that the poorest farmers with the least land are not excluded from enjoying the benefits of biotechnology. Supported by the Bill & Melinda Gates Foundation and working with the Kenya-based tech-transfer NGO, the African Agricultural Technology Foundation, I conducted a tour of six Sub-Saharan African countries, and came across multiple examples of how GMO technology has huge potential to improve lives and livelihoods.

In Tanzania, for example, I met farmers whose families are going hungry because the key food security crop - cassava - has begun to fail under pressure from a new disease called Brown Streak Virus. This virus has already wreaked havoc in Uganda and Kenya. Scientists supported by charitable institutions and working in the public sector have developed a virus-resistant cassava, which is currently in field trials in Uganda.

When I visited the field trial, I was shocked - the GMO cassava plants were the healthiest I had seen anywhere. Yet activists and anti-GMO groups have spread misinformation and conspiracy theories that may yet prevent farmers from ever being able to access this improved cassava plant. They have spread media stories and even aired radio adverts asserting that GMOs can make people sterile and cause cancer. [5] Many of these overtly fearmongering and anti-science NGOs are supported by naive Western donors.

As a newly-appointed Visiting Fellow at Cornell University's College of Agriculture and Life Sciences, I have also been working with other Cornell academics and Bangladeshi scientists who are introducing a genetically-modified pest-resistant eggplant - known as Bt brinjal - into Bangladesh. The stakes are high, because anti-GMO activists managed to block this same Bt brinjal from adoption in both India and the Philippines, but the Bangladeshi government has stood firm and supported its introduction.

Bt brinjal is now being trialled by about 20 farmers in four different regions: Gazipur, Jamalpur, Pabna and Rangpur. The benefits could be enormous: under conventional circumstances, brinjal is sprayed with toxic pesticides as much as 140 times a season in order to prevent infestation by an insect pest called the fruit and shoot borer. The Bt brinjal is fully resistant, so farmers can dramatically reduce their use of pesticides, their exposure to toxins, and consumer ingestion of toxins. They can also save money and harvest a better crop.

However, once again activists have sought to stop the deployment on the basis of unfounded health fears and so-called "biopiracy," despite the intellectual property residing with Bangladeshi government scientists. Masked activists have even visited the farmers growing Bt brinjal and tried to force them into making video statements condemning their own crop. Clearly the perceived success or failure of South Asia's first GMO food crop is in the balance.

Looking at these different examples from the developing world, it is clear that GM technology has a lot to offer small farmers - and yet its deployment is far from certain given the ongoing political controversy. A stronger voice for public sector scientists and farmers in the developing world who are keen to have access to agricultural innovations could be key to breaking the impasse. I certainly hope so.

This opinion forms part of SciDev.Net's global debate: "What's wrong with GM?"

References

- [1] Mark Lynas, GM won't yield a harvest for the world (The Guardian, 19 June 2008).
- [2] International Service for the Acquisition of Agri-biotech Applications, ISSAA Brief 46-2013: Executive Summary (2013).
- [3] Pamela Ronald, 20 points of broad scientific consensus on GE crops (Biotechnology Fortified, 5 October 2013).
- [4] American Association for the Advancement of Science (AAAS), Statement by the AAAS Board of Directors On Labeling of Genetically Modified Foods (12 June 2013).
- [5] Sadab Kitatta Kaaya, NGOs, lecturers in trouble over GMOs, (The Observer, 15 January 2014).