This year marks the 30th anniversary of the development of genetically modified (GM) crops. It was in 1983 when three groups of scientists at a meeting in Miami announced developing a method to deliver genes into plant cells using Agrobacterium, and the successfully creating transgenic plants. It was thus fitting that the 2013 World Food Prize was awarded jointly to three scientists who led this breakthrough and transformational innovation: Marc Van Montagu of Belgium, and Mary-Dell Chilton and Robert T. Fraley of the United States. The prize recognized the scientists for "individual breakthrough achievements in founding, developing, and applying modern agricultural biotechnology. Their research is making it possible for farmers to grow crops with: improved yields; resistance to insects and disease; and the ability to tolerate extreme variations in climate."

The World Food Prize, which carries a cash award of $250,000, was started by Nobel laureate Dr Norman Borlaug of "Green Revolution" fame. The fact that the two winners of the prize are from the corporate sector did not go unnoticed by the popular press as evident by the headlines in New York Times: "Executive at Monsanto Wins Global Food Honor." David Zilberman, professor at University of California, Berkeley in contrast praised the award saying that this recognition was highly justified and long overdue, saying that "The committee took the long-view approach in recognizing breakthrough achievements that allowed for the unleashing of the potential of molecular biology on food production."

GM debate has been brewing up lately in the beautiful state of Hawai‘i. Councilwoman Margaret Wille has introduced a bill in the Kauai‘i county that would “prevent farmers from planting any genetically modified crops not already grown on the island.” The Honolulu News Now notes that if the Bill 79 is passed, “it would be the first anti-GMO legislation passed in Hawai‘i.” The committee took the long-view approach in recognizing breakthrough achievements that allowed for the unleashing of the potential of molecular biology on food production."

In the United Kingdom, a pro-GM food speech by the environmental secretary at the Rothamsted Experiment Station spurred tremendous press coverage (see editorial in this issue on that topic by Vivian Moses titled "A Gale of Fresh Air"). Prime Minister David Cameron also delivered a speech at a pre-G8 arguing for openness to innovation and the need to ensure a pro-science culture. He said "I think it is time to look again at the whole issue for GM food. We need to be open to arguments from science." Mark Lynas, an environmental activist from UK, who was earlier involved in anti-GM protests and crop vandalism, catalyzed himself into media tempest by publicly apologizing for health or food safety concern and that the “completion of the FDA consultation process means this variety is as safe as non-GE wheat currently on the market.”

USDA investigated the issue after a scientist from Oregon State University reported to the agency on May 3rd that some wheat samples had tested positive for a protein that confers resistance to the popular herbicide glyphosate. USDA’s press release assured that this was “a single isolated incident in a single field on a single farm and there was no indication of the presence of such GM wheat in commerce.” As the US is the largest exporter of wheat in the world accounting for nearly $9 billion in trade, agriculture secretary Tom Vilsack was quick to assure importers (Japan, South Korea, China and Taiwan) that US wheat was safe to eat. European scientists are getting impatient with the continent’s continued resistance to GM foods, and are calling on their governments to ease restrictions on this technology. Writing in The Scientist magazine in an opinion piece titled “Don’t Fear GM Crops, Europe!” scientists from the University of Lleida-Agrofencia in Spain wrote “If the European Union is to have any hope of feeding its population in the future, it must end its illogical aversion to genetic modification.” They asked, “Why is the EU so against GM crops? This is a question that top-level policymakers will likely never answer, even though the EU’s own scientific bodies have demonstrated that GM crops are safe. The EU cannot grow enough food or feed to sustain its own population using conventional agriculture, so banning the growth of GM crops comes at a great expense. There is no rational scientific reason for importing GM foods from abroad when the same plants could be grown at home, so why are these food crops not flourishing in Europe’s rich agricultural lands? Unfortunately, the reason is political expediency.”

In Oregon, a test in a small wheat field in northeastern Oregon showed trace amounts of Monsanto’s GM wheat tolerant to glyphosate. As there is no commercial cultivation of GM wheat yet anywhere in the globe, this surprise finding elicited much press coverage. The United States Department of Agriculture (USDA) issued a press release on June 14, 2013 assuring the public that the “detection of this wheat variety does not pose a public
his role in the anti-GM movement and thus sending shockwaves through environmental circles. In a lecture to Oxford Farming Conference, he started his speech saying, “I want to start with some apologies. For the record, here and upfront, I apologize for having spent several years ripping up GM crops. I am also sorry that I helped to start the anti-GM movement back in the mid-1990s, and that I thereby assisted in demonising an important technological option which can be used to benefit the environment. As an environmentalist, and someone who believes that everyone in this world has a right to a healthy and nutritious diet of their choosing, I could not have chosen a more counterproductive path. I now regret it completely.”

And he ended his talk by saying, “So my message to the anti-GM lobby, from the ranks of the British aristocrats and celebrity chefs to the US foodies to the peasant groups of India is this. You are entitled to your views. But you must know by now that they are not supported by science. We are coming to a crunch point, and for the sake of both people and the planet, now is the time for you to get out of the way and let the rest of us get on with feeding the world sustainably.” Understandably, Lynas’s speech announcing his U turn on GM crops generated a maelstrom of media buzz. Andrew Revkin commenting on Lynas in the New York Times blog: “...he has displayed an encouraging—and still rare—capacity to shed dogma in favor of data.”

Despite the spectacular success of Bt cotton, India has just shelved field trials of many GM crops. The Genetic Engineering Appraisal Committee (GEAC) had earlier approved field trials of GM rice, wheat, maize and castor but the environment ministry subsequently put the trials on hold. India’s minister for rural development Jairam Ramesh, who famously put a moratorium on Bt-eggplant while he was earlier the environment minister, was again in news recently. Talking about the issue of GM crops, he stated “It is a step that is...that can be taken...I think one has to be careful here. Because it is very mesmerising and very seductive to have rice which is fortified with vitamin A, a wheat which is fortified with iron and all the wonderful things that have come out with through transgenic techniques.”

Kenya was in headlines earlier when its then president Mwai Kibaki banned imports of GM food until the country “is able to certify that they have no negative impact on people’s health.” Wilbur Ottich, a member of the Kenyan parliament also recently called on the new government to rescind the ban on GM imports imposed by the previous administration. He stated that, “We need to take a bold step forward as a country and fully accept biotechnology. As time goes by and the effects of climate change become more and more intense, the country’s food security will inevitably be threatened. We therefore have to start considering use of new agricultural production technologies like drought tolerant maize.” He also asked, “Where is Kenya going to import maize from to feed the citizens? If we go to South Africa, South America, China or the US, they all grow GM maize. This is exactly why we need to re-think this decision.”

Golden rice, enriched with β-carotene, continues to be in the news. According to Science News Philippines, golden rice has gone through all safety evaluations appropriate and required at each stage of the project. The International Rice Research Institute reports that they “are following international and national guidelines for food safety of genetically modified crops, which require assessment of the nutritional value of golden rice and potential toxicity and allergenicity of proteins from the new genes in it.” Let us hope that it would be released soon to help fight the dreaded vitamin-A deficiency in rice eating parts of the world.

A court in the Philippines issued a ruling to permanently stop confined field trials of Bt eggplant, genetically modified to resist insect attack and thus reduce pesticide use by farmers. David Ropeik, writing in a Scientific American blog, says that this was a “striking victory for environmentalists who oppose many modern technologies that are ‘destroying nature’, and an ominous defeat for science and reason and the thoughtful search for solutions to some of humanity’s biggest problems. In a very real way, the decision also threatens the lives and health of hundreds of millions of people around the world.” Dr Emil Q. Javier, who was earlier president of the University of the Philippines, said that the court decision was a huge setback to the struggling science community and a serious curtailment of the academic freedom.

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No potential conflicts of interest were disclosed.
References