

Wall Street Journal Asia ©

March 03, 2010

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## Why Is India Shunning Safer Food?

**One thing's for sure: The moratorium on genetically modified eggplant wasn't a decision based on science.**

By [C. KAMESWARA RAO](#)

There's a certain irony that while this week the European Union overcame over a decade of opposition to genetically modified feed, in India public policy is swinging in the other direction. And the Congress Party-led government in Delhi still isn't explaining why.

Last month, the Minister of Environment and Forests, Jairam Ramesh, imposed a moratorium on genetically modified eggplant—known locally as Bt Brinjal—for an unspecified period of time, claiming the science wasn't yet proven. The move prompted Prime Minister Manmohan Singh last week to call a meeting of the Ministers of Agriculture, Science and Technology; Human Affairs; and Environment and Forests to discuss the decision.

The confab didn't shed much light on the problem. After the meeting's conclusion, Mr. Singh re-emphasized the importance of biotechnology in boosting productivity; concern about food security; and the need to establish a national biotechnology regulatory authority. He also called for a government panel, the Genetic Engineering Approval Committee (GEAC), to ensure that GMO eggplant has no adverse effects on human and animal health and biodiversity—but didn't set a timetable for the committee to do so.

There is no scientific basis for this indecision. The safety and efficacy of so-called "Bt technology," which involves incorporation of one or two chosen genes from the universally occurring soil bacterium, *Bacillus thuringiensis*, into the genome of a crop targeting the most devastating pest threatening that crop, has been investigated for repeatedly by the mandatory regulatory regimes of every one of the 25 countries that commercialized these crops in the past decade-and-a-half. Genetically modified food is widely available in the United States, and will soon be in Europe, too.

In India, Bt Brinjal was subjected to extensive agronomic and biosecurity evaluation from 2000 to 2009, as per the mandatory provisions of our national regulatory regime. About 200 scientists and experts from over 15 public- and private-sector institutions participated. The massive dossier on Bt Brinjal's biosecurity evaluation was placed in the public domain on the GEAC's Web site in November 2008. The test process and results passed through several competent authorities and were also evaluated—and passed—by two different expert government committees. Based on this evaluation, the GEAC approved Bt Brinjal for commercialization on October 14.

Mr. Ramesh's decision leaves farmers in the lurch. They lose 50-70% of their annual marketable eggplant yield to two insects—*Leucinodes orbonalis* and *Helicoverpa armigera*—which cause severe shoot and fruit damage. The damage inflicted by these pests is carried onto the next crop. The prevalent practice of very high application of synthetic pesticides does not help because the pests live deep inside the stem and fruit tissues. No eggplant variety is resistant to these pests.

Bt Brinjal fixes this problem by imparting a systemic tolerance to the shoot and fruit borers. The specific gene, called Cry1Ac, was isolated from *Bacillus thuringiensis*. The same gene has been incorporated into the genomes of several other crops such as cotton, corn, potato, tomato and rice, to control the most damaging pest in each case.

If anything, the Indian government should be cheering on this kind of innovation. The country's version of Bt Brinjal was developed by a public-private partnership—just the type Delhi wants to encourage. Mumbai-based Maharashtra Hybrid Seed Company (Mahyco) obtained rights to the Cry 1Ac gene from Monsanto. Mahyco then collaborated with Tamil Nadu Agricultural University at Coimbatore and the University of Agricultural Sciences at Dharwad in Karnataka to develop the specific local Bt varieties. The company also set up similar arrangements with the Indian Institute of Vegetable Research at Varanasi, the University of Philippines, Bangladesh Agricultural Research Institute and a private seed company, Dhaka-based East West Seeds. The project was funded by the U.S. Agency for International Development and managed by Cornell University.

In spite of all this effort, Mr. Ramesh played to the activist campaign that alleged products are toxic and allergenic, harm related species, and negatively impact ecology and biodiversity—among many other false claims.

Bt Brinjal is neither toxic nor allergenic and is safe to the nontarget organisms and the environment. In fact, it greatly reduces the cultivation expenses on the use of synthetic pesticides, and thus the risk from synthetic chemicals to the farmers, consumers and the environment. It vastly enhances the marketable yield of healthy vegetables, benefiting millions of farmers and consumers.

Some members of government understand these proven facts, including members of the Prime Minister's Economic Advisory Council and the Ministers for Agriculture, Science and Technology and Human Resources—all of whom have voiced concern in recent days.

The government's stand has created huge regulatory uncertainties for no valid scientific reason or environmental concern. No innovator can afford to develop any biotech crop with an uncertain approval process that is divorced from science. Delay in the commercialization of Bt Brinjal will promote its clandestine cultivation, as it has happened with Bt cotton in Gujarat, and elsewhere. This is not in the best interests of India, nor its people.

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