



Monthly Bulletin  
on Genetic Engineering  
July 2009

*For details:*

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## National News : GM & Health

### 1. Disclose Data, Says CIC

[http://greenbio.checkbiotech.org/news/disclose\\_toxicity\\_data\\_gm\\_foods\\_cic\\_biotech\\_dept](http://greenbio.checkbiotech.org/news/disclose_toxicity_data_gm_foods_cic_biotech_dept)

**New Delhi – The Central Information Commission (CIC) has directed the Department of Biotechnology to provide crucial data pertaining to genetically modified agricultural products to an environmentalist working with voluntary group, Greenpeace.**

In a decision by its full bench, the Commission has refuted the arguments put forward by “third party” MAHYCO, a firm which markets Bt Cotton and other genetically modified seeds, that disclosure of data pertaining of such agriculture products will affect their business interests.

The company claimed non-disclosure of data citing section 8(1) (d) of the RTI Act which exempts information from disclosure if it includes commercial confidence, trade secrets and intellectual property. But it has a rider that such details can be disclosed in larger public interest.

The Commission held, “toxicity and allergenicity of any product to be put on large-scale trial is a matter of overriding public interest.”

Activist Divya Raghunandan, in her RTI application, had sought list of field trials of genetically engineered brinjal, okra, mustard and rice approved by review committee of genetic manipulation. She also sought toxicity, allergenicity data about the products and minutes of the committee meeting.

The department had allowed disclosure of toxicity and allergenicity data but Mahyco filed an appeal with the CIC to stop the disclosure arguing that this would affect its business interests.

### 2. Protest Against GM Food

[http://greenbio.checkbiotech.org/news/activists\\_campaign\\_against\\_introduction\\_gm\\_food](http://greenbio.checkbiotech.org/news/activists_campaign_against_introduction_gm_food)

**New Delhi - Dozens of green activists, dressed to pose as brinjals, held demonstrations on Saturday and urged Prime Minister Manmohan Singh not to introduce genetically modified (GM) food in**

**the country, saying it is a biological and health hazard.**

“We want the prime minister to stop introduction of GM food in the country as it is a health and environment hazard,” said Selva from the Association of India’s Development, an NGO that promotes sustainable, equitable and just development.

The agriculture ministry Tuesday announced that GM versions of tomato, brinjal and cauliflower would be introduced in the country in three years.

The NGO’s volunteers, who gathered at Dilli Haat, a handicraft bazar here, also enacted a skit to educate people on this issue.

### 3. We are still living in the middle ages: Seralini



For a country that doesn’t take much interest in scientists, Gilles-Eric Seralini can probably be termed well-known in India. Algeria-born Seralini, 49, is professor of molecular biology at the University of Caen in France.

Excerpts from an interview conducted last week in Delhi:

**You head the Committee for Independent Research and Information on Genetic Engineering (CRIIGEN). Is its expertise and independence recognised globally?**

We have undertaken studies for the EU, the directorate of agriculture of the European Commission, Quebec’s ministry of environment, the governments of Tunisia, Egypt, the Carrefour Group; we did studies on transgenic salmon for the University of Montreal, the European Spatial Agency and Greenpeace among others.

**What is the biggest problem with GMOs?**

You may not be aware that 99.9 per cent of edible GMOs are designed to contain toxic pesticides whose effect on the human body and the environment are not known. At CRIIGEN, we believe there should be transparency on the development of GMOs. This is the biggest

problem. Everything is kept confidential by the biotech companies whose data governments accept without validation. We need many more tests on the environmental and health-safety aspects of GMOs and it should be assessed independently. We want science to be used for the benefit of people, not companies.

#### **Are the tests on GMOs inadequate?**

No government anywhere has asked a company to do more than 90-day tests on GMOs. It's unbelievable that such tests are considered adequate for food that is given to babies and old people. Most companies also keep their test data secret, especially blood analyses of animals fed on GMOs. This is not science; we are still living in the Middle Ages. No tests have ever been conducted by companies of the pesticides associated with GMOs on human cells. The blood analyses are performed only on rats and are kept unbelievably confidential.

I must congratulate India on making the Mahyco data on Bt brinjal public. (This came about as a result of the Supreme Court case and a campaign launched by Greenpeace India). I must also congratulate Mahyco for tests conducted on three mammals but it did the tests for only two doses against three mandated in the OECD protocol (India claims to be following this protocol).

#### **What is the most dangerous finding from your analyses of the Mahyco data?**

The dossiers submitted by Mahyco raise serious concerns. They are not signed by the researchers who did the tests, which means these can be considered invalid. But most significant, Bt brinjal has been modified to produce an unknown chimeric insecticide toxin. In the toxicity tests on target and non-target insects, this chimeric toxin was not used. Instead, an improper Cry1Ac toxin was used because this control was easier. Also, Bt brinjal is resistant to antibiotics, at least the well-known kanamycin.

#### **How serious a health risk is that?**

Antibiotic resistance, you must be aware, is recognized as a major health problem because of the growing genetic resistance to antibiotics, both in the environment and humans. You simply should not consider commercializing a

food item that is resistant to antibiotics. Besides, several biotechnology companies have already developed transgenic plants without this marker gene.

#### **So why is Mahyco unable to do so with its Bt brinjal?**

It is possible that Mahyco bought an old unused GMO technology from Monsanto (The US biotech giant is the parent company of Mahyco).

#### **Are there other concerns with Bt brinjal?**

Bt brinjal appears to contain 15 per cent less kcal per 100 gram. It also has a different alkaloid content and 16-17 mg per kg of Bt insecticide toxin that is poorly characterised for side-effects. Significantly, rats fed on the Bt brinjal had diarrhoea, suffered liver weight loss while other animals, too, showed significant biological changes.

#### **Given all these risks why is it that the GEAC did not bring it to the attention of the government?**

I think the GEAC has not gone through the data on Bt brinjal. I have received mails from the GEAC asking me, "Why do you call it chimeric toxin?" So I had to point out the page and paragraph where it was mentioned in the Mahyco dossiers! They should scrutinize the data carefully, go through it table by table to discover what lies hidden in these figures, and not go by the conclusions of the company.

#### **What should India do?**

It should seek absolute transparency on GMO testing. GEAC and Mahyco must respond to the concerns raised on the side effects of Bt brinjal and the results should be available for public scrutiny. Also, GEAC should compel Mahyco to compare Bt brinjal with the same variety of brinjal, and not any variety that the company finds appropriate as it has done so far. This is not proper science because it masks the real effects of the Bt toxin. Most important, the regulators must insist on full transparency in the blood analyses of animals fed on Bt brinjal. The best way would be to set up an independent testing facility. This way India will become the symbol of not only good science but also the source of good food for the rest of the world.

### Should GMOs be banned altogether?

GMOs should be tested like drugs. This means full life-cycle tests on rats and other mammals. That's the only way one can assess their safety for human consumption. As for the environment, remember that once it is out in the open, you cannot confine it. In India, it will be the end of your rich biodiversity. I understand that there are 2,000 varieties of brinjals in this country. You risk contaminating all of these. Let me give you an example: A tiny quantity of sterile GM maize producing a vaccine for pigs in the US has contaminated 500,000 tons of soya.

### Even Europe is under US pressure on GMOs

In spite of that, GM crops account for only 0.05 per cent of the acreage in Europe (100,000 hectares in Spain), while it is 18 per cent of US agriculture which produces 96 per cent of the world's edible GMOs. The European approach is that we don't know enough about this technology so long-term assessments must be made of the environmental and health impact. The EU also stands for transparency and counter expertise, meaning independent scientific tests. I believe that the world is headed for the biggest health crisis ever because of the lack of transparency. It will make the financial crisis seem like a blip.

### 4. Indians will end UPS as Lab Rats!

[http://www.thaindian.com/newsportal/sci-tech/india-shouldnt-accept-europe-rejected-gm-crop-scientists\\_100216328.html](http://www.thaindian.com/newsportal/sci-tech/india-shouldnt-accept-europe-rejected-gm-crop-scientists_100216328.html)

**New Delhi:**Two European scientists visiting the capital Friday warned India against accepting genetically modified (GM) crops and foods technology rejected by European nations.

"I hope India won't adopt what was discarded by Europe. If it accepts commercialization of GM foods, it will be the only market apart from North America where it is produced in bulk. The people of this country will just end up as lab rats since this would be the first time GM organisms would be in foods for human consumption," leading French geneticist Gilles-Eric Seralini told reporters here.

Within the next one year, the Indian market may open its doors to Bt brinjal, a genetically modified version of the common vegetable. While government officials claim the crop won't be released without adequate safety assurance, campaigners and scientists have asserted that the safety precautions are unreliable.

Nuclear genetics expert, Michael Antoniou from the department of medical and molecular genetics at King's College, London, said: "The only responsible use of genetic engineering is in a contained, clinical, laboratory set-up. GM in agriculture is like playing god and when man tries to play god, it does not work."

"The extreme complexity with which genomic regulation works has not been understood by the best of geneticists, and it should be remembered that GM organisms in the environment cannot be recalled. Precautionary approach is the only way forward with this technology."

The duo were here to present papers at a two-day national workshop on 'GM crops or food and health implications' organised by the Centre for Sustainable Agriculture, Sustainet and Greenpeace India.

They jointly criticized Environment and Forests Minister Jairam Ramesh's recent comments that he supported GM crops but not GM foods.

"The impact of the GM foods has a direct impact on our health but introducing GM organisms into soil or air contaminates the core genome and poses hazard on biodiversity and plants," they said.

Now the Bt brinjals are in the final stages of approval from the Genetic Engineering Approval Committee (GEAC), a government agency. After Bt brinjal, there are 25 kinds of rice, 23 kinds of tomatoes, many types of groundnut, pigeon peas, potato, mustard, sugarcane, soy and okra awaiting GEAC approval.

While emphasising that "transparency is crucial", Seralini shared that there was a conscious attempt by the company to hide or pass off results of the blood analysis on tested animals as "normal".

“The rats, goats, and rabbits on whom the trials were conducted showed difference in blood coagulation, glucose levels, disturbed functioning of liver, kidneys - this was kept confidential,” he said.

The two jointly urged the the government and minister for environment and forests as well as the minister for health and family welfare to intervene and freeze approvals till sufficient data is collected and proper labelling regulations imposed.

### 5. Clinton Pitches US Interests

<http://timesofindia.indiatimes.com/articleshow/msid-4796140.prtpage-1.cms>

**NEW DELHI:** Days after the government said it was planning to introduce genetically modified food crops in the country in three years, US secretary of state Hillary Clinton gave a clear indication of the US administration’s approval of deploying ‘cutting-edge technology’ to raise crop yields.

During her first visit to India as secretary of state, which included a strategic stop at the country’s premier agriculture institute, Indian Agricultural Research Institute, Clinton was vocal about the need to address the “root” of the problem of world hunger: crop productivity. And helping increase crop yield would be cutting-edge technology, she claimed.

“India’s leadership in agriculture is absolutely crucial,” Clinton said as she spoke at length on the US administration’s focus on global hunger and malnutrition. Pledging to “work and support” Indian initiatives, Clinton added, “We have to work together. It is imperative that we invest in science that increases crop yield.”

The remark comes in the face of continued opposition to genetically modified food crops

in India. While the government has been talking about giving support to the introduction of GM crops, it has only allowed the entry of GM cotton, known as BT cotton.

Clinton’s statement at the Pusa institute, however, was clear about where the US administration stood on the issue. Talking about the Green Revolution that took place in India in the 1960s, she emphasised the need for close cooperation between the two countries again: this time, in agriculture and the use of technology in this field.

“India has 3% of the world’s crop land but feeds 17% of the world’s population. Its leadership in agriculture is crucial... we are looking at ways to accelerate in a short period of time the growth of productivity,” Clinton said.

Questioned about the US’s commitment to GM crops, as opposed to the cautious stand taken by the EU, Clinton admitted, “We’re looking at it in a holistic way, by being very vigilant about how we do it.” Interestingly, **while the emphasis on technology in agriculture was more than apparent, Clinton avoided using the emotive word ‘GM’ throughout her interaction.**

### 6. Amala Joins Fray Against GM

<http://www.thehindu.com/2009/07/11/stories/2009071159740700.htm>

**SANGAREDDY:** Actor and Blue Cross activist Amala on Friday created a flutter by joining the Green Peace protesters who were agitating against Bayer India Bio-Private Limited. Earlier Patancheru Police registered a case against 30 Green Peace activists for “trespassing” into Bayer India’s premises based on a complaint lodged by the company.

## *GE issues around the World*

### 7. Weed-Killer Turns Deadly

<http://americas.irc-online.org/am/6254>  
<http://www.scientificamerican.com/article.cfm?id=weed-whacking-herbicide-p>

Argentina has seen an explosion in genetically modified (GM) soy bean production with soy exports topping \$16.5 billion in 2008. The fertile South American nation is now the world’s third

largest producer of soy, trailing behind the United States and Brazil. However, this lucrative industrial form of farming has come under fire with environmental groups, local residents, and traditional farmers reporting that GM soy threatens biodiversity, the nation's ability to feed itself, and health in rural communities.

Criticism of the soy farming model intensified recently when research released by Argentina's top medical school showed that a leading chemical used in soy farming may be harmful to human health. The study has alarmed policymakers in the South American nation.

The study released by an Argentine scientist earlier this year reports that glyphosate, patented by Monsanto under the name "Round Up," causes birth defects when applied in doses much lower than what is commonly used in soy fields. The study was directed by a leading embryologist, Dr. Andres Carrasco, a professor and researcher at the University of Buenos Aires.

In a small town bordering soy farms in the province of Cordoba, the Mothers of Ituzaingo group was formed in response to sudden increases in the local cancer rate. Ituzaingo has 5,000 residents—in 2001 they reported more than 200 cases of cancer and by 2009 that number has jumped to 300. This is 41 times the national average.

Sofia Gatica is an activist with the Mothers of Ituzaingo. Sofia joined the grassroots group after suffering the death of her newborn baby. Her daughter was still born with a malformed kidney. Her 14-year-old daughter is currently undergoing treatment for toxicity in the blood. The toxin was identified as endosulfan, an insecticide used on soy fields.

Gatica describes the many birth defects that have occurred locally. "We have had children born with only two thumbs and no fingers, malformed kidneys, children with six fingers. We have had babies born without an anus, or with malformations in the intestines."

Used in yards, farms and parks throughout the world, Roundup has long been a top-selling

weed killer.

## 8. Roundup Herbicide Disrupts Sexual Hormones

Prof. Seralini's group from CRIIGEN in the University of Caen, in collaboration with Pr. Chagnon's group from the University of Dijon, have just published a new discovery, after having demonstrated Roundup toxicity at infinitesimal doses in particular in umbilical cord cells from newborns. At very low levels, for instance 800 times less than Roundup residues authorized in some GMOs for feed in United States, this kind of herbicide for a formulation sold in drugstores **prevents the action of androgens**, the masculinizing hormones. Then the **action and formation of estrogens are also disrupted**. The DNA damages in human cells begin around this level. These effects explain disturbing results of animal experiments and in human epidemiology. It is thus proposed to examine in regulatory instances the classification of Roundup and other glyphosate-based herbicides as reprotoxics and endocrine disruptors. These phenomena have been underestimated up to now because pesticides factories present in majority to authorities studies with glyphosate alone, however the commercialized mixture is a lot more active.

The study is published by the end of June 2009 in the international scientific journal Toxicology by Gasnier et al. [www.criigen.org](http://www.criigen.org) <<http://www.criigen.org>>

## 9. France Stands Firm

<http://www.google.com/hostednews/afp/article/ALeqM5gecpoGGp9SPYnFj9jGVZgRNXTv8g>

PARIS - France on Friday rejected a report by the European Union's food safety watchdog that said a controversial strain of genetically-modified corn was safe.

In a joint statement, the French ecology and agriculture ministries said the Italy-based European Food Safety Authority (EFSA) had failed to take into account requests to change the way it evaluated the risk.

## 10. EU Council Debates GMOs

<http://www.independent.com.mt/news.asp?newsitemid=90577>

In a recent meeting of the EU's Environment Council, Austria, supported by 12 other countries including Malta, submitted a note proposing the way forward on the legislation dealing with genetically modified organisms (GMOs) in agriculture – a source of ongoing bioethics debates.

The use of GMOs in agriculture is one of the rare subjects of EU legislation where no qualified majority has been achieved within the EU Council in recent years.

## 11. Nigeria to Keep Vigil

[http://greenbio.checkbiotech.org/news/nigeria\\_govt\\_check\\_dumping\\_biotech\\_products](http://greenbio.checkbiotech.org/news/nigeria_govt_check_dumping_biotech_products)

**AS the debate on the use of biotechnology for better agricultural yields and the much-sought food security for Nigeria ranges on, the Federal Government says it would not allow the country to be made a dumping ground for hybrid products.**

Minister of Environment, Mr. John Odey, declared this yesterday at the Open Forum on Agriculture Biotechnology in Africa (OFAB) organised by the National Biotechnology Development Agency (NABDA) in Abuja.

His words: "Some of the products of biotechnology constitute risks to human health. The world is waiting to push their biotechnology products into Nigeria but the country will not be a dumping ground for such products."

**This monthly bulletin is brought out by South Against Genetic Engineering (SAGE), a coalition of civil society activists, farmers, scientists, academicians, and consumer groups of four Southern States of India, viz., Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra. SAGE has been waging a concerted battle against genetic engineering through a series of activities that involve public protests, media actions, seminars, consultations and publication of a series of educational materials.**