

GM crops plagued by Biosafety concerns: Greenpeace

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While one cannot but deny the benefits of technology, it seems it has its risks too, which need to be addressed. In the case of GM crops, a plethora of issues have been raised on issues of biosafety ...

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Genetically modified crops or GM crops have been in the eye of a storm in India. It was in August 2008 that the Supreme Court issued a notice to the central government on an application seeking a moratorium on release of any genetically-modified crop till an independent testing lab is being set up in the country. It was only in February that SC had lifted its ban on GM crops and allowed the GEAC to approve new crops and events for field trials after proper guidelines and biosafety norms have been put in place. The ban was slapped following a petition that complained of genetic contamination owing to the large scale field trials of some GM crops. Bt cotton, the first transgenic (non-food) crop to be commercially released in India in 2002 has been widely debated for its performance, impact on the environment, biodiversity and health of cattle. Bt Brinjal is soon going to be India's first GM food crop after it clears the biosafety approvals. A host of other crops such as rice, okra and potato are also in the queue. However, there have been constant doubts on the safety of the trials. Trials of Bt rice in the central Indian state of Jharkhand also came under sharp criticism by the Delhi-based nongovernmental organization Gene Campaign in September. According to Gene Campaign's convener Suman Sahai, an independent survey of the trial sites by her organization revealed serious gaps in the methods of the Maharashtra Hybrid Company (Mahyco), an Indian partner of

biotechnology company Monsanto.

The threats posed by GM crops in view of the current regulatory systems have been highlighted in a report by the Yokohama-based United Nations University Institute of Advanced Studies (UNIAS) released during a summit on the UN Framework Convention on Biodiversity in Bonn, Germany in May this year. According to the study lead author, Sam Johnston, India faces a huge risk because safety norms on genetically modified crops are not being enforced which makes the country vulnerable to bioterrorism attacks. Citing the lack of technical, policy and enforcement capacities in developing countries, Johnston said, "If you don't have the ability to monitor technology, the technology can be used for bioterrorism as you are not biosecure. Just rolling out the technology is not the answer as enormous number of people are resistant to it."

The last few years have seen a spurt in the number of GMOs in India. According to Greenpeace, in 2005 research was focused on 21 crops containing staple cereals, lentils, vegetables, fruits, and the research investment was low. But today rice alone has about 24 different GMOs. Tomato is the second most experimented food crop with 23 events. The other major crops are sorghum and tobacco closely followed by brinjal, groundnut, pigeon pea, potato, mustard, sugarcane, cowpea and soy. Brinjal however is the first crops to go into large scale field trials and is thus anticipated to be the first crop to be approved. Field trials are a long drawn-out process in which companies have to prove that their GM seeds are non-toxic, superior to the natural alternative and environmentally safe. The results have to be approved by the GEAC. Over 236 GMOs, of which 169 are food crop varieties, are in different stages of trials at different private and public institutes in India.

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The argument

While those in favor of GM crops might say they are the answer to the world's food crisis, opponents of GM crops have their own arguments. Greenpeace released a report titled "Genetic Gamble" in October that delves into the subject of India's GM food proliferation citing the pertinent danger that inadequately tested GM could pose to consumer health, agriculture, environment, and even revenues earned from food exports. "One of the most glaring regulatory gaps is the system in which biosafety of GM crops is given the least importance. The startling fact is that even after two years of field trials, none of the regulatory bodies have any conclusive evidence on the biosafety of GM rice, okra and mustard." stated Dr Mira Shiva, Initiative for Health and Equity & Society. They argue that there is no labeling or regulation of imported GM food and that the contamination of organic or non-GM crops are not acknowledged. Unlike EU, where food labeling laws are strict, but still need enforcement, Indian laws are almost non-existent.

They argue that there have been no long term studies done to indicate the safety of the first GM food crop of India. And while at the international level, GM food has been either banned or strict restrictions implemented in the European Union, Japan, South Korea and many countries in Africa, India continues to promote GM as the panacea for its food and agriculture problems, said Jai Krishna, campaigner from Greenpeace. Greenpeace advocates that no open air release of GMOs should happen unless there are independent long term health and environmental impact studies conducted and published for an independent public scrutiny conducted on them.

Arguments against GM crops

A summary of anti-GM views:

- None of the GM crops that are being developed today in the country are capable of an increased yield. All GM traits are for stress tolerance/ pest resistance/ herbicide tolerance. Yield is not a mere biological trait.
- No long term tests have been conducted to determine the potential side effects /allergies. Company's labs produce their own safety studies and deny public access to them.
- No Precautionary approach. The safety of GM foods are tested after or during open air field trials, where violations have been repeatedly found, leading to irreversible contaminations
- Does not distinguish GM from non GM. The deliberate release of GMOs means there is no choice left for either the consumer or the farmer to choose.
- No Transparency: The biosafety tests are done by companies that stand to benefit from the technology and are no published for an independent assessment or allowed a free and fair public scrutiny.

GEAC member against MNCs

Dr Ramadoss also opposed to the import of GM food crops into the country. Following Dr Ramadoss' announcement, well-known molecular biologist, and the Genetic Engineering Approval Committee (GEAC) member Dr Pushpa Bhargava had written a letter to the Prime Minister Dr Manmohan Singh, urging him to ban GM food crops being imported into the country by pointing out that many of the approvals given to MNCs went virtually unchecked without any safety checks or research. India, being an agriculture intensive country, would be taken over by MNCs. Bhargava, who was appointed by the Supreme Court to observe the functioning of India's apex GM regulatory committee, GEAC, has suggested a list of tests to be conducted and also pointed out that less than 10 percent of these tests were actually conducted.

Bt food products in the EU goes through a rigorous review to ensure safety, this task is carried out by the European Food Safety Authority (EFSA). EFSA has a panel of independent scientific experts that cooperates closely with national authorities of all member states in analyzing the safety of the products. This panel ensures that the highest standards of safety are applied when testing new biotech crops. Only products that have been assessed as safe are allowed to reach the market. The French Academies of Medicine, Pharmacy and Sciences stated that no evidence of health problems exist in the countries where Genetically modified organisms (GMOs) have been widely eaten for several years.

A recent authoritative study by the European Commission's scientific advisory body the Joint Research Centre (JRC) reconfirmed the commission's findings of 2001, that there is no evidence that genetically modified foods have harmful effects on public health and that there is sufficient evidence available for scientists to draw conclusions about the safety of biotech products. The 2001 study by the European Commission had concluded that the use of more precise technology and the greater regulatory scrutiny probably makes them even safer than conventional plants and foods.

“India would cease to be a free country if its agriculture is brought under the control of foreign multinational companies”

Excerpts from the letter that Prof. P M Bhargava, former director, CCMB has written to the Prime Minister appraising him of the dangers of unchecked approval of GM crops.

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Prof. P M Bhargava, expert member, GEAC

My dear Prime Minister,

I am writing to bring to your notice the dangers of virtually unchecked approval of genetically modified crops in the country that is largely serving the interest of multinational companies such as Monsanto. This approval is granted, according to the present procedure, by a Committee of the Department of Biotechnology (DBT) followed by a Committee (Genetic Engineering Approval Committee) of the Ministry of Environment and Forests.

There is a public interest petition pending in the Supreme Court (filed by Aruna Rodrigues) asking for a moratorium of a few years on the sale of genetically modified (GM) seeds and approval of GM crops. In pursuance of this case, the Supreme Court has nominated me to attend the meetings of the GEAC, which has made me acutely aware of our failings in the area. I have provided to the GEAC a list of tests that must be done before a GM crop is approved. However, only less than 10 percent of these tests are actually being done before approval of GM crops. Not only that, in the absence of a national facility to do these tests or verify the results of tests done by others, the seed companies are either doing the tests themselves or having them done by laboratories in the country on samples provided by the seed companies. These laboratories do not have a facility to determine whether a seed is a normal seed or a GM seed. Therefore, for all practical purposes, there is no objective way today to ensure safety of a GM crop before it is approved for field trials or commercialization. We already have incontrovertible evidence that a great deal of damage has been done by Bt. cotton (the only GM crop released so far, with many others, including food crops, in the pipeline) to a section of farmers in India, as well as to farm animals.

Mrs Aruna Rodrigues told me that she had forwarded the list of tests mentioned above, that I had recommended to the GEAC, to randomly selected well-known scientists who are experts in the field, for their opinion, along with a copy of the counter-affidavit of the GEAC which said that these tests are not necessary (and which also cast personal aspersions on me!). She has forwarded to me replies from the ten scientists who were approached by her. All of them, without exception, have unequivocally supported my list of tests; none of them are my personal friends. I am enclosing copies of the replies of three scientists who are connected with three of the best-known institutions in the world. I would be happy to send your office all the other replies as well.

I, therefore, agree with the contention of Mrs Aruna Rodrigues in the above mentioned petition that is pending in the Supreme Court, that we should have a five to seven year's moratorium on the sale of GM seeds and the planting of any GM crop in the country. During this period, we should set up an appropriate laboratory to carry out all the necessary tests and to verify the results of others that may have been carried out. I have given to the GEAC a blue-print of such a laboratory which would easily take five years to be fully operational. We seek your support to the above proposal.

May I in the end say that as India is primarily an agricultural country, with 60 percent of its population deriving its total income from agriculture and agriculture-related activities, it would cease to be a free country if its agriculture is brought under the control of foreign multinational companies through control of seed and agrochemical production. The marketing of GM seeds by the multinational companies is a step in this direction. What is worrying is that as much as 30 percent of our seed production today may be, directly or indirectly, already in the hands of foreign multinational companies. We must prevent this trend. The proposed moratorium would be one important step in that direction.

Yours sincerely, (P M Bhargava)

Shalini Gupta