

GM NO **Fortnightly Bulletin on Genetic Engineering** **OGM** **South Against Genetic Engineering (SAGE)**

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States, UTs told to form panel for Bt crop trial

The Centre has informed the Supreme Court that state governments and UTs have been instructed to constitute state biotechnology co-ordination committees (SBCC) and district level committees (DLC) to ensure safe field trials of genetically modified (GM) crops.

In an affidavit filed in the apex court, the ministry of environment and forests said the Genetic Engineering Approval Committee chairman has, on September 3, instructed the concerned chief secretaries to constitute SBCCs and DLCs.

State governments have been asked to instruct their department of agriculture and state agricultural universities to comply with the monitoring and reporting requirements in a timely manner, it added.

In order to ensure that the field trials of GM crops are conducted in a safe manner, the Centre has notified the monitoring cum evaluation committee (MEC), comprising multi disciplinary experts, to monitor and evaluate filed trials through state agricultural universities, the affidavit added.

http://economictimes.indiatimes.com/News/Economy/%20Agriculture/States_UTs_told_to_form_panel_for_Bt_crop_trial/articleshow/2388300.cms

GM regulation falls prey to turf war

The regulation of genetically modified (GM) food products has fallen on a bureaucratic blind spot with the environment ministry shirking responsibility and the health ministry delaying the framing of rules to manage the business of such food products in India.

While the environment ministry has moved to limit its mandate to only environmental impacts of GM goods and not review health impacts of processed foods, the rules that the health ministry was to frame to regulate the health safety aspects of such goods under the new Food Safety and Standards Act (FSSA), 2006, are yet to see the light of day.

The move has attracted the ire of civil society. In a statement, the Coalition for GM-Free India said, "The Genetic Engineering Approval Committee (GEAC) has notified that its role with respect to import of processed foods is restricted to ensuring that no adverse environmental impacts occur. With this, it has washed its hands of the responsibility of ensuring safety of human and animal health. That the GEAC is unwilling to perform an unbiased role as a regulator is not only shocking but also makes a mockery of GM regulations in the country."

The 1989 rules under the Environment Protection Act clearly spell out that the GEAC is supposed to take care of all aspects of GM crops and foods, including health implications of GM foods which may be imported into the country, whether raw or in processed form.

http://timesofindia.indiatimes.com/India/GM_regulation_falls_pre_y_to_turf_war/articleshow/2406309.cms

Kolkata: Agri panel for GM crop trial ban

The state agriculture commission has recommended banning field trials of genetically modified crops in the state after the recent controversy over "illegal" field trials in North 24-Parganas. The commission made its decision after long deliberations on 11 September.

"The members of the commission were unanimous about the need for banning trials of GM crops in open fields till we are certain about the safety aspects through further research. Trials may be permitted only in case of government farms or those under universities," Mr Nurul Huda, the member from CPI-M said. Representatives of the farmers' wing of the four key Left Front constituents including Forward Bloc (which holds the agriculture department) were equally vocal about banning the field trials, particularly in view of health hazards and GM contamination .

"The commission has also asked the state government to inform the Centre about the ban to be imposed on field trials," another member of the commission said. However, the agriculture minister, Mr Naren De who has often been accused of supporting GM crops by the anti-GM lobby in the state, confirmed the stand taken by the commission and said, " The state government has yet to take a decision in this regard."

There was a huge outcry over field trials of GM crops because the trials were permitted even before the state government had set up its regulatory bodies, either at the state level or district level. Citing reports by the monitoring authority, Bidhan Chandra Krishi Viswavidyalaya professor TK Bose, a member of the commission, alleged that Maharashtra Hybrid Seeds company (Mayco) had conducted illegal field trials on Bt brinjal and Bt tomato without following bio-safety measures and monitoring as suggested by the Department of Biotechnology at the Centre, although they had only been given permission for trials on Bt rice and Bt okra (ladies finger).

<http://www.thestatesman.net/page.arcview.php?clid=6&id=197714&usrsess=1>

Signature campaign in Italy against genetic engineering

Nearly 30 Italian groups representing farmers, consumers and environmentalists on Wednesday launched a nationwide signature campaign against genetically modified food.

"The unprecedented initiative for a popular debate aims to collect at least three million signatures," said spokesman Mario Capanna, once the leader of Italian student protests in 1968 and today the head of the Foundation for Genetic Rights.

The 29 associations claiming to represent some 11 million people have formed a coalition, Italy/Europe Free of GMO (genetically modified organisms), and plan to hold more than 1,600 events between now and November 15 to get their message across.

"Italy is known around the world for the quality of its natural food products," Capanna said. "It has a vast heritage of biological diversity that should not be threatened by GMO agriculture."

The coalition includes Italy's biggest farmers' unions, the main consumer associations, environmental groups such as Greenpeace and the Worldwide Fund for Nature as well as an association of blood donors and COOP, a large, left-leaning chain of cooperative stores.

Organisers hope to obtain an "unlimited moratorium" on growing genetically modified crops in Italy, where 14 of 20 regions have already declared themselves "GMO-free."

"This isn't 'technophobia'," Capanna said. "We want a strictly scientific approach, we want more research."

He added: "The consequences of these products have to be studied before they leave the laboratories ... to avoid any risk of mishap."

http://news.yahoo.com/s/afp/20071003/sc_afp/italyagricultureenvironmentbiotechgmo

Study finds organic soil will produce better crops

Recently I attended a seminar, sponsored by Michigan State University, about R current techniques for using compost on organic farms. I learned that the easy part of becoming an organic grower is to stop using synthetic fertilizers and pesticides to grow their crops. The very difficult task is to learn how to compensate for that change by building up the quality of the soil so that they can begin to compete with conventional farmers, in terms of revenue and profits. There is now no doubt they can reach and ultimately exceed that goal, but it takes at least five years of hard work to get there.

At the seminar, the data to support this exciting agricultural reality came from Dr. Paul Hepperly, research director of the Rodale Institute in Kutztown Pa., (www.rodaleinst.org). Dr. Hepperly supervises a research project that began 27 years ago. Since then, the folks at the institute have managed two farm fields situated right next to each other, divided by a buffer zone of native grasses.

Both fields have been producing identical crops each year for all that time. One field has been managed using the latest techniques of conventional farmers. The other field has been managed with the newest organic farming techniques. In the first five years of this project, conventional farming methods out-produced the organic system every year. But in five years the organic system caught up and by the 10th year, the differences between the fields were very impressive.

The critical difference is that after 27 years, the quality of the soil of the conventional system is exactly the same as it was 27 years ago in terms of fertility, water drainage, water retention, soil microbial activity, and structure. The soil in the organic field on the other hand has been improved so much that it not only produces superior crops, it is now almost impervious to the impact of drought -- a farmer's nightmare. The organic soil stores sufficient water to get the crop through very dry periods, while at the same time the crop in the adjoining field suffers stress and much lower productivity. In years with normal rain, the organic field consistently produces more bushels

of corn or more bushels of soybeans and has been the winner for more than 15 years without exception.

Over the years, the conventional field has needed more and more fertilizer and pesticides per acre to maintain crop production levels. The organic field, over time, requires almost no fertilizer and no pesticides. The key is that compost is spread on the organic field every four years, and cover crops such as ryegrass or buckwheat are planted in the fall every year. In simple terms, the successful organic field gets a shot of organic material every year and every four years it gets a boost of beneficial soil microbes. While it takes a few years to establish, the organic system is proven to be more productive.

Next week in this column I will translate this information into the techniques I believe gardeners can follow to achieve the same benefits -- healthy landscape plants with little need for fertilizer, water, or pesticides.

<http://detnews.com/apps/pbcs.dll/article?AID=/20070908/OPINION03/709080385/1038/LIFESTYLE01>

Pesticides block nitrogen fixation, decrease crop yields

A new report by scientists from four universities indicates that some chemical pesticides interfere with nitrogen fixation, a natural process that many farmers depend upon to boost crop yields. In that process, certain plants called legumes have nitrogen-fixing bacteria living within their roots. The bacteria remove nitrogen from the atmosphere and convert it into a natural fertilizer. The plants then release the usable nitrogen into the soil. Taking advantage of this process, farmers often plant legumes such as alfalfa and soybeans to provide nitrogen to subsequent crops like corn that require large amounts of fertilizer.

The new research shows that certain commonly used pesticides reduce nitrogen fixation and yield in alfalfa plants. According to the authors, these impacts may lessen the nitrogen available in the soil for subsequent crops, decreasing the value of crop rotations and leading to increases in synthetic fertilizer use.

By contrast, organic agriculture, which avoids the use of chemical pesticides, allows nitrogen fixation to flourish and enhance long-term crop yields.

http://www.ucsus.org/food_and_environment/feed/feed-september-2007.html#4

Article: GEAC's poor record of regulation

Bhaskar Goswami

Reforms in India are expected to replace control and licensing with regulations that will benefit both industry and the people. The report card on the performance of the Genetic Engineering Approval Committee (GEAC), however, shows no evidence of this balance. Instead, what we find is an evident and inherent bias in favour of industry, while farmers and consumers have been left on the margins.

Set up by the Ministry of Environment and Forests as an inter-ministerial body, the GEAC is meant to regulate research, testing and commercial release of genetically modified (GM) crops, foods and organisms. Considering the controversies surrounding the acceptance of GM foods and crops, and knowing the worldwide opposition to GM foods, the GEAC was expected to play a judicious role that goes beyond commerce. But recommendations and decisions from its last 79 meetings show that the nodal agency has swept under the carpet serious concerns about human and animal safety, as well as environmental contamination. Working in tandem with the biotech industry, the GEAC is turning India into a dumping ground for untested and risky GM crops and food.

Bt Cotton, the only commercially grown GM crop in India, was approved for cultivation in 2002. Since then, the GEAC has bent the rules to protect the interest of biotech companies. Beginning with three hybrids of Mahyco-Monsanto in 2002, it has now approved 135 GM cotton varieties of 16 companies. Despite calls for caution, many GM food crops like okra, rice, corn and brinjal are on the GEAC's menu this year.

There are principally three fronts on which the GEAC has failed.

Enforcing rules for trials:

Call it incompetence or connivance, the fact is that the GEAC has been unable to enforce rules and regulations governing GM crop trials. Under the 1989 Rules of the Environment Protection Act, the GEAC is the only body which is authorised to permit trials of GM crops. In 1998, the states governments of Andhra Pradesh and Karnataka protested against illegal Bt cotton trials being carried out by Mahyco-Monsanto. These trials were permitted by the Department of Biotechnology (DBT), which is a violation of the 1989 Rules. Instead of

disciplining the DBT, the GEAC declared that these trials are meant for 'experimentation and research' and therefore the permission is valid!

The regulator has failed to control the illegal proliferation of Bt Cotton across the country since 2001. It has itself violated the Environment Protection Act by allowing trials in states where State Biotechnology Coordination Committees and District Level Biotechnology Committees have not been formed. The State governments and farmers are not informed of these trials. In fact, the GEAC itself is not aware of the locations of all the trials and, naturally, monitoring is inadequate. No wonder some farmers who were involved in the field trials of GM food crops even sold the produce after harvest. Such reports on contamination of the food supply chain as well as neighbouring fields have poured in from various parts of the country, but have rarely been discussed in the GEAC meetings

Carrying out biosafety tests:

Last year, public outcry over lack of biosafety tests on Bt Brijal led to the formation of an expert committee to evaluate the biosafety data. Surprisingly, no such evaluations are being carried out for other food crops that are being considered for trials in the field. The reasons for this are not difficult to figure out. Many GEAC members, who are expected to take objective decisions, are themselves developers of GM crops and members of bodies sponsored by the biotech industry (see box). This is why the GEAC never penalises any biotech company for violation of norms and inadequate biosafety tests.

Meanwhile serious health impacts are being reported from the field. More than 12,000 sheep were killed last year in Andhra Pradesh after grazing in Bt Cotton field. An alarmed Director of the State's Animal Husbandry Department urged the GEAC to carry out rigorous biosafety tests and also asked farmers not to graze their animals in Bt cotton fields. Yet the GEAC brushed aside these concerns.

Biotech developers have argued that there is no proven cause-and-effect relationship between Bt toxins and the deaths of these animals; the toxin is intended to affect insects with alkaline stomachs, not mammals which have acidic stomachs. However, there is empirical evidence that cellulose-rich livestock feed makes the stomach alkaline and results in the toxin surviving longer. There is also some evidence of toxin-induced impacts on neurological systems of animals.

Prior to this, cotton workers in Madhya Pradesh had reported allergic reactions to Bt cotton. Bt Cotton farmers in Punjab have also reported skin allergies among workers engaged in harvesting. None of these have been investigated by the GEAC.

One-sided inputs for decisions:

Inserting an alien gene into a plant might pose serious health risks to humans and animals, which is why rigorous biosafety tests are essential. Unmindful of this, the GEAC relies on the data produced by the biotech companies instead of independent research by government agencies. This data is treated as proprietary information and is neither peer-reviewed nor put in the public domain for scientists to evaluate. When the Indian Council for Medical Research can make clinical trial data on biomedical and health-related studies public, why cannot the same yardstick be applied to GM crops and food? This is nothing but suppression of science and a cover-up strategy.

Not just biotech companies, but influential traders of agricultural commodities too are being patronised by the GEAC. Running the risk of rejection of contaminated rice by Europe, Basmati exporters lobbied hard and brought in a ban on GM rice trials in the Basmati belt, but not for the rest of the country where paddy is cultivated. Despite a ban on import of GM food, import of GM soybean oil has been going on for years with the knowledge of the government. Further, despite knowing that testing facilities and protocols for GM presence have yet to be developed, imports of GM food have been permitted provided they are labeled. Clearly, trade interests of private companies score over safety of farmers' and consumers.

Failure of the regulatory mechanism has evoked strong reactions from some states. The Agriculture Ministers of Kerala and Orissa have announced that they will not allow any GM trials in their states. Farmers' movements have uprooted and burnt fields of GM rice in Haryana and Tamilnadu for violation of GEAC norms. Officials from the states of Uttar Pradesh, Chattisgarh, and West Bengal have written to the Centre pointing out irregularities during field trials on GM brinjal, okra and rice. Yet the GEAC has ignored all calls to exercise caution.

While hearing an appeal on safety of GM products, the Supreme Court, through its order on 8 May 2007, clearly upheld the importance of biosafety. However, the GEAC during its subsequent meetings has deliberately misinterpreted the decision and approved fresh field trials. That even the Supreme Court's order is not considered sacrosanct by the GEAC is a clear indicator of things to come.

A regulator that does not adhere to the law of the land and is also unable to protect the interest of farmers and consumer itself needs to be regulated. There is an urgent need for an autonomous body, which includes all stakeholders, to regulate the GEAC. The health and environmental risks associated with GM crops are too serious to be disregarded.

Researchers warn of livestock extinctions

Over-reliance on just a few breeds of imported farm animals is putting others in poor countries at risk of extinction, researchers warned on Monday and called for the urgent creation of livestock gene banks.

Dependence on a handful of breeds like high milk-yielding Holstein-Friesian cows, egg-laying White Leghorn chickens and fast-growing Large White pigs is causing the loss of one breed on average every month, U.N. Food and Agriculture Organisation (FAO) scientists say.

"Valuable breeds are disappearing at an alarming rate," said Carlos Sere, director general of the International Livestock Research Institute (ILRI) based in Nairobi, Kenya.

"In many cases we will not even know the true value of an existing breed until it's already gone. This is why we need to act now to conserve what's left by putting them in gene banks."

Sere is keynote speaker at a major conference on Monday on animal genetic resources in Interlaken, Switzerland, where the findings of the latest FAO research will be presented.

The ILRI says 90 percent of cattle in industrialized countries come from only six very tightly defined breeds.

And many of the world's smallholder farmers are increasingly abandoning traditional animals in favor of higher yielding stock imported from Europe and the United States.

Sere says these exotic breeds offer short term benefits by promising high volumes of meat, milk or eggs. But he warns many of these breeds are ill-equipped to cope with unpredictable changes in foreign environments, or with outbreaks of disease.

LOCAL BREEDS SUFFER

Scientists predict Uganda's indigenous Ankole cattle -- easily recognizable for their huge horns -- could be extinct within two decades because they are being rapidly supplanted by Holstein-Friesians, which produce much more milk.

In northern Vietnam, local pig breeds accounted for nearly three-quarters of the sow population in 1994, researchers say, but that has now dropped to just 26 percent.

The ILRI says rich nations built their economies significantly through livestock production and that there is no sign that developing countries will be any different.

One billion people are involved in animal farming worldwide, it estimates, and more than two-thirds of the rural poor depend on livestock as an important part of their livelihoods.

"For the foreseeable future, farm animals will continue to create means for hundreds of millions of people to escape absolute poverty," Sere said in a statement.

The breeds most at risk are in Africa, Asia and Latin America, and he proposed steps including encouraging farmers there to maintain a variety of indigenous stock, letting them move animals over borders to escape droughts, civil strife, market fluctuations or disease, and setting up gene banks.

"In the U.S., Europe, China, India and South America there are well-established gene banks actively preserving regional livestock diversity," Sere said.

"Sadly, Africa has been left wanting and that absence is sorely felt right now because this is one of the regions with the richest remaining diversity and is likely to be a hotspot of breed losses in this century."

http://today.reuters.com/news/articlenews.aspx?type=scienceNews&storyID=2007-09-03T122406Z_01_L02880229_RTRUKOC_0_US-AFRICA-LIVESTOCK.xml&pageNumber=1&imageid=&cap=&sz=13&WTModLoc=NewsArt-C1-ArticlePage1

This fortnightly 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 education materials.