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SABP

The South Asia Biosafety Program (SABP) is an international developmental program initiated with support from the United States Agency for International Development (USAID). The program is implemented in India and Bangladesh and aims to work with the local governments to facilitate implementation of transparent, efficient and responsive regulatory frameworks that ensure the safety of new foods and feeds, and protect the environment.

SABP is working with its in-country partners to:

- Identify and respond to technical training needs for food, feed and environmental safety assessment.
- Develop a sustainable network of trained, authoritative local experts to communicate both the benefits and the concerns associated with new agricultural biotechnologies to farmers and other stakeholder groups.
- Raise the profile of biotechnology and biosafety on the policy agenda within India and address policy issues within the overall context of economic development, international trade, environmental safety and sustainability.

THE ECONOMICS OF GM FOOD LABELS: AN EVALUATION OF MANDATORY LABELING PROPOSALS IN INDIA

[Editor's note: The following is a summary of the discussion paper by Sangeeta Bansal, Jawaharlal Nehru University, and Bharat Ramaswami, Indian Statistical Institute, which was released by the International Food Policy Research Institute (IFPRI). The paper is available to download as a PDF from the IFPRI website at http://www.ifpri.org/pubs/dp/IFPRIDP00704.pdf or at the SABP website at http://www.agbios.com/docroot/articles/07-165-001.pdf.]

Labeling of genetically modified (GM) foods is a contentious issue and internationally, there is sharp division whether such labeling ought to be mandatory. This debate has reached India where the government has proposed mandatory labeling. In this context, this paper evaluates the optimal regulatory approach to GM food labels. The paper argues that if health concerns are widespread, then the appropriate response consists of prescribing quality standards. Labeling, on the other hand, is useful whenever there are some consumers (but not all) who care about certain food characteristics that are not evident from visual inspection. The case for mandatory labeling stems from the goal of providing greater information on food characteristics thus facilitating more informed consumer choice.

A common argument for mandatory labeling that illustrates these supposed impacts is the following. In the absence of labeling, consumers cannot distinguish between GM and GM-free foods. Firms supply only GM food and because of ignorance, even those consumers that are averse to GM foods end up consuming these foods. Mandatory labeling informs these consumers who accordingly shift demand to GM-free foods, which therefore results in the supply of these foods to meet their preferences. Thus, in the absence of mandatory labeling, consumers have no choice but to consume GM-foods. On the other hand, mandatory labeling results in provision of both GM and GM-free foods, and the consumer has the choice of consuming according to her or his preferences. This seemingly reasonable argument fails to hold up, however, whenever labeling involves fixed costs.

The reason is that a complete justification of mandatory labeling must include a demonstration that the market on its own would fail to provide the information and choice that mandatory labeling can provide. Product differentiation with voluntary labeling is a market response to varying consumer preferences. Therefore, the mandatory labeling case would have to be compared with voluntary labeling rather than the no labeling case. So can mandatory labeling achieve outcomes different from voluntary labeling? The paper shows that this is not the case in most situations. The paper goes on to explore the special set of circumstances, where mandatory labeling makes a difference to outcomes. If these outcomes are intended, mandatory labeling is justified; otherwise not.

The costs of GM labeling stem from the fact that identity preservation is required to certify foods as GM-free. Hence GM food labeling involves the cost of maintaining a parallel distribution chain.

An important assumption of this paper is that the labeling cost is borne by the suppliers of GM-free foods. When non-GM foods that command a price premium over the GM products (at least for the first generation of GM foods that involve no significant benefits to the consumer), the onus is on the producer who claims GM-free status to be able to prove it. Suppliers of GM foods who label their products accordingly do not have to prove so and therefore do not have to incur the costs of segregation and identity preservation.

BIOTECH COTTON SOWING PLAN IN DOLDRUMS

Business Recorder – June 18, 2007

ISLAMABAD - The government plan to officially start the biotech (Bt) cotton sowing is in doldrums after the environment ministry rejected the Bt cotton variety developed by National Institute for Biotechnology and Genetic Engineering (NIBGE), official sources told Business Recorder on Sunday [June 17].

"It will take another two years or so to grow Bt cotton, which is important for Pakistan to increase the cotton production. This is really a serious blow to the government's efforts to officially allow and encourage Bt cotton sowing production in the country", the sources added.

The rejection will leave the country far behind India and China, which were first countries in the region to have introduced the new varieties.

Certain reports suggest that India's cotton production has been increasing at 20 per cent per annum for the last few years and the main reason for this is believed to be the timely

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ACTIVITIES

CALENDAR OF EVENTS

INDIA

Event	Organization	Date	Place
Biosafety Awareness and Capacity Building	Vagyanik Drishtikon and Ministry of Environment & Forests (MoEF)	July 18 to 20, 2007	Auditorium of Tagore International School, Jaipur
Awareness workshop on GM crops	Department of Biotechnology (DBT), MoEF and Biotech Consortium India Limited (BCIL)	July 19, 2007	Paribesh Bhawan, Kolkata
Training programme for African nationals on 'Application of Biotechnology and its Regulations'	Indian Technical and Economic Cooperation and TERI University	July 27 to August 17, 2007	TERI RETREAT, Gurgaon, Haryana
ASSOCHAM Agriculture Knowledge Series on Agricultural Biotechnology: Opportunities and Challenges	Associated Chambers of Commerce and Industry of India (ASSOCHAM)	August 3, 2007	Taj Mahal Hotel, Kolkata
Pugwash-MSSRF International Dialogue on Bread and Biotechnology	M. S. Swaminathan Research Foundation (MSSRF)	August 7 to 10, 2007	MSSRF, Chennai
Agri BioBusiness 2007	Federation of Indian Chambers of Commerce & Industry (FICCI)	September 17 and 18, 2007	New Delhi

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action of the Indian government to have introduced the Bt cotton in the country.

The NIBGE's variety was cleared by the Ministry of Food, Agriculture and Livestock (MINFAL) early this year, according to the sources. However, the gene used by NIBGE in the new Bt cotton variety has become a center of controversy, the sources said.

MINFAL had chalked out a plan to start sowing of Bt cotton from the current Kharif season as it was almost sure that new variety known as "IRFH901" would be approved by the National Bio-safety Committee (NBC), a body comprised members from various ministries and headed by a senior official of the environment ministry.

After a presentation by NIBGE early this year, the ministry had decided to formally grow Bt cotton in area of about 5,000 acres in Sindh and Punjab during this cotton season, the sources said.

MINFAL and NIBGE were in hurry to get the new variety approved from NBC quickly after Prime Minister Shaukat Aziz called for immediate steps to introduce Bt cotton and grow it on mass scale in the country in order to increase overall cotton production.

"The Bt cotton variety has been tested for about five years and this has been cleared after calculating its value for cultivation and use," the sources said.

However, the NIBGE used the gene which was already used by US Monsanto and the NIBGE was required to get NOC from the former before the approval of the new variety from the NBC. The sources said that NIBGE had failed to obtain the required NOC.

According to assessment of NIBGE, MINFAL and other concerned organisations, the variations in test evaluations are only around 0.2 per cent, which are negligible. The new variety is efficient to resist bollworms and other leaf viruses of cotton, they said. The Pakistan Central Cotton Committee is responsible for evaluation of new cotton varieties, they added.

They said Bt cotton is no longer a new concept in Pakistan as this variety has been sown without getting the varieties tested and approved from the National Agriculture Research System, adding the Bt cotton, which is already grown in the country, without authorisation of the government.

The independent agricultural experts are of the view that the concerned government authorities are proceeding slowly in introducing the new technology in farming as the regional countries - China and India - were going well ahead of Pakistan. Most of the countries in North and South America and a considerable number of countries in Asia have made significant progress on introducing biotech crops for increasing productivity.

According to a recent report of the International Service for the Acquisition of Agri-biotech Application more than 20 million farmers will plant 200 million hectares of biotech crops in about 40 countries.

The report said that Bt cotton has contributed significantly to the yield increase in cotton in India from 308 kg lint per hectare in 2001-02 to 450 kg lint per hectare in 2005-06.

INSTITUTIONAL INTELLECTUAL PROPERTY (IP) POLICY TO BE ADOPTED BY HARYANA AGRICULTURAL UNIVERSITY IN INDIA

Dr. Saharah Moon Chapotin, USAID, and Dr. Karim Maredia, Michigan State University

USAID, through a partnership with Michigan State University (MSU), is providing mentorship and training in intellectual property management and technology transfer to agricultural universities in India. Recently, CCS Haryana Agricultural University (HAU) in Hisar, India was successful in gaining approval at the State Government level for an institutional IP policy developed under the project.

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Intellectual Property - *continued from page 2*

The HAU policy, the first of its kind in India, promotes technology development for Indian agriculture by encouraging innovative research and facilitating technology transfer to the private sector. As a key aspect of the policy, 60 per cent of license and royalty revenues go to HAU scientists and innovators. The Indian Council of Agricultural Research (ICAR) has recently released new guidelines for Intellectual Property Management and Technology Transfer/Commercialization. The HAU IPR Cell will implement their institutional IP policy in line with the ICAR guidelines and any other new guidelines and policies developed by the Department of Biotechnology in India.

Together with Kerala Agricultural University, where a similar IP policy is under development, HAU plans to offer training in developing IP policies to trainees from more than 40 agricultural universities throughout India, and thereby move the project beyond the pilot phase.

USAID and MSU are partnering with the USDA-Agriculture Research Service and Bioversity, a Consultative Group on International Agricultural Research center based in Rome, Italy, to implement the India Intellectual Property Management and Technology Transfer Project. Together these institutions also initiated a mentoring program and internships for IP specialists at agricultural universities in India and are offering technical expertise for IP training activities.

Institutional IP policies enable universities to capture value through technology licensing and enhance the effectiveness of public-private partnerships in delivering agricultural technologies to Indian farmers. IP policies are especially important in managing agricultural biotechnology, a rapidly expanding area of research and product development in India.

INDIAN BT COTTON FARMERS RAKE IN THE PROFITS

Financial Express - July 11, 2007

NEW DELHI, India - Cotton farmers have earned an additional income of Rs 7,039 crore (1 USD = 40 Rs, 1 Crore = 10 million) in 2006 after a 50 per cent increase in yield due to use of Bt cotton seed, a study conducted jointly by the Associated Chambers of Commerce and Industry India (ASSOCHAM) and IMRB International has revealed.

Introduction of two stacked genes into Bollgard II Bt cotton has benefited famers by making a saving on pesticide use to the tune of Rs 1,600 per acre. Bollgard II Bt cotton was allowed for commercial cultivation in central and western India in 2006 and according to ASSOCHAM-IMRB study, farmers growing conventional cotton spend Rs 2,900 per acre on pesticide use, while those growing Bt cotton (with one gene, cry 1 Ac) spend Rs 2,000 per acre and farmers growing Bollgard II Bt cotton spend Rs 1,300 per acre.

Thus the farmers growing Bollgard II Bt cotton have the advantage of saving Rs 1,600 per acre on pesticide use over those growing conventional cotton. Bollgard II Bt cotton has the advantage of controlling both bollworms and the sucking pest, *Spodoptera*, while Bt cotton (with one gene) controls only bollworm. The Bt technology does not totally eliminate pesticide use, it curtails the number of sprays said the study. The number of sprays was about 4.6 times less per acre for control of bollworm on Bt cotton, with one gene. The number of sprays was two times less per acre for control of *Spodoptera* on Bollgard II Bt cotton.

Bollgard II farmers earned a profit of Rs 15,136 per acre, while farmers growing Bt cotton (with one gene) earned a profit of Rs 12,541 per acre. Farmers growing conventional cotton earned a profit of only Rs 4,784 per acre the study said and added "this is despite the fact that Bt seeds are 2.5 times costlier than conventional seeds" and increased use of water and fertilisers. Another study conducted by ASSOCHAM in collaboration with Indicus Analytics found that area under Bt cotton increased to over eight million acres with twomillion farmers cultivating it.

FIELD TRIALS OF GENETICALLY MODIFIED RICE PLANT ENCOURAGING

The Hindu – June 30, 2007

MADURAI - Field trials of a genetically modified disease-resistant rice plant developed in the Madurai Kamaraj University (MKU) laboratory and conducted at three locations in the State have given encouraging results in the first phase. The Tamil Nadu Agricultural University (TNAU) in Coimbatore, to whom the plants were handed over, is now taking the process to the next stage wherein multi-location trials will be carried out for the 'white ponni' variety, developed after a seven-year research at the Department of Plant Biotechnology, MKU.

The tests, held at Coimbatore, Aaaduthurai and Ambasamudram, showed that the transgenic plants developed resistance for 'Sheath Blight' disease, common in paddy crop in the southern India.

K. Veluthambi, Professor and Head, Department of Plant Biotechnology at the MKU, told The Hindu on Friday that the trials lasted a few months since last October and after detailed studies the agricultural university decided to go for multi-location field trials.

Around 1,000 seeds of genetically modified rice plants were given to the TNAU for trials and it was found that the loss of yield due to 'Sheath Blight' disease could be prevented.

"The disease brings down the resistance power of the plant resulting in yield loss. This was contained by genetic modification," Dr. Veluthambi said.

While 'Sheath Blight' is a common occurrence in rice cultivation in southern States, the problem faced in northern States was 'Rice Blast.'

This trial stage was undertaken after getting permission from the Review Committee of Genetic Manipulation in the Department of Biotechnology, he said.

BIOTECH FIRMS STRUGGLE FOR FOOD BREAKTHROUGH

AFP - June 19, 2007

Metahelix Life Sciences, a biotech firm founded by five Indian scientists in 2001, says it is doing research that may lead to the development of insect-protected rice and high-yield corn.

Avesthagen, which like Metahelix is based in the southern Indian city of Bangalore, is working to devise better-yielding

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Struggle - *continued from page 3*

oilseeds and improve the tolerance of food crops to drought and salinity.

But a breakthrough is eluding a two-billion dollar biotechnology industry struggling to replicate the success of BT cotton, which helped turn India into a net cotton exporter from a net importer in four years.

Biotech companies like Metahelix and Avesthagen use micro-organisms such as bacteria or substances like enzymes to make drugs and synthetic hormones, speed up industrial processes and devise better crop varieties.

"BT cotton is the hero of today, there are more waiting in the wings," Metahelix Managing Director K.K. Narayanan, a trained plant breeder, said in an interview in Bangalore, the hub of India's biotechnology industry.

"They are coming," is what Avesthagen CEO Villoo Patell told AFP about the would-be successors to BT cotton on the food production front.

Neither Narayanan nor Patell was willing to hazard a guess as to when the breakthrough will come, even as the biotech industry faces calls to help reverse a decline in food production that forced the country of 1.1 billion people to import wheat last year for the first time in six years.

"No country as large as India can afford to meet its food requirements through imports when we ought to be self-sufficient," Finance Minister P. Chidambaram told Bangalore Bio, the annual biotech industry event, on June 7.

Two-thirds of Indians depend on farming for a living, yet food output is growing slower than the population, said the minister, implicitly criticising biotech firms for not doing enough to boost agriculture.

Manufacturing, including car producers, is expanding 12 per cent and the services sector, such as mobile-phone service providers, 13 per cent, contributing to record economic growth of 9.4 per cent in the year ended March.

But the rate of agricultural growth fell from five per cent in the mid-1980s to less than two per cent in the past five years. Annual per capita food grain production declined from 207 kg (455 pounds) in 1995 to 186 kg last year, ominous for a country that wants to double food output in ten years.

India, the world's second-largest wheat producer, exported none last year and had to resort to imports this year after output fell short of domestic demand.

Despite the Indian economy speeding ahead at a sizzling pace in recent years, thousands of debt-ridden farmers commit suicide every year because of distress caused by crop failures.

That's worrisome for the Congress party-led coalition government headed by economist Manmohan Singh that came to power in 2004 on the promise of boosting the rural economy and the livelihoods of farmers.

Last month Singh said the government would spend six billion dollars to try to help poor farmers by investing in technology and infrastructure to bring crops to market more efficiently.

See the full article at: http://www.agbios.com/sabp_main.php?action=ShowNewsItem&id=8582

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EDITORIAL: COTTONING ON

The Financial Express (India) - June 19, 2007

The spate of approvals for commercial cultivation of Bt cotton hybrids by the Genetic Engineering Approval Committee—39 in the south, nine in central India, 18 in the north and 35 in central India—following the lifting of the court ban order on GM crop trials last month, speaks volumes about the growing popularity of a technological marvel which has boosted the prospects of cotton to an all-time high. In fact, the rush for Bt cotton seeds and the inability to restrain rising prices for these have even pushed the Andhra Pradesh government to raise the audacious demand that the seeds be brought under the provisions of the Essential Commodities Act. While this legislation is an outdated leftover from India's command economy days, the very demand is an indication of the primacy that Bt cotton seeds have taken in the agri-sector. A glance at the production figures makes one wonder how this crop has metamorphosed from its dubious reputation of being a cause for farmer suicides to one of the most successful farm experiments in recent years. Despite initial setbacks, cotton output has more than doubled to 21 million bales over the last five years.

Estimates made by the Planning Commission even indicate that unlike other major crops like foodgrain, oilseeds and sugarcane, for which demand is expected to exceed supply in 2011-12, the cotton crop is expected to run a large surplus. Numbers show that while demand for cotton is expected to go up by only around eight million bales to 28.7 million bales by 2011-12, the supply is expected to shoot up to 46 million bales. To prevent a market glut and an associated crash in cotton prices, India will need to figure out novel ways to enhance usage and propel demand (worldwide, that is). While the finance minister has called for the replication of the cotton success story in other crops, a recent report of the Planning Commission dubs the crop, along with oilseeds, as the only silver lining in an otherwise bleak agriculture scenario. We can only hope that accelerated growth in the biotechnology sector and breakthroughs in the development of new seed strains of other crops will give us similar productivity gains. It is time for Indian technologists to prove their mettle. The agriculture sector, in distress at the moment, deserves to be part of the modern economy.

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