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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.

REPORT ON ECONOMIC IMPLICATIONS OF INTRODUCING A GM FOOD LABELING POLICY IN FOUR MARKETING CHANNELS IN INDIA

Prof. Sangeeta Bansal, Centre for International Trade and Development, School of International Studies, Jawaharlal Nehru University and Dr. Guillaume Gruere (g.gruere@cgiar.org), International Food Policy Research Institute.

This article summarizes the main findings of a report on the economic implications of introducing a GM food labeling policy in four marketing channels in India. The report is currently under review, but can be made available upon request.

In 2006, India proposed a draft rule requiring the labeling of all genetically modified food and products derived thereof. We used primary and secondary market data to assess the economic implications of introducing a mandatory labeling policy for genetically modified (GM) food such as the one in the draft rule in India. We focus on four products that would likely be the first affected by such a regulation; domestic cottonseed oil derived from GM cottonseeds and imported soybean oil derived from GM soybeans (that are already on the market), and GM brinjal and GM rice (assuming these products are released in the near future).

We first identify the critical factors in assessing the effect of GM labeling. Among these, the consumer reaction to a label, the costs associated with selling GM or non-GM products, and the degree of enforcement are the most prominent ones. Available GM food consumer studies in India show a low level of awareness on GM food, a positive willingness to pay for GM except if they are associated with health risk, and a positive view of labeling but only if it does not cost too much. A consumer experiment also shows that some Indian consumers would switch to non-GM if they see a GM label, which suggests that mandatory labeling would potentially foster negative perception about the use of GM products. The literature also reports various types of costs

Table 1. Summary of the effects of GM labeling on the four marketing channels.

	Cottonseed oil	Soybean oil	Brinjal	Rice
Most likely market outcome	100% GM labeled, rare consumers switch to alternative products.	All GM labeled with non-GM potentially appearing over time.	First a few GM labeled (if feasible) then most GM labeled, some non-GM packaged and labeled	High quality basmati labeled non-GM, most of the rest labeled GM (if feasible).
Consumer effects	Minimal except if they switch to other vegetable oils.	Small except if they switch to other vegetable oils.	May pay more for potentially less healthy products (pesticide residues)	"Switching" consumers may pay more than without labeling.
Food industry effects	Labeling costs, possible small loss in market shares.	GM: labeling costs, small loss in market shares. Non-GM: possible price rise.	Contract-farming schemes for non-GM, and possibly for GM if there is a niche.	Contract farming scheme for non-GM.
GM producers	Mostly unaffected but potential small price decrease.	Exporters to India may lose market share.	Could face lower prices despite higher quality.	May experience price decrease.
Non-GM producer	Possible demand increase for other oilseed producers.	Potential gain with higher demand to avoid GM oil.	May obtain premium, but also subject to large implementation challenges.	Likely demand increase domestically.
Taxpayers	State inspections, documentation and highly costly infrastructures.	Import inspection, documentation, and highly costly infrastructure.	Statewide and country wide inspections, low test costs.	Country wide inspections for domestic, imports and exports.

Source: Authors

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CALENDAR OF EVENTS			
Event	Organized by	Date and Venue	Website
INDIA			
National Seminar -- Spices Improving Productivity and Quality with Focus on Himalayan Spices	Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu	October 22 - 24, 2009 Jammu	http://skuastkashmir.ac.in/
Sixth Solanaceae Genome Workshop	School of Life Sciences, University of Hyderabad	November 9 - 13, 2009 New Delhi	http://202.71.128.145/sol2009.org/home.html
Symposium on Biosafety and Environmental Impact of Genetically Modified Organisms and Conventional Technologies for Pest Management	The Academy of Environmental Biology, Lucknow, and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	November 20-21, 2009 Patancheru, AP	http://www.icrisat.org/
7th Pacific Rim Conference on the Biotechnology of *Bacillus thuringiensis* and its Environmental Impact	Indian Council of Agricultural Research, Department of Biotechnology, Calcutta University and All India Crop Biotechnology Association	November 25 - 28, 2009 New Delhi	http://7btconference.org/
Conference on Biotechnology Based Sustainable Agriculture	ILSI – India, New Delhi and ILSI International Food Biotechnology Committee, Washington DC	December 2009, New Delhi	http://www.ilsi-india.org/activities-events/forthcoming-activities.htm
INTERNATIONAL			
ABIC 2009: Agricultural Biotechnology for Better Living and a Clean Environment	National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency (NSTDA), Ministry of Science and Technology (MOST) and ABIC Foundation	September 22 - 25, 2009 Queen Sirikit National Convention Center, Bangkok, Thailand	http://www.abic.ca/abic2009/home/About.php
Measures of Hope and Promises Delivered: An International Conference on Socioeconomic and Environmental Impact Assessment of Biotech Crops	South Asian Regional Centre for Graduate Study and Research in Agriculture (SEARCA), International Service for the Acquisition of Agri-biotech Applications (ISAAA) and International Food Policy Research Institute (IFPRI)	September 29 - 30, 2009 Bangkok, Thailand	http://www.bic.searca.org/
International Conference -- Knowledge Management in Biotechnology Transfer and Adoption in Southeast Asia: Lessons Learned, Policy Issues and Directions	SEARCA	October 1 - 2, 2009 Bangkok, Thailand	http://www.bic.searca.org/
Biosafety Workshop -- Theoretical Approaches and Their Practical Application in the Risk Assessment for the Deliberate Release of Genetically Modified Plants	Wendy Craig (Biosafety Unit, ICGEB, Trieste, Italy)	October 12 - 16, 2009 ICGEB Conference and Meetings, Padriciano 99, I-34012 Trieste, Italy	http://www.icgeb.org/meetings-2009.html

Labeling - *continued from page 1*

associated with GM food labeling, especially segregation costs. Non-GM food products are only profitable if sold at a sufficient price premium. Lastly, a rapid review of existing laws in India suggests that enforcement would be extremely difficult in most cases.

We then proceed with the case studies and find that a mandatory labeling policy would generate specific market outcomes for each of these products, as shown in detail in Table 1. With GM labeling, virtually all cottonseed oil would be labeled as GM, with limited costs for most actors involved in the market chain, but also limited benefits for consumers (no choice) and high likelihood of mislabeled products. Labeling soybean oil derived from GM crops could affect market shares for edible oils at the benefit of domestic oils, and non-GM soybean oil could appear on the market at a very limited scale. Labeling GM brinjal would be very challenging and virtually impossible to enforce. Assuming it was effectively implemented, some non-GM brinjal would be sold at a price premium in high income retail outlets, while virtually all would be labeled GM, with high risk of fraud. A similar outcome would occur for rice, with high quality rice used for both domestic consumption and exports markets would be certified non-GM while most of the remaining rice producers would label their products as GM. But in the case of rice, any potential price effect would have significant implications for poverty and food security. If, in the short run, mandatory labeling would push large regions to remain non-GM and set up costly schemes to do so, to avoid the label, poor consumers would lose.

In each of the cases, labeling would generate significant adjustment costs for the industry and large enforcement costs, and consumer benefit would not always be visible, and would critically depend on the degree of enforcement. Pushing the industry to adopt a set of costly measures without sufficient strong oversight would simply render

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CREAM OF THE (WEB) CROP

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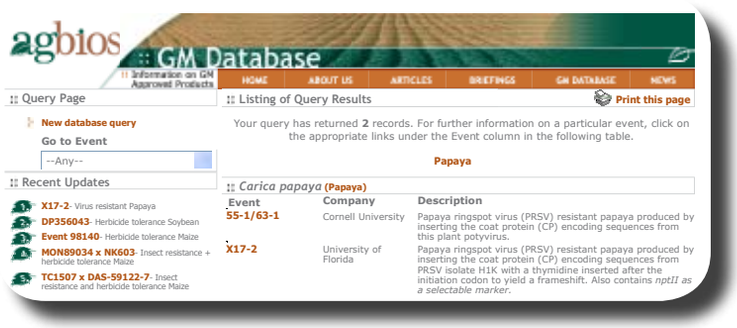
THIS MONTH'S PICK:

AGBIOS GM Crop Database

http://www.agbios.com/dbase.php



EXAMPLE OF SEARCH RESULTS PAGE

The GM Crop Database page of the AGBIOS website features a database of plants produced using recombinant DNA technologies (*e.g.*, genetically engineered or transgenic plants) that have been approved by regulatory agencies around the world. In addition to information on the event, a summary of any published safety assessments and links to documents provided by regulatory agencies are provided. Plants with novel traits that may have been produced using more traditional methods, such as accelerated mutagenesis or plant breeding are also included in the database, although such plants are only regulated in Canada.

Users of the database should note that regulatory approval should not be interpreted as an indication that the product is in commercial production. There are many examples of products that were granted regulatory approval but were never commercialized, or if they were, have been subsequently discontinued.

By setting conditions for more than one criterion from the options, users can construct boolean queries. For example, selecting "maize" as the crop plant and "herbicide tolerance" as the trait will display a listing of herbicide tolerant maize products.

The values in the Event Name selection box correspond to the identifiers commonly used by regulatory authorities and international organizations, such as the Organization for Economic Cooperation and Development (OECD).

AGBIOS updates the information in the database regularly, but users of the GM should bear in the mind that the information contained in the database is provided as a service without cost or warranty of AGBIOS.

GM DATABASE MAIN PAGE SHOWING EVENT NAME SELECTION BOX

PORTION OF PAGE SHOWING OVERVIEW OF ALL PRODUCTS CONTAINED IN THE DATABASE

the exercise useless for consumers and lead to widespread product misinformation.

In fact, we show that voluntary labeling of non-GM products could achieve better results with lower costs, and therefore appears to be an economically superior regulatory option. Still, if India was to go for mandatory labeling, provided enforcement is effectively assured, a well designed regulation with limited product coverage, a non-zero threshold for GM ingredients, and an informative labeling message (with seal of approval from the government) would lead to much better outcome and lower costs in India than the current draft rule, especially if it is accompanied by large awareness campaign on GM food, GM crops and the biosafety regulatory approvals they have to pass before reaching consumers.

STAKEHOLDER MEETING ON THE FINALIZATION OF GUIDELINES FOR THE SAFETY ASSESSMENT OF FOODS DERIVED FROM GENETICALLY ENGINEERED PLANTS IN BANGLADESH

A draft set of guidelines for the safety assessment of foods derived from genetically engineered plants were discussed at a stakeholder meeting held at the Bangladesh Agricultural Research Council (BARC) on August 17 and 18, 2009. The meeting was jointly organized by BARC and the South Asia Biosafety Program (SABP), with support from the United Stated Agency for International Development. A number of important issues were raised and editing of the draft guidelines was carried out during the meeting to develop a final draft. The final draft was approved by the participants for submission to the National Committee on Biosafety in Bangladesh (NCB) to be adopted as an official standard.

The meeting was inaugurated by Mr. C.Q.K. Mustaq Ahmed, Secretary, Ministry of Agriculture, Government of Bangladesh and Dr. Wais Kabir, Executive Chairman, BARC chaired the inaugural ceremony. In attendance were 37 participants from 23 different organizations including NARS institutes and representatives from other public and private organizations and NGOs. Dr. Vibha Ahuja from Biotechnology Consortium India Limited was present to provide an international perspective

Mr. M. Solaiman Haider, Deputy Director, Department of Environment and Member Secretary, NCB and the Biosafety Core Committee provided an overview to the stakeholders on the historical background to the development of the draft guidelines as an introduction to the meeting. The technical sessions of the meeting were started with a presentation from Dr. Ahuja of how safety assessment of foods derived from genetically engineered plans is carried out in other countries. The international consensus on food safety assessment developed by the Codex Alimentarius Commission was also detailed in a presentation.

This was followed by a detailed presentation of the draft guidelines by Mr. Monzur Morshed Ahmed, Senior Scientific Officer, Institute of Food Science and Technology, BCSIR and Prof. Dr. Emdadul Haque Chowdhury, Department of Pathology, Bangladesh Agricultural University, Mymensingh, as members of the drafting committeer. Dr. Md. Khalequzzaman A. Chowdhury, Member Director (Crops), BARC and head of the drafting committee chaired the discussion which allowed for input from the stakekolders and provided the opportunity to edit the text to incorporate suggestions and improvements.

Based on these discussions, Mr. Solaiman Haider presented a roadmap for the implementation of the draft guidelines and Prof. M. Imdadul Hoque, Country Coordinator, SABP proposed an outline for the institutional responsibilities within the regulatory framework of the draft guideline. The proposed institutional structure will be submitted to the NCB together with the draft guidelines for adoption in the near future.

The guidelines for food safety assessment of food from genetically engineered plants, once approved by the NCB, will add to the Biosafety Guidelines currently in force in Bamgladesh covering contained use of genetically engineered organisms and confined field trials with genetically engineered plants. Bangladesh is moving forward to put in place a comprehensive regulatory system to ensure that the products of modern biotechnology can be safety utilized in the country.

This recently published article may be of interest to readers of the SABP newsletter.

Reducing uncertainty in regulatory decision-making for transgenic crops -- More ecological research or clearer environmental risk assessment?

GM Crops, January/February 2010, Volume 1, Issue 1, pp 1-7.
By Alan Raybould

Ecological research and environmental risk assessment are similar in that they address interesting problems by formulating and testing hypotheses. They differ in the types of problem that are interesting, the characteristics of good hypotheses to solve those problems, and the methods for rigorous testing of hypotheses. It is important to recognise the differences between environmental risk assessment and basic ecological research because confusing them can lead to ineffective risk assessment and missed opportunities to advance ecological theory. Uncertainty in regulatory decision-making about transgenic crops may be reduced more effectively by clarifying the purpose and structure of environmental risk assessments than by further research on the ecology of the crops.

See the full article at http://www.landesbioscience.com/journals/gmcrops/

We welcome reader comments or suggestions. E-mail your letters to: nringma@agbios.com **Mail your letters to:** The Editor, SABP Newsletter, P.O. Box 475, Merrickville, Ontario, K0G 1N0 Canada

SABP CONTACTS

South Asia

Dr. Vibha Ahuja
General Manager
Biotech Consortium India Limited
Anuvrat Bhawan, 5th Floor
210, Deendayal Upadhyaya Marg
New Delhi 110 002 India
Tel: 23219064-67
Email: vibhaahuja@biotech.co.in

Others

AGBIOS
106 St. John Street
P.O. Box 475
Merrickville, Ontario
K0G 1N0 Canada
Tel: +613-269-7966
Email: info@agbios.com

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