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Honduras

Biotechnology

Annual Report

2008

Approved by:
Linda Eilks, Agricultural Attaché
U.S. Embassy

Prepared by:
Ana Gomez, Agricultural Specialist

Report Highlights:
Honduras is the only country that allows field testing and commercial production of biotechnology crops in Central America. Currently, there are 6,000 hectares with commercial production of BT (MON 810) and RR (NK 603) corn. In addition 1,775 hectares of Herculex I have been approved for field trials. The Government of Honduras (GOH) has regulated biotechnology since 1998. It has a National Committee of Biotechnology and Biosecurity composed of technical scientists from ten public and private institutions. The Committee evaluates the requests for field trials and commercial liberation. In September 2008, Honduras ratified the Cartagena Biosafety Protocol.

Includes PSD Changes: No
Includes Trade Matrix: No
Annual Report
Tegucigalpa [HO1]
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Executive Summary

Honduras is the only country in Central America and one of the five countries in Latin America that allows the field testing and commercial production of biotechnology crops. Honduras produces BT (MON 810) and Roundup Ready (RR) (NK603) corn for sale in the domestic market and for export and there is a pending approval for the YGVTPro (MON 89034). Currently there are approximately 6,000 hectares planted with BT and RR corn and field tests of Herculex I have been approved. Yet political factors influencing regulatory decisions currently limit the commercial production of BT and RR corn to areas away from native corn stocks.

Honduras imports corn and soybeans from the United States. Honduras' poultry, livestock, shrimp, and tilapia industries rely heavily on feed imports from the United States which may come from fields with transgenic/genetically modified (GM) grains.

Honduras' biotechnology system is sanctioned by the Phytozoosanitary Law of the Ministry of Agriculture and Livestock (SAG) and is regulated by the Biosecurity Regulation with Emphasis in Transgenic Plants. As part of Central American-Dominican Republic Free Trade Agreement (CAFTA-DR), the Phytozoosanitary Law was reviewed and modified.

The Biosecurity regulation assigns SAG's National Service of Plant and Animal Health (SENASA) as the responsible agency for creating the regulatory framework of agricultural biotechnology. A special committee, the National Committee of Biotechnology and Biosecurity composed of technical scientists from ten public and private sector institutions evaluate the request, make the scientific analysis and advises SENASA in the decision making process. Since Honduras ratified the Cartagena Protocol in September 2008, a new regulation regarding the protection of plant varieties is passing through Congress.

Biotechnology Research, Trade and Production

Honduras is the only country in Central America and one of the five countries in Latin America that allows the commercial production of biotechnology crops. The field tests and the approved products by crop are the following:

Approval Year	Company	Crop	Comercial Name	Event	Type of approval
1997	SYNGENTA	Banana		H53, H20, H51, H17	Field trial
1998	MONSANTO	Corn	YieldGard & Roundup Ready	MON 810 & NK 603	Field trial
2001	MONSANTO	Corn	YieldGard & Roundup Ready	MON 810 & NK 603	Commercial
2003	SYNGENTA	Banana			Field trial
2006	PIONEER	Corn	Herculex	TC 1507	Field trial
2006	MONSANTO	Corn		MON 88017	Field trial
2008	MONSANTO	Corn	YGVTPro	MON 89034	Field trial

Source: Experience of Honduras in the Development and Implementation Process of Regulations in Agro-biotechnology. Article by Rogelio Trabanino Young and Carlos Almendares Cardenas in Agricultural Biotechnology in Mexico, AgroBIO 2007.

Currently, Monsanto has approximately 6,000 hectares of corn planted for commercial production. Honduras produces BT (MON 810) and RR (NK603) corn for sale in the domestic market and for export. The commercial seed produced is sold to Argentina, Colombia and the United States. The corn is planted in the Departments of Francisco Morazán, Comayagua, Olancho, La Paz, and El Paraíso. It is not authorized to plant GM corn in the Departments of Intibucá, Lempira, and Gracias a Dios, or in the municipality of Pespire, Choluteca, as these communities requested that GM corn not be planted there.

The Pan-American Agricultural School (EAP), better known as Zamorano, is a channel for production and has been a research center for biotechnology crops during the last three years. They produce about 180 hectares of parental BT and RR per year. Zamorano carries out research contracted by seed companies to monitor the susceptibility of the seed to diseases and to evaluate the effectiveness of the seed to disease control. Research is conducted on seed propagation and the varied growing conditions in Honduras.

Honduras imports corn and soybeans from the United States. Honduras' poultry, livestock, shrimp, and tilapia industries rely heavily on feed imports from the United States which may be sourced from fields with GM grains. Also since 1999, Honduras has widely accepted U.S. Government food donations of soybean meal, and yellow corn for these industries.

Biotechnology Policy

Honduras allows field testing and commercialization of biotechnology crops. The opening of the country to biotechnology started when the Standard Fruit Company submitted the first request to evaluate genetically modified banana plants in 1996. As there were no regulations related to biotechnology at that time, the Seeds Certification Department of SAG initiated the Biosecurity Regulation with Emphasis in Transgenic Plants. The regulation was approved in 1998 through Agreement No.1570-98. The legal base for this regulation is the Phytozoosanitary Law created in 1994. As part of CAFTA-DR, the Phytozoosanitary Law was reviewed and modified by Decree No. 344-2005 published in 2006. The regulation also reflects the Agreement of Biologic Diversity.

The Biosecurity Regulation makes SENASA responsible for the regulatory framework of agricultural biotechnology. The regulation also provides the procedure to evaluate a request and assigns the scientific analysis to the National Committee of Biotechnology and Biosecurity. It was also created in 1998 to provide advice to SENASA in the decision-making process. The Committee is composed of technical scientists from the following ten public and private institutions:

1. National Service of Plant and Animal Health (SENASA), Ministry of Agriculture and Livestock (SAG)
2. Directorate of Science and Agricultural/Livestock Technology (DICTA), Ministry of Agriculture and Livestock (SAG)
3. Focal Point of the Codex Alimentarius in the Ministry of Agriculture and Livestock
4. Ministry of Public Health
5. Ministry of Renewable Resources and Environment (SERNA)
6. Honduran Council of Science and Technology (COHCIT)
7. National University of Honduras (UNAH)
8. Honduran Foundation for Agricultural Research (FHIA)
9. Pan American School of Agriculture "Zamorano"
10. Standard Fruit Company

The requirements to request field testing and commercial liberation of an event are based in the Phytozoosanitary Law and the Biosecurity Regulation with Emphasis in Transgenic Plants. The process is the following: The companies submit their request to SENASA. SENASA's Director summons the Committee to review the request. Each institution in the Committee makes their analysis and depending on the questions, they continue to meet until a consensus is reached. The regulation for Biosecurity indicates that the Committee should provide an answer in 90 days. When the Committee reaches a consensus, they suggest the resolution to the Director of SENASA. However, the final political decision is consulted with the Minister of Agriculture and Livestock. The Director of SENASA notifies the resolution to the requesting company.

The estimated time until commercialization varies according to the questions or doubts that the Committee might have. In some cases, the Committee requests more information from field tests as part of the pre-commercial stage. This stage is usually conducted on one hectare of land. After the test stage is complete, the Committee could advise SENASA to extend the area from one hectare up to 500-600 hectares, depending on the company's request. The Committee recommends that companies have the field testing done within the

normal production cycles. The first cycle of harvest begins in May and/or June and the second cycle begins in August and/or September. As an example of the estimated time for commercialization, Monsanto started field tests for BT corn in 1997. After various evaluations and compliance for the requirements requested by the Committee, it was approved for commercial liberation between 2001 and 2003.

Between 2001 and 2003, Monsanto managed the following stages: Field test on one hectare, a second field test from one to 500 hectares, a pre-commercial stage of field test from 500 to 1,500 hectares, and the final commercial stage of more than 3,000 hectares. Pioneer started the field tests for Herculex I in 2005 and the Committee recommended the pre-commercial liberation in July 2008. The final political decision was given by the Minister of Agriculture on November 2008.

Political factors affecting the regulatory decisions of agricultural biotechnology are due to efforts to protect the native stock of corn in Central America from a crossing between native stock with the biotech corn. Subsequently, the commercial production of BT and RR corn has been approved in areas distant from native corn stocks.

The United Nations Environmental Program (UNEP) through the Global Environment Fund (GEF) project has provided funds to SERNA to develop a specific law on biosafety. SAG is working with SERNA so that the new proposed law does not duplicate regulations, which according to SAG's mandate have already been developed. The country requires labeling for the GM seed. It does not require labeling for packaged foods or feeds. There are no technology fees.

The Cartagena Biosafety Protocol was ratified by the Honduras Congress in September 2008. In reference to the intellectual property rights, the Law for the Protection of Variety Plants needs to be approved by Congress. This law protects the developer of the new varieties and the variety itself. The approval has been pending since 2001. Honduran officials normally participate in meetings of international standard-setting bodies related to biotechnology.

New Technologies

In Honduras, there are no agricultural products that have been developed or derived from animal biotechnology. There are no regulations being developed for products derived from modern agricultural technologies.

Marketing

Market acceptance for selling biotechnology products by producers and importers is well received. Particularly, producers that are using biotechnology see the benefits in the increasing yield that they received. The national average yield for corn is 3.7 metric tons per hectare; for BT corn it is 6.5 metric tons per hectare. The fruit and vegetable producers that grow crops for export find it very useful to rotate their crops with GM corn. This assures them that the fruit and vegetables exported are free of pesticides residues and pests. Consumer groups are uncertain about the benefits of GM grains because they have been influenced by wide spread negative information not based on science**.** Import approval of biotechnology products is provided by SENASA.

Two representatives of the public and private sector of Honduras (Rogelio Trabanino of Zamorano and Carlos Almendares of the Plant Health Division of SENASA) wrote a guideline that would be useful for the U.S. export community. Companies requesting a risk evaluation for a test trial or the commercial liberation of a biotechnology product must provide the following information to the Biotechnology and Biosafety Committee:

1 *Personnel involved*. Names, addresses, and telephone numbers of the people that have developed or supplied the event.

2 *Purpose of the evaluation*. Provide a detailed description of the purpose of the introduction of the event, including the experimental design and/or the proposed production.

3 *Description of the genetic material*. Provide a description of the desired or real characteristic of the modified genetic material. Also include how the characteristic differs from the parent non-modified organism (for example: morphologic or structural characteristics, activities and physiological processes, number of copies of the material inside of the recipient organism (integrated or extracromosomic) products and secretions and characteristics of growth.

4 *Transformation methods*. Country and place where the parent plant, the receptor organism and the vector were collected, developed and produced. Transformation methods and selection processes employed.

5 *System used to produce the event*. Provide a detailed description of the molecular biology of the system (For example: donor-recipient-vector) that will be used to produce the event.

6 *Place of evaluation*. Country and geographic location of the evaluation, specifying the exact description of the areas to be evaluated.

7 *Biosecurity measures*. Provide a detailed description of the processes and security measures that have been used or will be used in the country of origin, the countries that will be in transit and in Honduras, to prevent the contamination, liberation and dissemination of the production of the donor organism, the recipient organism and the vector, the constituent of each event and the event.

8 *Programmed destination*. Provide a detailed description of the programmed destination (including the final destination and all the intermediary destinations), uses, and/or distribution of the event (Example: greenhouses, laboratories, or place of the growth chamber, site of the field test, site of the pilot project, production, spreading, manufacturing site, proposed site of sale and distribution).

9 *Containment measures*. Provide a detailed description of the procedures, processes and security measures proposed that will be used to prevent the escape and spreading of the event in each of the programmed destinations.

10 *Method of final disposal*. Provide a detail description of the proposed method for the final refusal of the event.

Capacity Building and Outreach

In 2007 The United States Department of Agriculture's Office of Agricultural Affairs (OAA) in Honduras developed a series of conferences about the "Ten Years of Biotechnology." The U.S. speaker provided conferences about scientific studies done about the use of biotechnology. The audiences were the Minister of SAG and SAG Officials, the Minister of Natural Resources, officials from other GOH institutions, non-governmental organizations, journalists, and public opinion makers.

The OAA coordinates with Zamorano on biotechnology activities. In 2007 Zamorano organized a Biotechnology Conference with the participation of the Minister of Agriculture and Livestock. Through the USDA Cochran Exchange Program, members of the Biotechnology and Biosecurity Committee participated in biotechnology training.

Honduras' specific needs, strategies or new activities for agricultural biotechnology are described below.

1 Continued education and training activities for GOH, the private sector, universities, producers, exporters and the public at large to:

a) Address the food crisis and serve as a development tool by increasing food productivity and food security, reducing crop input costs and helping to alleviate poverty.

b) Acknowledge the global scientific consensus on the safety of twelve years of research on biotechnology products.

c) Address the environmental gain from decreased insecticide use, reduced soil erosion, stressing the potential for improved nutrition and disease prevention.

d) Raise the capacity to abide by global trading rules and apply science-based evaluation of food production methods and regulations.

2 Strengthen the alliance between the private sector and the GOH to:

a) Preserve native varieties of corn through the establishment of germ plasm banks or the financing of the production of local varieties.

b) Establishment of pilot projects, in key regions of Honduras, in which growers could see and compare the various qualities of GM corn (e.g. resistance to pests and disease, increased yield potential/profitability) vis-à-vis non GM corn.

c) Bolster food security via the positive impact on costs-of-production and yields, lessen the use of agri-chemicals, opens the door to research and development that will promote agricultural growth and reduce rural poverty.

c) Strengthen competiveness and food safety for exporters to comply with CAFTA-DR and other trade agreements in using biotech corn for cycle rotation of fruits and vegetables.

e) Enhance positive human health of biotech products (e.g., Fumonisins, present in local corn, causes spina bifida and Aflatoxins causes various types of cancer). Increasing the use of BT corn can decrease the incidence of these diseases.