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Guatemala

Agricultural Biotechnology Annual

GE Agricultural Crops

Approved By:
Henry Schmick, Agricultural Counselor
Prepared By:
Karla Tay and Barnett Sporkin-Morrison

Report Highlights:
Guatemala allows the importation of genetically engineered (GE) agricultural and food products, but has not approved the use of GE plants for agricultural production. In 2006, the Ministry of Agriculture, Livestock, and Food (MAGA) published risk-analysis regulations that potentially allow for the commercial production of GE plants and products. However, the Ministry of Natural Resources and Environment (MARN), which has final responsibility for approval, needs to update its environmental regulations related to GE agricultural and food products. Overall, the country lacks a complete regulatory framework to facilitate biotechnology adoption.

Section I. Executive Summary:

Major U.S. agricultural trade interests in Guatemala include animal feed and grains for human consumption. In 2011, Guatemala imported US$205 million of coarse grains, mainly yellow corn for

feed purposes, but also white corn for human consumption. Guatemala has no restrictions on the importation of genetically engineered (GE) agricultural products for human and animal consumption. The main concern of the institution responsible for the implementation of the Cartagena Protocol, the National Council of Protected Areas (CONAP), is the assumption that planting of GE plants could pose a potential risk for the biodiversity of the country. Guatemala has been declared by the United Nations as a center of biodiversity for many species, including corn. GE corn is perceived as a menace to the highland corn races, even though GE corn cannot grow in the highlands.

Section II. Plant Biotechnology Trade and Production:

There is no legal cultivation of GE crops within Guatemala, and Guatemala is a net importer of basic commodities, especially GE corn and soybeans from the United States. Guatemala imported close to 714,000 MT (metric tons) of corn (white and yellow) during calendar year 2011 (CY2011) mostly from the United States. Additionally, Guatemala imported 14,000 MT of soybeans for food processing and 277,000 MT of soybean meal largely from the United States.

Although Guatemala is the most populated and a leading economy within Central America, Guatemala continues to be a food aid recipient country marked by high levels of chronic childhood malnutrition and poverty. Guatemala annually receives about $25 million in food assistance from the international community. The United States is the largest bilateral donor mostly in the form of corn-soybean blend and vegetable oil donations.

Section III. Plant Biotechnology Policy:

Ministerial Agreement 386-2006 allows for the commercial production of GE plants. The Guatemala Ministry of Agriculture, Livestock, and Food (MAGA) is responsible for approving risk analysis conducted by interested producers. The Institute of Agricultural Science and Technology (ICTA) of MAGA is responsible for verifying on-site protocols presented as part of the risk analysis. The regulation considers simplified procedures for deregulated events. This regulation, in general, is intended to promote rather than impede the production of GE plants.

The Guatemalan Ministry of Environment and Natural Resources (MARN), however, has no regulation in place specific to GE plants. Guatemala's general environmental law is applicable to any commercial activity including agriculture and it calls for an environmental study to approve any commercial operation. Environmental studies vary in complexity and cost depending on the risk-category of the economic activity. At present, the environmental law considers GE a high-risk category activity placing a larger amount of scrutiny (and cost) on the technology.

The Guatemalan Congress approved the Cartagena Protocol in September 2003 by Legislative Decree 44-03 which was published in the official newspaper, the *Diario de Centro America*, Volume CCLXXII N. 72, on October 13, 2003. The Protocol was ratified and took effect in January 2005. The Point of Contact for the Cartagena Protocol in Guatemala is the Technical Office for Biodiversity (OTECBIO), which is part of CONAP. At present, CONAP is proposing a policy framework for biotechnology regulation, which some in academia and the private sector contend is not science-based and is overly restrictive.

In addition to the Cartagena Protocol, Guatemala is also a member of the World Trade Organization (WTO) and actively participates in Codex. Currently, Guatemala largely implements Codex guidelines regarding food safety and standards. The food processing industry in Guatemala is openly opposed to the labeling of GE food products.

In 2004, MAGA approved field trials of the Yieldgard gene in corn for Lepidopteron resistance, and the Liberty gene in cotton for glufosinate resistance, which are both deregulated events in the United States. The field trials were carried out but the process was so lengthy and time consuming that once finalized, the products were no longer of commercial interest. The University del Valle of Guatemala (UVG) also developed ring-spot resistant papaya which has not received approval to be tested in the field; a situation that does not encourage Guatemalan biotech research.

At present, commercially available GE corn is most suitable for Guatemala's lowlands and not for the Western Highlands (due to the higher elevation of that region). The lowland regions of Guatemala, mainly the South Coast and the Northern Department of Petén, have been home to hybrid corn varieties for over 30 years and currently boast the highest yields in Guatemala. In comparison, there are currently no GE corn options for the Western Highlands where corn production is marked by the use of saved or *criollo* seeds which have drastically reduced yields compared to hybrid varieties. The subject of coexistence has not been addressed by any regulation; however, it continues to be a subject that is closely associated with biotechnology.

Section IV. Plant Biotechnology Marketing Issues:

Guatemala's agricultural markets are marked by asymmetric information which lays the groundwork for market failures at all levels. Knowledge of biotechnology by farmers varies from the well informed to those who heard something many years ago about the negative health effects of biotech crops, to some who may illegally import biotech seed varieties used legally by Honduran farmers. Biotechnology has been viewed by the some in the civil society as a potential confrontational issue with Guatemala's rural indigenous community which has an historic cultural association with corn. This combined with the limited market within Guatemala for selling biotech seeds has not resulted in the private sector carrying out marketing activities at the farmer level with some limited exceptions. It is not expected that given input costs of biotech seeds that farmers who are not already using advanced corn hybrids would be able to adopt the GE technology.

Section V. Plant Biotechnology Capacity Building and Outreach:

The following U.S. government entities have carried out various activities to promote biotechnology adoption in Guatemala: U.S. Department of State (Embassy Science Fellowship and Bureau of Economic, Energy, and Business Affairs Biotech Outreach Programs) and the U.S. Department of Agriculture (USDA) with Cochran and Borlaug Fellowships. Since 2006, FAS/Guatemala has used all the various programs to continually support capacity building and research.

The most recent capacity building activity took place in Zamorano University in Honduras. Zamorano University, with support of the Inter American Institute for Cooperation in Agriculture (IICA), hosted a regional workshop to discuss the need to better coordinate biosafety discussions within Central America. The workshop had well-known speakers and experts, both at the scientific as the regulatory level, from the United States and South America. The workshop presented a more in-depth and

complete overview of the status of biotechnology adoption and biosafety implementation in the different Latin American countries -- both the challenges as well as the successes.