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## **Dominican Republic**

## **Biotechnology**

## **Annual**

## **2005**

### **Approved by:**

David G. Salmon, Agricultural Counselor  
U.S. Embassy, Santo Domingo

### **Prepared by:**

Carlos G. Suarez, Senior Ag Specialist and Fradbenin Escarraman, Marketing Assistant

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### **Report Highlights:**

In the Dominican Republic (DR), there is not commercial production of crops using biotechnology.

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Includes PSD Changes: No  
Includes Trade Matrix: No  
Annual Report  
Santo Domingo [DR1]  
[DR]

**SECTION I. EXECUTIVE SUMMARY**

In the Dominican Republic (DR), there is not commercial production of crops using biotechnology. However, *in vitro* culture has made a significant contribution to the progress of specific areas of agricultural production. Crops such as potatoes, plantains, strawberries, pineapple, orchids, and coffee have been produced on a massive scale, using this method, thereby facilitating their commercial exploitation.

The Dominican Republic is pro-biotech but does not have a regulatory system to control the domestic use or importation of genetically modified organisms (GMO). There are two government entities that are involved in setting biotech policy for the country, the IDIAF/CEDAF (Agriculture and Forestry Development Center – CEDAF) and the Ministry of Natural Resources and Environment, Biodiversity and Wildlife Division. These two groups appear to be working together, with IDIAF more focused on work to make the benefits of biotechnology available to the agricultural sector, while the Ministry of Environment is more focused on regulatory aspects, such as the passage of the Cartagena Protocol on Bio-safety.

## SECTION II. BIOTECHNOLOGY TRADE AND PRODUCTION

In the Dominican Republic, there is not commercial production of crops that have been genetically modified using biotechnology. However, *in vitro* culture has made a significant contribution to the progress of specific areas of agricultural production. Crops such as potatoes, plantains, strawberries, pineapple, orchids, and coffee have been produced on a massive scale, using this method, thereby facilitating their commercial exploitation. *In vitro* culture has also facilitated the introduction and propagation of materials of significant genetic value to the country, as is the case for the PHIA varieties of *Musaceae* from Honduras, which are tolerant to Black Sigatoka.

Low-tech tissue culture production systems established across the country have also played an important socio-economic role in benefiting small-scale producers. In the community of Los Dajaos near Jarabacoa, in La Vega province, a low-tech laboratory was established to serve a 52-member producer association. This laboratory operates under the guidance of this association and propagates the crops that it requests. This *in vitro* propagation system allows the growers to be self-sufficient in planting stock, since purchasing planting materials would be very expensive if done in commercial labs. The laboratory in Los Dajaos propagates strawberries, potatoes, and carnations to meet member demand. Future plans are to use this system as a model for establishing such "bio-stations" in other agriculturally strategic regions of the country.

## SECTION III. BIOTECHNOLOGY POLICY

### Country's Regulatory Framework

The Dominican Republic is pro-biotech but does not have a regulatory system to control the domestic use or importation of genetically modified organisms (GMO). There are two government entities that are involved in setting biotech policy for the country, the IDIAF/CEDAF (Agriculture and Forestry Development Center – CEDAF) and the Ministry of Natural Resources and Environment, Biodiversity and Wildlife Division. These two groups appear to be working together, with IDIAF more focused on work to make the benefits of biotechnology available to the agricultural sector, while the Ministry of Environment is more focused on regulatory aspects, such as the passage of the Cartagena Protocol on Bio-safety.

The general feeling among scientists in the agricultural sector is that the country is not adequately prepared to take advantage of these new technologies, products and services being developed around the world. Some experts feel that if the Dominican Republic does not act quickly to establish biotechnology, food and biodiversity regulatory frameworks, the country may be unable to derive the benefits of these new technologies and products. The resulting economic loss could ultimately stall other socially desirable research and development in the nation.

### Approved Biotechnology Crops

Because of the lack of a regulatory framework, there are no biotechnology crops currently approved for direct consumption, processing, or animal feed. Coexistence between biotechnology and non-biotechnology crops, especially in the case of organic crops which are an important Dominican exports, is a growing concern. There is no official policy on the subject but there is the beginning of a debate questioning the feasibility of co-existence of biotech crops with organic type crops. This is important since the DR is a major exporter of organic crops (plantains, coffee, cocoa) to the European Union and see this as an area where they can have a competitive advantage.

## Labeling

The DR does not require labeling on GMO ingredients or content in processed products. The movement to ratify the Cartagena Protocol could have an effect on this status quo. General labeling requirements on prepackaged foods is controlled by the Ministry of Industry and Commerce and is regulated by a sub-division of the Bureau of Norms and Standards (DIGENOR).

General labeling requirements are as follows: NORDOM 53, which is in place but not enforced, follows the *Codex Alimentarius* standard and should be in Spanish language. Details are described in the Food and Agricultural Import Regulations and Standards report (DR4013), available on the Foreign Agricultural Service website.

## Biosafety Protocol

The regulatory framework for biotechnology and biosafety is being prepared by the Ministry of Natural Resources and Environment and it is expected to be launched in late 2005. The legislative package is being prepared with the support of a United Nation Project for Biotechnology and Biosafety Regulatory Settings for the implementation of the Cartagena Protocol. The DR has not ratified the Cartagena Biosafety Protocol (CBP). The protocol has not yet been studied in detail and most people and government officials have practically no information on it. Workshops are scheduled to discuss the CBP, prior to ratification, particularly the economical and environmental implications. Specific aspects of labeling are being debated, such as the requirement of a statement that "it may contain" versus "it contains" GMO material.

## Trade Barriers

There are no specific regulations or policies restricting trade of GMOs. However, in the past few months, for the first time in the DR, several international non-governmental organizations have publicly questioned the safety of GMOs, generating significant press coverage.

## SECTION IV. MARKETING ISSUES

The pending legislation to ratify the Cartagena Protocol has the potential to affect trade in products that contain GMOs, since the issues of traceability and labeling are part of this agreement.

## SECTION V. CAPACITY BUILDING AND OUTREACH

In order to support capacity the development of biotechnology capabilities, the Superior Agriculture Institute (ISA) and the Agriculture and Forestry Development Center (CEDAF) are investigating the possibility of a biotechnology Masters Degree program.

In addition, the newly created Biotechnology and Biodiversity Center has partnered with a local ecological foundation (Punta Cana Ecological Foundation) to establish the Sustainability and Biodiversity Center. This center is intended to serve as a link for collaboration with U.S. universities to help adopt promising biotechnologies in the DR. The Center already has significant analytical capabilities, including DNA sequencing, spectrometry, and phytochemistry facilities. There are several ongoing projects, including bioprospection of endemic plants and marine species and the establishment of a medicinal plant germplasm.

**SECTION VI. REFERENCE MATERIAL**

Anon. NORDOM 53, Dirección General de Normas y Control de Calidad, Secretaría de Estado Industria y Comercio, Santo Domingo, Dominican Republic, 2002.

Perez, Rufino. Biotechnology in the Dominican Republic: Perspectives and Opportunities, ALIMENTEC,S.A. Santo Domingo, Dominican Republic, June 2005.

### APENDIX A

Table of Approved Biotechnology Products (The following is a partial list of deregulated products in the United States.)

Crop	Trait Category	Applicant(s)	Event(s)	Trait Description(s)	Reviewed Uses within the U.S.
Corn, Field Corn / Zea mays	Insect Resistance, Herbicide Tolerance	Aventis CropScience, AgrEvo	CBH-351	1) Lepidopteran resistant; Cry9C; from <i>Bacillus thuringiensis</i> (Bt) 2) Glufosinate tolerant; Phosphinothricin acetyl transferase (PAT); from <i>Streptomyces hygrosopicus</i>	Feed
Canola / Brassica napus, Brassica napus var. napus	Herbicide Tolerance	Aventis CropScience	HCN92	Glufosinate tolerant; Phosphinothricin acetyl transferase (PAT); from <i>Streptomyces viridochromogenes</i>	Food and feed
Canola / Brassica napus, Brassica napus var. napus	Phytate degradation	BASF	MPS961	Phytate degradation; Phytase; from <i>Aspergillus niger</i>	Food and feed
Cantaloupe / Cucumis melo	Delayed Fruit Ripening	Agritope Inc.	A	Delayed fruit ripening; S-adenosylmethionine hydrolase; from <i>E. coli</i>	Food and feed
Canola / Brassica napus, Brassica napus var. napus	Herbicide Tolerance	Rhône Poulenc Inc.	OXY-235	Bromoxynil tolerant; Nitrilase; from <i>Klebsiella ozaenae</i>	Food and feed
Corn / Zea mays	Insect Resistance, Lepidopteran Resistance	Ciba-Geigy Corporation, Mycogen	176	Lepidopteran resistant; Cry1Ab; from <i>Bacillus thuringiensis</i> (Bt)	Food and feed
Tomato / <i>Lycopersicon esculentum</i>	Insect Resistance, Lepidopteran Resistance	Monsanto Company, Calgene Inc.	5345	Lepidopteran resistant; Cry1Ac; from <i>Bacillus thuringiensis</i> (Bt)	Food and feed
Corn / Zea mays	Insect Resistance, Lepidopteran Resistance	Monsanto Company	MON809	Lepidopteran resistant; Cry1Ab; from <i>Bacillus thuringiensis</i> (Bt)	Food and feed