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**Report Highlights:**

While Colombia's regulatory environment remains friendly toward the adoption of biotechnology-derived crops and products, congressional anti-biotechnology initiatives pose a threat to further acceptance, and risk undermining future investments to benefit consumers and the agricultural sector. In 2022, planted area of genetically engineered cotton showed a 62 percent increase as compared to 2021, and genetically engineered corn production decreased by 17 percent, but planting area remained the second-highest figure after the 2021 record.

## Section I. Executive Summary:

Colombia remains receptive to adopting genetically engineered (GE) derived commodities and related technologies and has made significant progress in implementing regulations that facilitate biotechnology usage. However, political considerations have the potential to hinder the adoption of new technologies and inhibit liberalized biotechnology regulations. FAS Bogota (Post) is observing potential legislation that seeks to eliminate the use of transgenic seeds within self-defined “agroecological systems.” The U.S.-Colombia Trade Promotion Agreement (CTPA) propelled Colombia to become the second-largest Latin American market for U.S. agricultural exports. In 2022, U.S.-Colombia bilateral food and agricultural trade reached \$8.1 billion, often derived from genetic engineering,

In 2003, Colombia ratified the Cartagena Protocol on Biosafety (CPB) and in 2005 published [Decree 4525](#) that implements the CPB agreement. Since then, the Government of Colombia (GOC) has published various regulatory measures that outline new requirements and procedures for approving and using genetically engineered products in Colombia. Certain aspects of Colombia’s agricultural biotechnology regulatory framework remain under review. This process provides opportunities to engage GOC regulatory agencies to facilitate the adoption of science-based regulatory policies, especially on low-level presence (LLP), and other innovative technologies. In 2022, the GOC issued [Resolution 29291](#) for crops obtained using innovative technologies to define if the crop is subject to genetically engineered or conventional crop regulations. According to this resolution,<sup>1</sup> certain genome-edited products such as waxy corn, blight resistant rice, low-pungent mustard, and low raffinose<sup>2</sup> soybeans were reassessed and determined to fall under conventional agricultural product regulations.

The GOC established three distinct biotechnology technical committees to analyze the environmental, biosafety, and food safety impacts of genetically engineered products (See Part B, Policy). Resolution 4254 from the Ministry of Health and Social Protection (MHSP) established the requirements for labeling foods that use modern biotechnology. Various political and regulatory challenges, however, impede the uptake the usage and acceptance of biotechnology in Colombia. On September 8, 2015, the Constitutional Court ruled in response to a lawsuit that favored of mandatory labeling of genetically engineered products.<sup>3</sup> Despite the court’s then two-year deadline to develop mandatory labeling regulations, the GOC has yet to produce any final rules.

Separately, the GOC has attempted to establish an LLP threshold policy, but internal deliberations continue which impede this process. In September 2022, a bill to ban the use of GE seeds in “agroecological” production systems went before Congress and approved in the first House of Representatives debate.<sup>4</sup> In July 2023, [Law 2303](#), was enacted, which mandated that the Colombian

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<sup>1</sup> The regulation superseded the previous Resolution 29299, which provided regulatory frameworks and definitions for crops subject to genetically engineered or conventional crop regulations.

<sup>2</sup> A trisaccharide composed of galactose, glucose, and fructose and prevalent in soybeans and other crops.

<sup>3</sup> The ruling was a response to a lawsuit against Consumer Law 1480, Article 24, which outlined food labeling requirements but did not directly address genetically engineered products or labeling.

<sup>4</sup> Three additional debates are required for a bill to become law. See: [Proyecto de Ley 004 de 2002 Cámara](#). *Agroecology* in this context has been defined as “...a set of practices, scientific knowledge, ancestral knowledge, a social and thought movement. It seeks the formation of agricultural and livestock systems with technological and productive models; economically viable, socially fair, culturally acceptable, ecologically sustainable that optimize and stabilize food production with an environmental and ecological commitment.”

Agriculture and Livestock Institute (ICA) to maintain a special program to facilitate the introduction of “non-transgenic” banana and plantain varieties resistant and tolerant to Fusarium R4T.<sup>5</sup>

In 2002, GE-cotton was the first genetically engineered plant cultivated on a non-restricted commercial basis in Colombia. This was followed in 2007 when the GOC approved the use of GE-corn traits. Colombia approved cultivation of the first GE off-patent corn event in 2019. Last year, GE-corn remained as the mostly widely cultivated genetically engineered product. According to Post sources, GE-corn planted area in 2022 decreased 17 percent year-on-year to 118,992 hectares, but remained the second-best figure after the 2021 record. Conversely, GE-cotton planted area increased 62 percent to 12,115 hectares. Within each value chain, GE-cotton represents 87 percent of the total cotton area planted, while GE-corn represents 26 percent of total corn area planted.

Within the cut flower value chain, Colombia continues to produce genetically engineered blue carnations, roses, and chrysanthemums under greenhouse conditions for export to Europe, and GE-blue petal roses for export to Japan. Colombia continues to import vaccines containing genetically engineered components to control certain animal diseases (See Appendix C).

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<sup>5</sup> Fusarium Race 4 Tropical (R4T) (fusarium wilt) is a severe threat to the production of bananas in Colombia and Latin America. See: [Fontagro](#).

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## CHAPTER 1: PLANT BIOTECHNOLOGY

### PART A: Production and Trade

#### a) Research and Product Development

A range of Colombian organizations are producing significant research in the biotechnology sector. In 2019, ICA authorized the Colombian Grain Producers Association (Fenalce) to begin cultivating their corn genotype containing the TC-1507 (off-patent) event in Colombia's dry and humid Caribbean regions, Magdalena and Cauca River Valleys, Orinoquia, and the coffee region.

In addition, the Colombian Sugar Cane Research Center (CENICAÑA) is currently developing sugar cane varieties resistant to the yellow leaf virus as well as cultivars with increased sugar, biomass and salt, aluminum, and water stress tolerance. The International Center for Tropical Agriculture (CIAT) is researching genetically engineered rice, cassava, reduced cadmium cacao, and select grass cultivars, and School of Administration, Finance and Technological Institute (EAFIT) University is working on castor bean oleic content and *sacha inchi*, a perennial fruit with large, edible seeds. The Colombian Coffee Research Center (CENICAFE) is conducting biotechnology research on tobacco, the fungus *Beaveria bassiana*, and a coffee variety resistant to coffee berry borer. The International Corporation for Biological Research (CIB) is investigating potato varieties resistant to lepidopterous insects. Various Colombian universities and research institutes are also collaborating to develop rice and potato biotechnology varieties.

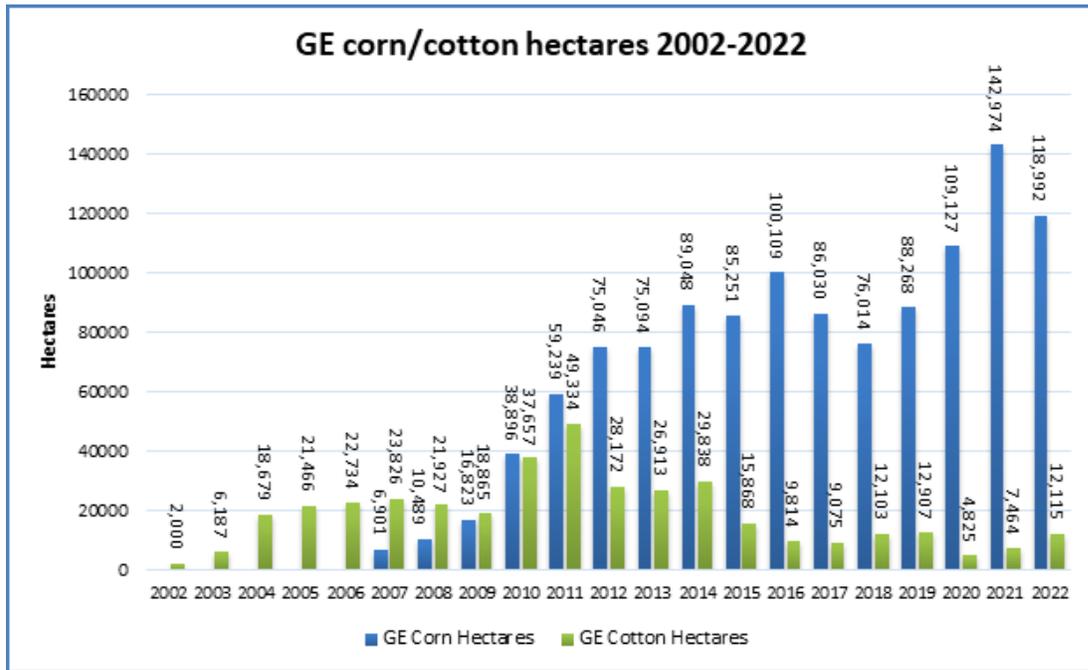
#### b) Commercial Production

Prior to 2006, the cotton varieties Bollgard and Roundup-Ready were the only non-restricted genetically engineered crops approved in Colombia. In 2007, the GOC approved the first stacked events, a cotton variety which combined the Bollgard and Roundup-Ready traits, as well as controlled plantings of GE-corn. In 2010, GE-soybean production was approved for commercial cultivation but only as an off-patent event by 2020. GE-blue carnations, blue petal roses and blue chrysanthemums are cultivated solely for export markets, and the current national area planted for these products is approximately 12 hectares.

Colombian farmers continue to adopt biotechnology. Colombian departments Meta, Tolima, Cordoba, Valle del Cauca, and Cesar have the highest GE-corn adoption per area planted, while 24 of 32 departments grow genetically engineered corn or cotton. In 2022, Colombia planted 118,992 hectares of corn, a 17 percent decrease year-on-year, but still the second highest rate in history after record 2021 figures. For GE-cotton, Colombia cultivated 12,115 hectares in 2021, a 62 percent increase year-on-year (See: Charts 1, 2, and 3).

There are pending applications for other crops and in different phases of approval (See Appendices A and B).

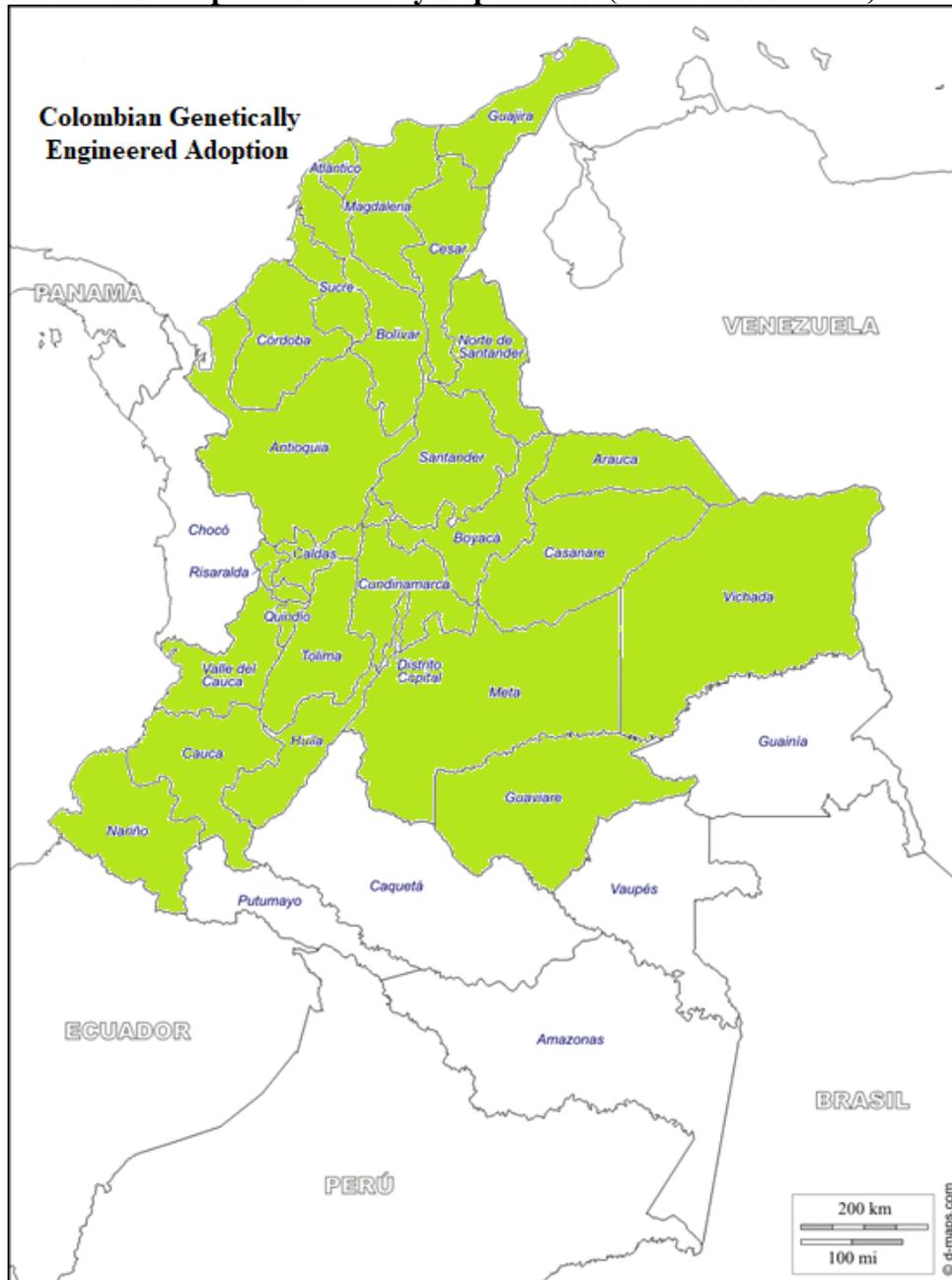
**Chart 1. Genetically Engineered Corn and Cotton Area Planted Calendar Year (CY) 2002-2022 (Ha)**



**Chart 2. Colombia: Genetically Engineered Crop Production by Department (Ha)**

| GE adoption per Department/Hectares |        |                 |       |
|-------------------------------------|--------|-----------------|-------|
| Corn                                |        | Cotton          |       |
| Meta                                | 40,012 | Cordoba         | 3,178 |
| Tolima                              | 20,969 | Tolima          | 3,154 |
| Cordoba                             | 18,922 | Cesar           | 2,067 |
| Valle del Cauca                     | 16,926 | Huila           | 1,958 |
| Cesar                               | 4,524  | Guajira         | 840   |
| Casanare                            | 3,487  | Meta            | 408   |
| Caldas                              | 2,553  | Valle del Cauca | 259   |
| Quindio                             | 1,870  | Cundinamarca    | 242   |
| Risaralda                           | 1,726  | Casanare        | 9     |
| Cundinamarca                        | 1,678  |                 |       |
| Arauca                              | 1,215  |                 |       |
| Cauca                               | 966    |                 |       |
| Vichada                             | 948    |                 |       |
| Bolivar                             | 745    |                 |       |
| Huila                               | 744    |                 |       |
| Santander                           | 698    |                 |       |
| Sucre                               | 491    |                 |       |
| Antioquia                           | 225    |                 |       |
| Magdalena                           | 180    |                 |       |
| Norte de Santander                  | 39     |                 |       |
| Guaviare                            | 31     |                 |       |
| Atlantico                           | 23     |                 |       |
| Boyaca                              | 15     |                 |       |
| Nariño                              | 5      |                 |       |

**Chart 3. Colombia - GE Crop Cultivation by Department (General Reference)**



**Data Source:** For Charts 1-3, data provided by ICA-Colombian Agricultural Institute.

c) Exports

Genetically engineered blue carnations and chrysanthemums are exported to Europe, and GE-blue petal roses to Japan. In 2022 area planted for both blue carnations, blue petal roses and blue chrysanthemums remains unchanged at 12 hectares. In the Japanese retail market, blue petal roses sell for approximately \$40-50 per flower (stem).

d) Imports

The United States supplies most GE-cotton seed (144 MT), and genetically engineered soybeans are imported from Brazil (200 MT). In 2022, Colombia imported approximately \$2.2 billion of GE-derived agricultural products from the United States, including corn, cotton, DDGS, soybeans, and soybean products (e.g., meal, oil).

e) Food Aid

Colombia receives limited food aid from the United States. Any food aid containing genetically engineered events and utilized for human consumption must have regulatory approval in Colombia.

f) Trade Barriers

The lack of an LLP policy, a recent congressional initiative to progressively eliminate the use of genetically engineered seeds, and [Law 2303](#) (mandating ICA to facilitate “non-transgenic” resistant varieties to Fusarium R4T), all have the potential to undermine Colombia’s regulatory environment for genetically engineered products and would negate certain benefits for consumers and the agricultural sector. It is possible anti-biotechnology initiatives will be introduced again during the next legislative year (July 2023-June 2024), or later.

**PART B: Policy**

a) Regulatory Framework

**Table 1. Legal Definitions**

| Legal Term (Spanish)                     | Legal Term (English)                | Law and Regulations Where Term is Used   | Legal Definition (English)   |
|--|-------------------------------------|--|--|
| Organismo Vivo Modificado (OVM)          | Living Modified Organism (LMO)      | Decree 4525<br>Resolution 91505<br>Resolution 91506<br>Resolution 957<br>Resolution 2535<br>Resolution 29291 | Any living organism that possesses a novel combination of genetic material obtained using modern biotechnology   |
| Organismo Genéticamente Modificado (OGM) | Genetically Modified Organism (GMO) | Resolution 4525<br>Resolution 72221<br>Resolution 4254   | Any living organism that has a new combination of genetic material that has been obtained through the application of recombinant DNA technology, its development or advances, as well as its parts, derivatives or products that contain them, with the ability to reproduce or transmit genetic info. Living modified organisms (LMO) referred in the Cartagena Protocol on biosafety and biotechnology are included within this concept. |

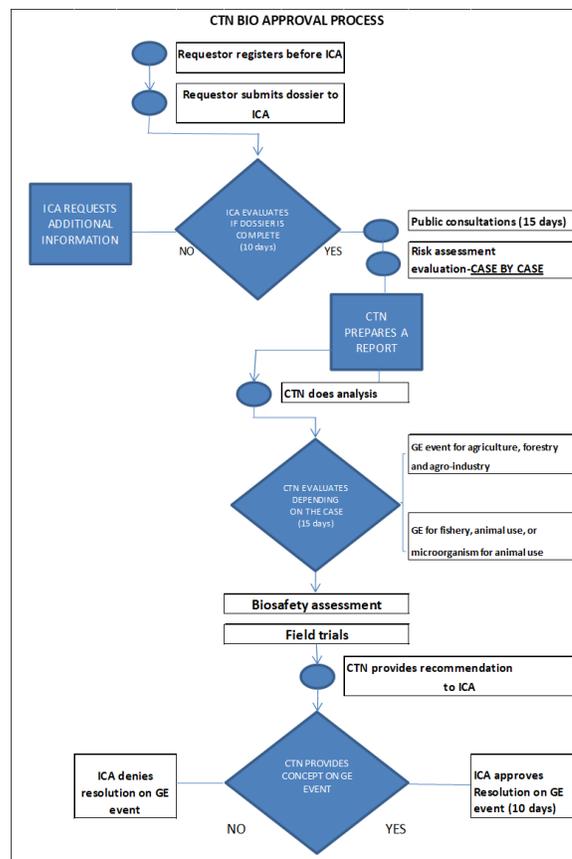
All genetically engineered products that are developed must go through the regulatory approval process whether intended for environmental release, ornamentals, for human consumption, or for animal feed. The following ministries participate in the regulation of agricultural biotechnology production and imports:

- Ministry of the Environment, Housing and Territorial Development (MEHTD)
- Ministry of Health and Social Protection (MHSP)
- Ministry of Agriculture and Rural Development (MARD), through the Colombian Agricultural Institute (ICA)
- Ministry of Science and Technology (previously Colciencias)
- National Institute for the Surveillance of Food and Medicines (INVIMA)

[Decree 4525 \(from 2005\)](#), established three interagency committees, consisting of the aforementioned ministries, which are responsible for biosafety issues as well as the evaluation and approval of biotechnology products. The committees responsible for biotech regulation are outlined below:

**The National Technical Committee for Agriculture, Fishery, Forestry and Agro-industry (CTN-Bio):** [Resolution 91506 from 2021](#), established the CTN-Bio's internal regulations for assessing genetically engineered events for non-food-related genetically engineered products. Figure 1 illustrates the CTN-Bio approval process, which was reviewed and amended in 2021 as per [Resolution 91505](#). The streamlined process allows for more predictable timelines.

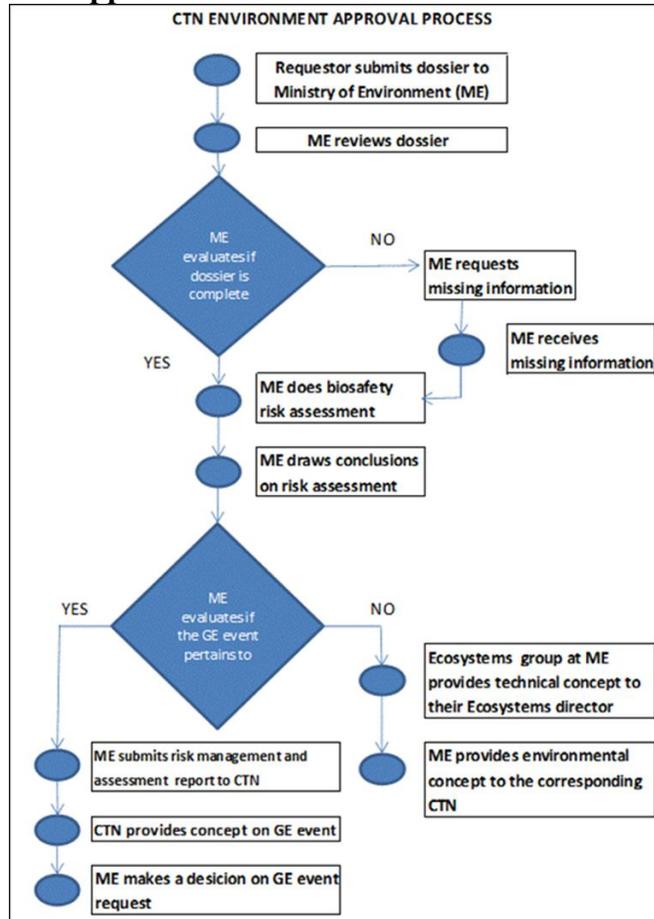
**Figure 1. National Technical Committee for Agriculture, Fishery, Forestry and Agro-industry Approval Process**



**The National Technical Committee for Environment (CTN-Environment):** CTN-Environment's function is to assess genetically engineered events that may impact the environment. To date, however, CTN-Environment has not received any requests to review genetically engineered events. However, in

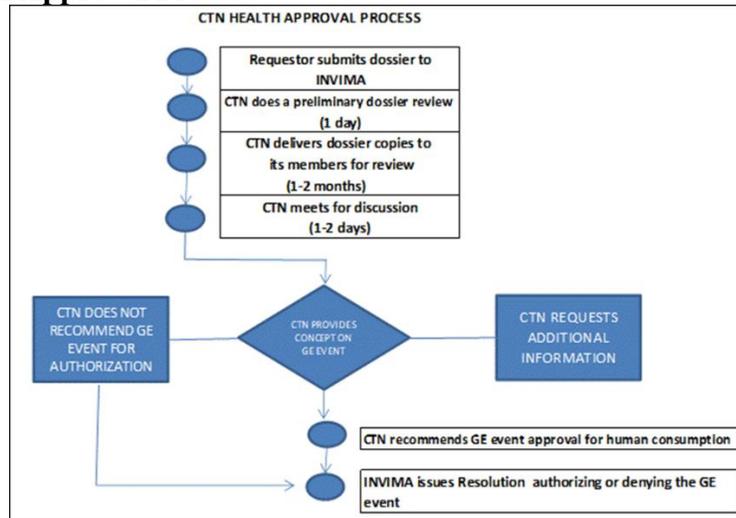
May 2010, MEHTD issued [Resolution 957](#) that describes the information that companies must submit for evaluation and the ministry's procedures for assessing genetically engineered events. Figure 2 illustrates the CTN-Environment approval process:

**Figure 2. CTN-Environment Approval Process**



**The National Committee for Health and Human Nutrition (CTN-Health):** CTN-Health's function is to assess the impact of genetically engineered products and by-products on human health. In 2017, MHSP issued [Resolution 2535](#) which transferred the responsibility of approving regulatory resolutions to INVIMA, which in turn has streamlined the approval procedures with predictable timelines. Figure 3 illustrates the CTN-Health approval process:

**Figure 3. CTN-Health Approval Process**



**b) Approvals and Authorizations**

The GOC must approve all genetically engineered events for commercial cultivation, food consumption, and animal feed. Both CTN-Bio and CTN-Health oversee the approval process for GE-derived feed and food materials, and committee decision timelines are not streamlined. These parallel timelines can result in internal asynchronous approvals (see Appendix B). Genetically engineered approvals for food expire after 10 years, at which point they must be re-approved. Under current submission guidelines, INVIMA has not provided additional requirements after the initial expiration renewal.

For a full list of biotechnology products approved for planting in Colombia, refer to Appendix A.

**c) Stacked Events or Pyramided Event Approvals/Authorizations**

All stacked genetically engineered events must be approved individually (by trait), and there is no official process to review stacked events. In 2017, CTN-Health established an internal procedure to facilitate the approval process for stacked events when their single events have already been approved. The procedure has reduced the current approval period and alleviated asynchronous approvals between exporting and importing countries.

**d) Field Testing**

Colombia requires field-testing for genetically engineered crop cultivation (see Appendix A) after a risk assessment is submitted to CTN-Bio for review and subsequent approval. Field testing must be completed in Colombia’s different agroecological regions, which lengthens the review.

**e) Innovative Biotechnologies**

Three research groups research genome editing: the CIAT Research Center, Agrosavia, and EAFIT University. The CIAT Research Center primarily focuses on herbicide-tolerant cassava, increased rice yields, virus and bacteria-resistant rice, fortified rice (iron and zinc), bean nutritional quality, cadmium

absorption in cacao, and deep root forage grasses and rice for capturing carbon. Agrosavia is developing reduced-toxin potatoes and phosphorus-altered rice.<sup>6</sup> EAFIT University is researching oleic content in castor bean.

[Resolution 29291](#) (from 2022), superseded Resolution 29299 which additionally covers genome-edited animals, microbes, and any other product using the technology, and creates a process to determine if genome-edited cultivars should be considered “living modified organisms” (LMO) or conventional organisms. The interested party is required to apply to ICA for review. Within a period of sixty business days, if no further information is required, ICA will determine if the new cultivar is considered genetically engineered and, therefore, if it is within the scope of regulation for GE-organisms. If deemed to be an LMO, the cultivar is required to go through the existing regulatory biotechnology framework. If the product is deemed not an LMO, the product is regulated by existing conventional crop legislation and regulations. ICA has reviewed four genome-edited crop submissions and concluded that the following crop varieties and traits (Table 2.) are not subject to biotechnology regulations.

**Table 2. Crops not Subject to GOC GE-Regulations**

| Crop           | Trait   | Evaluation Year |
|----------------|---|-----------------|
| Rice           | Resistance to bacterial panicle blight            | 2020            |
| Corn           | Waxy corn modified for altered starch composition | 2021            |
| Mustard leaves | Improved flavor profile                           | 2021            |
| Soybeans       | Low raffinose soybeans                            | 2022            |

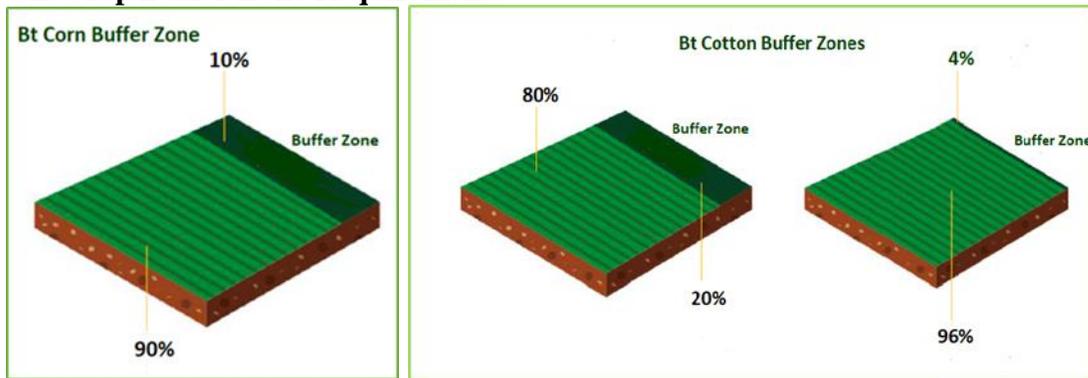
f) Coexistence

In 2006, ICA evaluated cross-pollination and found that genetically engineered and non-GE crops coexist without posing risks to non-genetically engineered crops. Regardless, cotton and corn farmers must apply the practice of buffer zones, or a natural barrier of fallow terrain, in compliance with ICA [Resolution 72221](#) (2020), that superseded Resolutions 682 and 2894 which establishes a buffer zone following the 80/20 or 96/4 (percent) scheme for cotton, and a 90/10 scheme for corn (Chart 4). Resolution 72221 also requires a 300-meter planting distance between genetically engineered and non-GE crops. See Part B, Section H, for more information.

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<sup>6</sup> Phosphorus-altered rice results in decreased phosphorus in the grain, but with higher levels in the tissue and leaves.

**Chart 4. GE-Crop Buffer Zone Requirements**



Data source: [Program MARI](#), Insect Resistance Management.

f) Labeling and Traceability

*Resolution 4254*

Colombia’s genetically engineered labeling requirements may impact the current GE-regulatory framework and the use of such technologies. In 2012, MHSP issued [Resolution 4254](#), which established labeling requirements for food derived from modern biotechnology. The resolution requires labeling information for product safety and risks such as potential allergenicity. In addition, labeling must address significant differences with the product’s conventional counterpart.

In 2015, the Constitutional Court of Colombia ruled in favor of mandatory labeling of GE-organisms in response to a lawsuit against Consumer Law 1480. Due to the decision, Congress was required to draft and implement legislation on mandatory labeling of GE-organisms within two years of the ruling. Despite the deadline, Congress produced no final rules. However, on August 14, 2019, a revised bill was submitted calling for mandatory labeling. The initiative only reached the first debate of the legislative process, which terminated in June 2020. No additional bills have been introduced under the 2023-2024 legislative calendar. Currently, Resolution 4254 regulates biotechnology labeling.

Resolution 4254 does not accept the use of statements such as “GMO free” and “does not contain GMO,” unless the manufacturer demonstrates and sustains that the claim is truthful and not misleading. On April 22, 2020, INVIMA issued [IVC-INS-LI15](#) that establishes the frequency for importers to submit laboratory results to certify that products labeled as “non-GMO” do not contain detectable modified genetic material. These guidelines are intended to reduce delays at ports of entry as lot-by-lot testing is not always required, preserving product shelf life, and alleviating testing costs. The testing requirement does not apply when the primary ingredients are not included in Circular [4000-3988-19](#). An increased number of imported packaged products entering the Colombian market include the “non-GMO Project Verified” or the “non-GMO/GE Process Verified” labels, which, as per current regulation, are considered equivalent to “GMO-free” claims. Therefore, manufacturers or importers must provide a supplementary label that clarifies the scope of the legend to be able to commercialize their products as per INVIMA’s Communication [4000-1071-18](#).

#### h) Monitoring and Testing

The GOC in 2009 issued Resolution 682, requiring GE-seed companies to adopt a “lifecycle stewardship” approach to guide producers, targeting genetically engineered cotton production. In September 2012, Resolution 2894 was issued to address the handling of GE-corn, outlining the regulatory expectations for farmers and genetically engineered seed companies. Both resolutions established a production and commercial road map for cotton and corn, the most widely grown GE-crops in Colombia. In 2020, ICA issued Resolution 72221 (combined Resolutions 682 and 2894), to improve and modify stakeholder responsibilities and standardize stewardship reporting. In 2018, the Colombian Association of Agricultural Biotechnology (Agro-Bio) released MARI, an insect resistance management program, to encourage producers to implement good agricultural practices and support pest resistance mitigation.

INVIMA conducts port of entry testing to check imported commodity shipments for unapproved GE-products destined as raw materials for food and feed. To date, there have been no detections of unapproved events. INVIMA also monitors products that have “non-GMO Project Verified,” “non-GMO/GE Process Verified,” and “non-GMO” claims, and requests that importers support their claims with laboratory results before commercialization (See Part B, Section G for additional information on labeling and testing).

#### i) Low-Level Presence Policy

Industry and commodity exporters have previously expressed concern that not all commonly traded GE-events have been approved in Colombia, the result which could delay shipments because of asynchronous approvals. As approval times for food, feed and environmental release are not parallel, the GOC initially considered a 5 percent LLP threshold in 2014. However, in 2019, Colombia’s National Planning Office began to address low-level presence in GE products destined for food use under the interagency sanitary and phytosanitary committee. It indicated that existing measures would be sufficient to address LLP concerns.

#### j) Additional Regulatory Requirements

There are no additional requirements for GE-products.

#### k) Intellectual Property Rights (IPR)

Colombia is a member of, and follows the guidelines for, the Convention for the Protection of Industrial Property, the World Trade Organization, G3 Mexico, the “Colombia and Venezuela Agreement,” and the Andean Community. As a member of the Andean Community, Colombia adopted the following regulations:

- Decision 351, Common Provisions on the Protection of the Rights of Breeders of New Plant Varieties
- Decision 391, Common Regime on Access to Genetic Resources (Hodson & Carrizosa, 2007)

In 2012, Colombia's high court declared accession to the International Union for the Protection of New Plant Varieties (UPOV) 91 unconstitutional due to the government's lack of consultation with Afro-Colombian and indigenous communities. Colombia has continued to follow provisions under the Andean Community Decision 345, currently in effect.

#### l) Cartagena Protocol on Biosafety Ratification

As a signatory (and host) to the CPB, in 2002, Colombia approved the Biosafety Protocol via Law 740. To date, the regulations to implement the CPB and supporting laws are outlined in Decree 4525 of December 6, 2005; ICA resolution 1063 (2005), ICA resolution 72221 (2020); ICA resolution 91505 (2021), MHSP resolution 2535 (2017), and MEHTD resolution 957 (2010).

#### m) International Treaties and Forums

Colombia is active in the Nagoya Protocol discussions (on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization), the Nagoya-Kuala Lumpur Protocol (on redress and liability), and the CPB Conference of the Parties. Colombia is also a signatory to the International Treaty on Plant Genetic Resources for Food and Agriculture, the International Plant Protection Convention, and participates in the Codex Alimentarius Commission (CODEX) to discuss biotechnology issues. In 2017, Colombia joined the Global Low-Level Presence Initiative to develop international approaches on LLP management. In 2020, Colombia became a member of the Organization for Economic Cooperation and Development, and in 2022, ratified the Escazu Agreement<sup>7</sup> through [Law 2273](#).

#### n) Related Issues

Over four consecutive legislative years beginning July 2020, bills aimed at establishing “transgenic free” municipalities, protecting farmer rights to save, reuse, and commercialize their seeds, and banning GE-seeds have all been introduced in Congress. In July 2023, [Article 64](#) from the Colombian Constitution was modified and includes access to seed exchange among other considerations. Still, biotechnology supporters have expressed their concerns and continue advocating for a science-based approach.

### **PART C: Marketing**

#### a) Public/Private Opinions

In all, Colombia has taken a science-based approach toward regulating biotechnology. However, certain environmental NGOs continue to pressure government officials to reject biotechnology.<sup>8</sup> Anti-biotechnology activists have pushed for mandatory GE-labeling, seed bans, GE-free municipalities, and GE-derived agricultural product import bans. In addition, activists have inspired certain social science student groups and indigenous communities to oppose the introduction of GE-crops for cultivation and environmental release based on biodiversity concerns. As per current regulations, indigenous territories

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<sup>7</sup> Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean.

<sup>8</sup> The GOC's basic principle is to adopt technologies that may help rural Colombia's economic and social development.

are deemed transgenic-free zones (See Part B, Section G for additional information on labeling. See Part A, Section F for additional information on trade barriers.)

#### b) Market Acceptance/Studies

For over 15 years, biotechnology-derived commodities have been used in Colombia. To date, public opinion and media coverage of biotechnology have been favorable, and consumers have not voiced significant concerns about products containing GE-derived materials.

An IFPRI study<sup>9</sup> found that GE-cotton cultivation had economic benefits for women farmers, saving both time and money. The study helped highlight the role of women as practitioners and beneficiaries of biotech cotton production. In 2016, Agro-Bio's study demonstrated biotechnology as a valuable tool for farmers, with potential benefits to improve rural development and sustainable agriculture.

## **CHAPTER II: ANIMAL BIOTECHNOLOGY**

### **PART D: Production and Trade**

#### a) Research and Product Development

According to Post sources, various universities are researching animal biotechnology. However, the high costs associated with the technology is a key factor that has discouraged widespread research and adoption. Aquaculture and GE-cattle are areas for additional animal biotechnology research, but funding remains the primary constraint. There are presently no developments in animal cloning.

#### b) Commercial Production

None presently.

#### c) Exports

None presently.

#### d) Imports

Colombia has focused on importing recombinant vaccines and diagnostic kits for animal diseases (See Appendix C).

In 2016, certain international companies and local governments expressed interest in accessing GE-insect technology to control harmful pest populations. These technologies included the control of *Aedes aegypti* mosquito populations, a vector for dengue, Zika, chikungunya, yellow fever, and other arboviruses, as well crop protection against the Mediterranean Fruit Fly (Medfly).<sup>10</sup>

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<sup>9</sup> See: (Zambrano et al. 2011).

<sup>10</sup> Technologies against the Medfly could be introduced first due to streamlined regulatory considerations, as it only requires the CTN Bio's assessment.

e) Trade Barriers

None at present.

**PART E: Policy**

a) Regulatory Framework

The GOC regulatory framework for plant biotechnology also applies to animal biotechnology. Per Decree 4525, CTN-Bio is the interagency committee responsible for evaluating and approving animal products following a risk evaluation by ICA.

b) Approvals/Authorizations

See Appendix C.

c) Innovative Biotechnologies

No developments have been identified at this time.

d) Labeling and Traceability

See Part B, Section G.

e) Additional Regulatory Requirements

None at present.

f) Intellectual Property Rights

See Part B, Section K.

g) International Treaties and Forums

Colombia's experience with biotechnology is mostly specific to plants. As a member of CODEX and the World Organization for Animal Health (OIE), the country attends meetings to discuss biotechnology.

h) Related Issues

None at present.

## **PART F: Marketing**

### a) Public/Private Opinions

Public knowledge of biotechnology is focused mostly on plant products. Animal biotechnology is less known and receives minimal media attention. Animal biotechnology is related to assisted reproductive technologies.

### b) Market Acceptance, Studies

See Part F, Section A.

## **CHAPTER 3: MICROBIAL BIOTECHNOLOGY**

## **PART G: Production and Trade**

### a) Commercial Production

Presently, there is no information available.

### b) Exports

Colombia annually exports \$82.8 million of processed products to the United States, including prepared foods, wine and beer, condiments and sauces, fruit juices, cheese, infant foods, bread, (pastry, cakes and other “bakers wares”) food preparations, and enzymes, which may contain microbial biotechnology-derived ingredients.

### c) Imports

Each year, Colombia imports \$161.5 million in processed products from the United States including prepared foods, wine and beer, condiments and sauces, fruit juices, cheese, infant foods, bread (pastry, cakes, and other bakers wares,) food preparations, and enzymes. These products may contain microbial biotechnology-derived ingredients.

### d) Trade Barriers

None at present.

## **PART H: Policy**

### a) Regulatory Framework

The Ministry of Health oversees food ingredients for human consumption regulations. There is no independent review for microbial biotech-derived components.

b) Approvals/Authorizations

See Part H, Section A.

c) Labeling and Traceability

In 2012, MHSP issued Resolution 4254 establishing the requirements for labeling of food derived from modern biotechnology. Foods containing one microbial biotech-derived ingredient, such as additives or enzymes, are exempt from GE-labeling requirements.

d) Monitoring and Testing

No monitoring or testing occurs for GE-microorganisms used as food ingredients.

e) Additional Regulatory Requirements

There are no additional requirements at present.

f) Intellectual Property Rights (IPR)

See Part B, Section K.

g) Related Issues

None.

**PART I: Marketing**

a) Public/Private Opinions

Public knowledge of biotechnology is mostly related to plants. Currently, there is no public opinion toward microbial biotechnology and its use in food production.

b) Market Acceptance, Studies

See Part I, Section A.

**ATTACHMENTS:**

**APPENDIX A. COLOMBIA: CURRENT STATUS OF BIOTECHNOLOGY PRODUCTS FOR PLANTING**

| <b>Crop</b>  | <b>Requesting Company</b>                     | <b>New Characteristics of Biotechnology</b>    | <b>Authorized Activity</b>  |
|--|---|--|---|
| Carnations<br>ICA resolution 1219  | Flores Colombianas Ltda.<br>(Holland)         | Blue Carnations                                | Approved in 2000 for commercial production of carnations for exports only (greenhouse conditions).  |
| Carnations<br>ICA resolution 3932<br>ICA resolution 3858   | Flower Development<br>(Holland)               | Blue Carnations                                | Approved in 2008 for commercial production of cut flowers for exports only (greenhouse conditions).   |
| Carnations<br>ICA resolution 231<br>ICA resolution 3569  | Suntory Holdings Limited                      | Blue Carnations                                | Approved for commercial production of cut flowers for exports only (greenhouse conditions).   |
| Roses<br>ICA resolution 3857<br>ICA resolution 3786  | International Flower<br>Development (Holland) | Blue Petal Roses                               | Approved in 2009 for commercial production of cut flowers for exports only (greenhouse conditions).   |
| Roses<br>ICA resolution 72130  |   |  | Approved in 2020 for field trials.  |
| Chrysanthemum<br>ICA resolution 3785   | International Flower<br>Development           | Blue Chrysanthemum                             | Approved for experimental plantings in 2009 (greenhouse conditions).  |
| Chrysanthemum<br>ICA resolution 3570 and<br>82360  | Suntory Holdings Limited                      | Blue Chrysanthemum                             | Approved in 2012 and 2020 for commercial production of cut flowers for exports only (greenhouse conditions).  |
| Gypsophila<br>ICA resolution 7169  | Imaginature Limited                           | Blue Gypsophila                                | Approved in 2016 for commercial production of cut flowers.  |
| LLCotton25<br>ICA resolution 1037<br>ICA resolution 1259<br>ICA resolution 2403<br>ICA resolution 4137 | Bayer S.A.                                    | Tolerant to glufosinate<br>ammonium herbicide. | Approved in 2009 for agronomic field trials in the dry and humid Caribbean regions, upper Magdalena River (Tolima, Huila), Cauca River valley and eastern plains. Approved in 2010 for commercial plantings in the upper Magdalena River (Tolima, Huila) and the humid Caribbean region. Approved in 2014 for commercial plantings in the dry Caribbean region. |
| Bollgard Cotton-MON<br>531<br>ICA resolution 1247<br>ICA resolution 2202                               | COACOL-Monsanto (United<br>States)            | Resistant to some<br>lepidopterous insects.    | Approved for commercial plantings since 2003 in the humid Caribbean region, the upper Magdalena River valley and Cauca River valley. Approved for commercial plantings in the dry Caribbean region in May 2004 and eastern plains in 2007.  |

|  |                                 |   |  |
|--|---------------------------------|---|--|
| Roundup Ready Cotton<br>MON 1445<br>ICA resolution 1006<br>ICA resolution 366                                      | COACOL-Monsanto (United States) | Tolerant to Roundup herbicide.  | Approved in 2004 for commercial plantings in dry and humid Caribbean regions. Approved in 2007 for commercial plantings in upper Magdalena River Valley and Cauca River Valley.  |
| Bollgard/Roundup Ready Cotton-MON 531XMON 1445<br>ICA resolution 358<br>ICA resolution 3852<br>ICA resolution 2204 | COACOL-Monsanto (United States) | Resistant to a wider variety of lepidopterous insects and tolerant to Roundup herbicide.            | Approved in 2005 for biosafety assessments in dry and humid Caribbean regions, upper Magdalena River Valley, Cauca River valley and Meta. Approved in 2007 for commercial plantings in upper Magdalena River Valley, Cauca River Valley, the dry and humid Caribbean regions and Orinoquia.  |
| Bollgard II and Roundup Ready Flex Cotton- MON 15985XMON 88913<br>ICA resolution 3851<br>ICA resolution 2203       | COACOL-Monsanto (United States) | Resistant to a wider variety of lepidopterous insects and completely tolerant to Roundup herbicide. | Approved in 2005 for biosafety assessments in dry and humid Caribbean regions, upper Magdalena River Valley (Tolima and Huila), Cauca River Valley and Meta. Approved in 2003 for commercial plantings in dry and humid Caribbean regions and Orinoquia. Approved in 2007 for commercial plantings in upper Magdalena River Valley and Cauca River Valley. |
| Bollgard x Roundup Ready Flex Cotton- MON 531XMON 88913<br>ICA resolution 1726                                     | COACOL-Monsanto (United States) | Resistant to wider variety of lepidopterous insects and completely tolerant to Roundup herbicide.   | Approved in 2007 for commercial plantings.   |
| Bollgard II and Roundup Ready Flex Cotton- MON 15985XMON 88913<br>ICA resolution 30193                             | Bayer S.A.                      | Resistant to a wider variety of lepidopterous insects and tolerant to Roundup herbicide.            | 2008 approval for commercial plantings in dry and humid Caribbean regions, the upper Magdalena River Valley, and Orinoquia.  |
| Bollgard II and Roundup Ready Flex Cotton- MON 15985XMON 88913   | CORPOICA                        | Resistant to a wider variety of lepidopterous insects and tolerant to Roundup herbicide.            | Approved in 2018 for commercial plantings in the dry and humid Caribbean regions, Cauca River Valley, upper Magdalena River Valley and Orinoquia   |
| Roundup Ready Flex MON 88913 cotton<br>ICA resolution 880<br>ICA resolution 1258                                   | COACOL-Monsanto (United States) | Tolerant to Roundup herbicide.  | Approved for biosafety assessment in 2008 in dry and humid Caribbean regions, Cauca River Valley, upper Magdalena River Valley and Orinoquia. Approved in 2010 for commercial plantings for dry and  |

|  |                     |   |   |
|--|---------------------|---|---|
|  |                     |   | humid Caribbean regions, Cauca River Valley, upper Magdalena River Valley and Orinoquia.  |
| Glytol and Liberty Link cotton<br>ICA resolution 226<br>ICA resolution 4133<br>ICA resolution 3053                       | Bayer S.A.          | Tolerant to Roundup and ammonium herbicide. | Approved in 2012 for field trials in dry and humid Caribbean regions, Cauca River Valley, upper Magdalena River Valley and Orinoquia. Approved in 2014 for commercial plantings in dry and humid Caribbean regions. |
| Glytol and Twilink cotton<br>ICA resolution 4304<br>ICA resolution 18599<br>ICA resolution 30336<br>ICA resolution 82364 | Bayer S.A.          |   | Approved in 2014, 2016, and 2018 and 2020 for commercial plantings.   |
| Glytol x Twinlink x COT102 cotton<br>ICA resolution 3924   | Bayer S.A.          |   | Approved in 2016 for biosafety field trials.  |
| COT102 cotton<br>ICA resolution 369<br>ICA resolution 82365  | Bayer S.A.          |   | Approved in 2015 for biosafety field trials. Approved for planting in 2020.   |
| Rice<br>ICA resolution 4041  | CIAT (Colombia)     | Drought tolerant.                           | Approved in 2010 for field trials in Villavicencio, Meta.   |
| Rice   | CIAT (Colombia)     | Resistant to White Leaf virus.              | Approved in 2000 for restricted research and small-scale plantings in open fields, in accordance with risk assessment.  |
| Rice   | CIAT (Colombia)     | Resistant to White Leaf virus.              | Approved in 2008 for restricted research.   |
| Cassava  | CIAT (Colombia)     | Resistant to the borer of stem/stalk.       | Approved in 2000 for small-scale plantings in open fields per risk assessment.  |
| Cassava  | CIAT (Colombia)     | Modification of cytokine production.        | Approved in 2000 for restricted research per risk assessment.   |
| Cassava  | CIAT (Colombia)     | Modification of amylopectin production.     | Approved in 2000 for restricted research per risk assessment.   |
| Cassava  | CIAT (Colombia)     | Modification of cyanide content.            | Approved in 2000 for restricted research per risk assessment.   |
| Cassava<br>ICA resolution 3854   | CIAT (Colombia)     |   | Approved in 2005 for restricted research per risk assessment.   |
| Cassava<br>ICA resolution 858  | CIAT (Colombia)     |   | Approved in 2008 for restricted research per risk assessment.   |
| Brachiaria (grass)   | CIAT (Colombia)     | “frog hopper” resistant.                    | Approved in 2000 for restricted research per risk assessment.   |
| Coffee   | CENICAFE (Colombia) | Borer resistant.                            | Approved in 2000 for restricted research per risk assessment.   |

|  |   |  |  |
|--|---|--|--|
| Potatoes<br>ICA resolution 4469<br>ICA resolution 1628<br>ICA resolution 4040  | Corporación de Investigaciones Biologicas | Resistant to <i>Tecia solanivora</i> .                           | Approved for field trials in Rio Negro, Antioquia in 2010.   |
| Tobacco<br>ICA Resolution 2492   | CENICAFE (Colombia)                       |  | Approved in 2010 for confined research.  |
| Fungus<br>ICA Resolution 2492  | CENICAFE (Colombia)                       |  | Approved in 2010 for confined research.  |
| Coffee plants “coffee Arabica”<br>ICA Resolution 2492  | CENICAFE (Colombia)                       |  | Approved in 2010 for confined research.  |
| Sugarcane<br>ICA Resolution 3995   | CENICAÑA (Colombia)                       | Resistant to yellow leaf syndrome.                               | Approved in 2005 for restricted research and small-scale plantings in open fields per risk assessment.   |
| Yieldgard Corn<br>Mon 810<br>ICA resolution 3850<br>ICA resolution 3743<br>ICA resolution 465<br>ICA resolution 1727 | COACOL-Monsanto (United States)           | Resistant to some lepidopterous insects.                         | Approved in 2005 for biosafety assessments in humid Caribbean region, upper Magdalena River, Cauca River. Approved in 2007 for controlled plantings in humid Caribbean region, upper Magdalena River, Cauca River Valley and eastern plains. Approved in 2008 for controlled plantings in the dry Caribbean, upper Magdalena River, Cauca River, eastern plains and the coffee region. |
| Yieldgard Corn<br>ICA resolution 3742<br>ICA resolution 646  | Dupont (United States)                    | Resistant to some lepidopterous insects.                         | Approved in 2008 for controlled plantings in dry and humid Caribbean and the coffee regions.   |
| Yieldgard 2 Corn   | COACOL-Monsanto (United States)           | Resistant to some lepidopterous insects and tolerant to Roundup. | Risk assessment since 2005.  |
| Yieldgard VTPro Corn<br>MON 89034<br>ICA Resolution 881  | COACOL-Monsanto (United States)           | Resistant to a wider variety of lepidopterous insects.           | Approved in 2007 for biosafety field trials in the dry and humid Caribbean regions, the coffee region, upper Magdalena River Valley, Cauca River Valley and eastern plains.  |
| Yieldgard VT3Pro Corn<br>4008<br>ICA resolution 881  | COACOL-Monsanto (United States)           | Resistant to a wider variety of lepidopterous insects.           | Approved in 2016 for controlled plantings in dry and humid Caribbean regions, Coffee region, upper Magdalena River Valley, Cauca River Valley and eastern plains.  |
| Roundup Ready Corn (RR 2 corn)<br>ICA resolution 1728<br>ICA resolution 3849   | COACOL-Monsanto (United States)           | Tolerant to Roundup herbicide.                                   | Approved in 2005 for biosafety assessments in humid Caribbean region (Cordoba), upper Magdalena River Valley, Cauca River Valley   |

|  |                                 |   |   |
|--|---------------------------------|---|---|
| ICA resolution 3740  |                                 |   | and eastern plains. Approved in 2007 for controlled plantings in Cordoba, upper Magdalena River valley, Cauca River Valley and eastern plains. Approved in 2008 for controlled plantings in dry Caribbean, coffee region.   |
| Roundup Ready Corn<br>ICA resolution 3739<br>ICA resolution 1680   | Dupont (United States)          | Tolerant to Roundup herbicide.  | Approved in 2008 for controlled plantings in the dry Caribbean and the coffee region. Approved in 2007 for controlled plantings in the humid Caribbean region, upper Magdalena River, Cauca River Valley and eastern plains.  |
| Yieldgard VTPro X<br>Roundup Ready 2 corn-<br>MON 89034 X NK 603<br>ICA resolution 3784<br>ICA resolution 1851<br>ICA resolution 225<br>ICA resolution 233 | COACOL-Monsanto (United States) | Resistant to a wider variety of lepidopterous insects and tolerant to Roundup.    | Approved in 2009 for controlled plantings in coffee region. Approved in 2011 for controlled plantings in the dry and humid Caribbean regions, upper Magdalena River Valley, Cauca River Valley and eastern plains. 2012 approved for controlled plantings in the coffee region.   |
| Bt11 X MIR 162 x<br>MON 89034 X GA21<br>ICA resolution 19507   | Syngenta (Switzerland)          | Resistant to multiple insects and tolerant to Roundup and glufosinate herbicides. | Approved in 2018 for controlled plantings in humid Caribbean region, upper Magdalena River, Cauca River Valley and eastern plains.  |
| Yieldgard X Roundup<br>Ready Corn<br>ICA resolution 2201<br>ICA resolution 3744  | COACOL-Monsanto (United States) | Resistant to some lepidopterous insects and tolerant to Roundup herbicide.        | Approved in 2007 for controlled plantings in Cordoba, upper Magdalena River Valley, Cauca River Valley and eastern plains. Approved for biosafety assessments in 2007 in dry Caribbean and coffee regions. Approved in 2008 for controlled plantings in dry Caribbean and coffee regions.   |
| Herculex I Corn<br>ICA resolution 1729<br>ICA resolution 3853<br>ICA resolution 3741<br>ICA resolution 3575<br>ICA resolution 464<br>ICA resolution 3351   | Dupont (United States)          | Resistant to some lepidopterous insects.  | Approved for biosafety assessments in 2005 in Cordoba, upper Magdalena River Valley, and Cauca River Valley. Approved for biosafety assessments in 2007 in the dry Caribbean and coffee regions. Approved in 2007 for controlled plantings in Cordoba, upper Magdalena River Valley, Cauca River Valley and eastern plains. Approved in 2008 for controlled plantings in coffee region and the upper Magdalena River. Approved in |

|  |                                   |  |   |
|--|-----------------------------------|--|---|
|  |                                   |  | 2012 for controlled plantings in the dry Caribbean region.  |
| Herculex I<br>ICA resolution 859   | Dow AgroSciences                  |  | Approved for biosafety assessments in 2008 in dry and humid Caribbean regions, Cauca River Valley, coffee region, upper Magdalena River, and eastern plains.  |
| Herculex I X Roundup<br>Ready corn<br>ICA resolution 3745<br>ICA resolution 878<br>ICA resolution 1677 | Dupont (United States)            | Resistant to some lepidopterous insects and tolerant to Roundup.           | Approved for controlled plantings in humid Caribbean region, Cauca River Valley and eastern plains. Approved in 2008 for controlled plantings in coffee region, Upper Magdalena River, Cauca River Valley and eastern plains.   |
| Herculex RW corn<br>ICA resolution 4469  | Dupont (United States)            | Tolerant to glufosinate.   | Approved in 2010 for biosafety and agronomic trials in humid and dry Caribbean region, Upper Magdalena River Valley, Cauca River Valley, Orinoquia, coffee region, Cauca River Valley and eastern plains.   |
| Herculex I X Roundup<br>Ready corn<br>ICA resolution 3738  | Dow AgroSciences de Colombia S.A. | Resistant to some lepidopterous insects and tolerant to Roundup herbicide. | Approved in 2008 for controlled plantings in coffee region, humid Caribbean region, upper Magdalena River.  |
| Bt 11 corn<br>ICA resolution 3848<br>ICA resolution 1679<br>ICA resolution 3787                        | Syngenta (Switzerland)            | Resistant to some lepidopterous insects.                                   | Approved for biosafety assessments in 2005, humid Caribbean region, Upper Magdalena River Valley, Cauca River Valley and Orinoquia. Approved in 2008 for controlled plantings in humid Caribbean region, Cauca River Valley. Approved 2009 for controlled plantings in Magdalena River Valley and eastern plains. |
| CCR corn-MON 88017   | COACOL-Monsanto (United States)   | Tolerant to Roundup and resistant to rootworm.                             | Approved for biosafety trials.  |
| GA 21 corn<br>ICA resolution 2936<br>ICA resolution 877  | Syngenta (Switzerland)            | Tolerant to Roundup EPSPS gene.  | Approved for biosafety trials in dry and humid Caribbean regions, Cauca River Valley, upper Magdalena River, coffee region and Orinoquia. Approved in 2010 for controlled plantings in humid and dry Caribbean regions, Upper Magdalena River Valley, Cauca River Valley and Orinoquia.                           |
| Bt 11 X GA 21 corn<br>ICA resolution 3915  | Syngenta (Switzerland)            | Resistant to some lepidopterous insects and tolerant to Roundup            | Approved in 2010 for controlled plantings in humid Caribbean region, Upper Magdalena River Valley,  |

|  |                                   |  |   |
|--|-----------------------------------|--|---|
|  |                                   | herbicide.   | Cauca River Valley and Orinoquia.   |
| MON 89034-3 x MON 00603-6 corn<br>ICA resolution 1036<br>ICA resolution 10492  | COACOL-Monsanto (United States)   | Tolerant to Roundup herbicide, resistant to some lepidopterous insects.                              | Approved in 2009 for biosafety field trials in the humid and dry Caribbean region, Upper Magdalena River valley, Cauca River valley and Orinoquia.  |
| MON 89034-3 x MON 00603-6 corn<br>ICA resolution 10492   | COACOL-Monsanto (United States)   | Tolerant to Roundup, resistant to some lepidopterous insects.  | Approved in 2016 for controlled plantings in dry Caribbean region.  |
| MIR162 (SYN-IR162-4)<br>Corn<br>ICA resolution 1257<br>ICA resolution 3574<br>ICA resolution 425<br>ICA resolution 426 | Syngenta (Switzerland)            | Resistant to some lepidopterous insects.   | Approved in 2010 for biosafety trials and agronomic assessment in the dry and humid Caribbean regions, upper Magdalena River Valley, Cauca River Valley, Orinoquia. Approved 2012 for controlled plantings for humid Caribbean regions, and Orinoquia. Approved 2014 for controlled plantings in the Cauca River Valley, upper Magdalena River and dry Caribbean regions. |
| MON VT Triple PRO (VT3P) (MON 89034 X MON 88017) Corn<br>ICA resolution 1260   | COACOL-Monsanto (United States)   | Tolerant to Roundup, resistant to rootworm.  | Approved 2009 for biosafety field trials in the humid, dry Caribbean regions, Magdalena River Valley, Cauca River Valley, Orinoquia.  |
| Bt11 x MIR162 x MIR604 x GA21 corn<br>ICA resolution 3572  | Syngenta (Switzerland)            | Tolerant to herbicide and resistant to insects.  | Approved 2012 for biosafety trials and agronomic assessment in dry and humid Caribbean regions, upper Magdalena River Valley, Cauca River Valley, Orinoquia and coffee region.  |
| DAS 59122-7xTC1507xNK603 corn<br>ICA resolution 1419<br>ICA resolution 3664  | Dupont (United States)            | Resistance to coleopteran and lepidopteran pests, and glyphosate and glufosinate-ammonium tolerance. | Approved 2011 for biosafety trials and agronomic assessment in dry and humid Caribbean regions, upper Magdalena River valley, Cauca River Valley, Orinoquia and coffee region.  |
| MON 89034x TC 1507xNK603 Corn<br>ICA resolution 3049   | Dow AgroSciences de Colombia S.A. |  | Approved for controlled plantings in 2013.  |
| MON 810 x TC 1507x MIR 162 x NK 603 corn<br>ICA resolution 4005 and 7889   | Dupont (United States)            |  | Approved for commercial plantings in 2016 and 2022.   |
| BT11 X MIR 162 X MIR 604 X TC 1507 X SYN 5307 X GA 21<br>Corn  |                                   |  | Approved for biosafety trials.  |

|   |                                 |   |   |
|---|---------------------------------|---|---|
| ICA resolution 4134   |                                 |   |   |
| MZHG0JG corn<br>ICA resolution 19220  | Syngenta                        |   | Approved in 2018 for controlled plantings in the dry and humid Caribbean regions, Magdalena River Valley, and Orinoquia.  |
| Fenaltec22 TC 1507<br>Corn<br>ICA resolution 13025  | FENALCE                         |   | Approved 2019 for commercial plantings in dry and humid Caribbean regions, Magdalena, and Cauca River Valleys, Orinoquia, and coffee region.  |
| MON 89034 x TC1507<br>x MIR162 x NK603<br>Corn<br>ICA resolution 61761<br>ICA resolution 61762<br>ICA resolution 7890 | Dupont                          |   | Approved 2020 for commercial plantings in humid Caribbean region, Magdalena and Cauca River Valleys and Orinoquia. Approved for commercial plantings in 2022.   |
| MON 87427 x MON<br>89034 x MIR162 x<br>MON 87411 corn<br>ICA resolution 82356   | COACOL-Monsanto (United States) | Resistant to insects<br>Tolerant to herbicide | Approved in 2020 for commercial plantings.  |
| Roundup Ready soybean<br>ICA resolution 1035<br>ICA resolution 2404<br>ICA resolution 227                             | COACOL-Monsanto (United States) | Tolerant to Roundup herbicide.                | Approved in 2009 for biosafety field trials in dry and humid Caribbean regions, upper Magdalena River Valley, Cauca River Valley. Approved for commercial plantings 2010 in Orinoquia and 2012 in Cauca River Valley. |
| Round Up Ready 2<br>Yield<br>Soybean<br>ICA resolution 3669<br>ICA resolution 3660                                    | COACOL-Monsanto (United States) |   | Approved 2011 for biosafety assessment in dry, humid Caribbean regions, upper Magdalena River Valley, Cauca River Valley, Orinoquia.  |
| Liberty link Soybean<br>A5547-127<br>ICA resolution 4136  |                                 |   | Approved 2014 for biosafety field trials.   |
| FG 72X A5547 Soybean<br>ICA Resolution 18601  | Bayer S.A.                      |   | Approved in 2016 for biosafety field trials.  |
| FG 72 Soybean<br>ICA Resolution 3999  | Bayer S.A.                      |   | Approved in 2016 for biosafety field trials.  |
| GTS 4032 Soybean<br>ICA Resolution 72113  | COACOL-Monsanto (United States) | Herbicide-tolerant                            | Approved in 2020 for biosafety field trials. OFF-PATENT   |
| GTS 4032 Soybean<br>ICA Resolution 82351,<br>82352, 94973   | COACOL-Monsanto (United States) | Herbicide-tolerant                            | Approved for planting.<br>OFF-PATENT  |
| GTS 4032 soybeans<br>ICA resolution 102580  | Alimentos FINCA S.A.S           | Herbicide-tolerant                            | Approved for planting.<br>OFF-PATENT  |
| Sugar cane  | CENICAÑA                        | Transformed genotypes                         | Approved for confined field trials in   |

|                      |  |   |      |
|----------------------|--|---|------|
| ICA resolution 82361 |  | of sugarcane ( <i>Saccharum officinarum</i> ) to be used for ethanol production | 2020 |
|----------------------|--|---|------|

**APPENDIX B. COLOMBIA: CURRENT STATUS OF BIOTECHNOLOGY PRODUCT APPLICATIONS FOR FOOD, FEED & HEALTH**

| <b>Crop</b>  | <b>Requesting Company</b>                         | <b>New Biotech Characteristics</b>   | <b>Approved Applications</b>    | <b>Approval Date</b>  |
|--|---|--|---------------------------------|---|
| Bollgard Cotton-MON 531<br>SEABA ACT III<br>ICA resolution 2708  | COACOL-<br>Monsanto (United States)               | Resistant to some lepidopterous insects.   | Raw material for food and feed. | Approved for food and feed in 2003.                               |
| Roundup Ready Cotton-MON 1445<br>SEABA ACT V<br>ICA resolution 1063  | COACOL-<br>Monsanto (United States)               | Tolerant to Roundup.   | Raw material for food and feed. | Approved for food in 2003. Approved for feed in 2004.             |
| Bollgard II Cotton-MON 15985<br>MSP resolution 4587<br>INVIMA resolution 2020023676<br>ICA resolution 310                  | COACOL-<br>Monsanto (United States)               | Resistant to some lepidopterous insects.   | Raw material for feed and food. | Approved for food 2009,<br>2020. Approved for feed in 2008.       |
| Roundup Ready Flex cotton-MON 88913<br>MSP resolution 4582<br>INVIMA resolution 2020023675<br>ICA resolution 311           | COACOL-<br>Monsanto (United States)               | Tolerant to Roundup herbicide and to a wider spectrum of weeds.                  | Raw material for feed and food. | Approved for food in 2009 and 2020. Approved for feed in 2008.    |
| LL Cotton 25<br>ICA resolution 307<br>MSP resolution 1731<br>INVIMA resolution 2021045474                                  | Bayer S.A.  | Tolerant to Roundup.   | Raw material for feed and food. | Approved for feed in 2008.<br>Approved for food in 2016 and 2021. |
| Bollgard II+Roundup Ready Flex Cotton<br>MON 15985XMON 88913<br>MSP resolution 2390<br>ICA resolution 2944                 | COACOL-<br>Monsanto (United States)               | Resistant to some lepidopterous insects, tolerant to Roundup, spectrum of weeds. | Raw material for feed and food. | Approved for food in 2010. Approved for feed in 2007.             |
| MON 88701 X MON 88913<br>MSP resolution 3005<br>ICA resolution 18590<br>INVIMA resolution 2022005640                       | COACOL-<br>Monsanto (United States)<br>Bayer S.A. |  | Raw material for food and feed. | Approved for food in 2016 and 2022.<br>Approved for feed in 2016. |
| GHB 614 Glytol Cotton<br>ICA resolution 3567<br>MSP resolution 506<br>INVIMA resolution 2021023287                         | Bayer S.A.  | Tolerant to herbicide.   | Raw material for feed and food. | Approved for feed in 2012. Approved for food in 2016, 2021.       |
| GHB 614 Glytol X Liberty Link Cotton<br>LL25<br>ICA resolution 3568<br>MSP resolution 1454<br>INVIMA resolution 2023007710 | Bayer S.A.<br>BASF                                | Tolerant to herbicide.   | Raw material for feed and food. | Approved for feed in 2012.<br>Approved for food in 2017 and 2023. |
| GHB 614 Glytol x T304 X GHB119 X<br>COT 102 Cotton<br>MSP resolution 1453  | Bayer S.A.<br>BASF                                | Tolerant to herbicide.   | Raw material for food.          | Approved for food in 2017 and 2023.                               |

|  |  |   |                                 |  |
|--|--|---|---------------------------------|--|
| INVIMA resolution 2023007708   |  |   |                                 |  |
| Bollgard+Roundup Ready cotton-MON 531XMON 1445<br>MSP resolution 2179<br>ICA resolution 2943                           | COACOL-<br>Monsanto (United States)                          | Resistant to some lepidopterous insects, tolerant to Roundup. | Raw material for food and feed. | Approved for food in 2008. Approved for feed in 2007.          |
| COT 102 Cotton<br>ICA resolution 4131<br>MSP resolution 128<br>INVIMA resolution 2021023292                            | Syngenta   | Resistant to some lepidopterous insects.                      | Raw material for feed and food. | Approved for feed in 2014. Approved 2016 and 2021 for food.    |
| DAS 24236-5 Cotton<br>ICA resolution 2660<br>MSP resolution 4007<br>INVIMA resolution 2022005637                       | Dow Agrosciences<br>Corteva<br>Agriscience de Colombia S.A.S |   | Raw material for feed and food. | Approved for feed in 2015. Approved for food in 2016 and 2022. |
| DAS 21023-5 Cotton<br>ICA resolution 2664<br>MSP resolution 5853<br>INVIMA resolution 2022600253                       | Dow Agrosciences<br>Corteva<br>Agriscience                   |   | Raw material for feed and food. | Approved for feed in 2015. Approved for food in 2016 and 2022. |
| DAS 21023-5XDAS 24236 X SYN 102 X MON 88913 X DAS 81910 Cotton<br>ICA resolution 11243<br>INVIMA resolution 2018027771 | Dow Agrosciences   |   | Raw material for feed and food. | Approved for feed in 2017. Approved for food in 2018.          |
| MON 88913 X MON 15985 Cotton<br>INVIMA resolution 2021005564   | COACOL-<br>Monsanto  |   | Raw material for food.          | Approved for food in 2020.                                     |
| MON 88913 X MON 15985 Cotton<br>ICA resolution 102583  | Agrosavia  |   | Raw material for feed.          | Approved for feed in 2021.                                     |
| DAS 81910 Cotton<br>ICA resolution 20952<br>INVIMA resolution 81910  | Dow Agrosciences   |   | Raw material for feed and food. | Approved for feed in 2016 and food in 2022.                    |
| Glytol x Twinlink x COT102 Cotton<br>ICA resolution 3922   | Bayer S.A.   |   | Raw material for feed.          | Approved for feed in 2015.                                     |
| Glytol x Twinlink<br>MSP resolution 1452   | Bayer S.A.   |   | Raw material for food.          | Approved for food in 2017.                                     |
| T 304-40 Cotton<br>MSP resolution 505<br>INVIMA resolution 2021023286<br>ICA resolution 5400                           | Bayer S.A.   |   | Raw material for food and feed. | Approved for food in 2016 and 2021. Approved for feed in 2017. |
| MON 88701 Cotton<br>MSP resolution 132<br>INVIMA resolution 2021023288<br>ICA resolution 4009                          | COACOL-<br>Monsanto (United States)                          |   | Raw material for food and feed. | Approved for food in 2016, 2021. Approved for feed in 2016.    |
| LL Cotton 25<br>MSP resolution 1731  | Bayer S.A.   |   | Raw material for food.          | Approved for food in 2016.                                     |
| DAS 80910<br>MSP resolution 5852   | Dow Agrosciences   |   | Raw material for food.          | Approved for food in 2016.                                     |
| GHB 119 Cotton, MSP resolution 3298<br>INVIMA resolution 2021023285<br>ICA resolution 19228                            | Bayer S.A.   |   | Raw material for food and feed. | Approved for food in 2016, 2021. Feed in 2018.                 |

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| GHB 119 X GHB 614 Cotton<br>ICA resolution 11236  | Bayer S.A.                                  |  | Raw material for feed.          | Approved for feed in 2017.  |
| T-304-40 x GHB119 x COT102 Cotton<br>ICA resolution 82363<br>INVIMA resolution 2021038704                                   | BASF Quimica Colombiana S.A.                |  | Raw material for feed and food. | Approved for feed in 2020 and food in 2021.                       |
| COT 102 x MON15985 X MON88701 X MON88913<br>MSP resolution 4905<br>ICA resolution 18593<br>INVIMA resolution 2022009522     | COACOL-Monsanto (United States), Bayer S.A. |  | Raw material for feed and food. | Approved for feed in 2016.<br>Approved for food in 2016 and 2022. |
| GHB811 x T304-40 x GHB119 x COT102 Cotton<br>ICA resolution 25689<br>INVIMA resolution 2023024849                           | BASF  | Resistant to some lepidopterous insects and tolerant to Roundup herbicide. | Raw material for feed and food. | Approved for feed in 2022. Approved for food in 2023.             |
| GHB811 x LLCotton25 x MON88701 Cotton<br>ICA resolution 25688   | BASF  | Tolerant to some herbicides.   | Raw material for feed.          | Approved for feed in 2022.  |
| GHB811 x T-304-40 x GHB119 x COT102 x MON88701 Cotton<br>ICA resolution 25687<br>INVIMA resolution 2023024851               | BASF  | Resistant to some lepidopterous insects and tolerant to Roundup herbicide. | Raw material for feed.          | Approved for feed in 2022.<br>Approved for food in 2023.          |
| GHB811 Cotton<br>INVIMA resolution 2020014751<br>ICA resolution 72112   | BASF  |  | Raw material for food and feed. | Approved for food and feed in 2020.                               |
| MON88702 Cotton<br>INVIMA resolution 2020027966<br>ICA resolution 82362   | COACOL-Monsanto (United States)             |  | Raw material for food and feed. | Approved for food and feed in 2020.                               |
| MON 88702 X MON 15985 X COT102 X MON 88701 X MON 88913 Cotton<br>INVIMA resolution 2023024846                               | Bayer S.A.                                  |  | Raw material for food.          | Approved for food in 2023.  |
| GHB614 x T304-40 x GHB119 Cotton<br>INVIMA resolution 2023007709  | BASF  |  | Raw material for food.          | Approved for food in 2023.  |
| Yieldgard + Roundup Ready Corn-MON 810XNK 603<br>MSP resolution 4583<br>ICA resolution 1365<br>INVIMA resolution 2020016747 | COACOL-Monsanto (United States)             | Resistant to some lepidopterous insects and tolerant to Roundup.           | Raw material for feed and food. | Approved for feed in 2007. Approved for food in 2009 and 2020     |
| Bt Herculex I Corn-DAS 01507-1 SEABA ACT V<br>ICA resolution 3745 and 82354   | Dupont (United States)                      | Resistant to some lepidopterous insects.                                   | Raw material for food and feed. | Approved for food and feed in 2006 and 2020                       |
| Yieldgard Corn-MON 810 SEABA ACT V<br>ICA resolution 3746   | COACOL-Monsanto (United States)             | Resistant to some lepidopterous insects.                                   | Raw material for food and feed. | Approved for food in 2003. Approved for feed 2006                 |
| Herculex I X Roundup Ready Corn-TC 1507XNK 603<br>ICA resolution 3083 MSP resolution 506                                    | Dupont (United States)                      | Resistant to some lepidopterous insects tolerant to Roundup.               | Raw material for feed and food. | Approved for feed in 2009. Approved for food in 2010.             |
| Herculex RW Corn-DAS 59122  | Dupont (United States)                      | Resistant to some  | Raw material                    | Approved for feed   |

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| ICA resolution 4473<br>MSP resolution 1708<br>INVIMA resolution 2021045473  | States                              | lepidopterous insects.   | for feed and food.              | in 2010. Approved for food in 2011 and 2021.                   |
| Yieldgard+Lysine<br>Corn-MON 810X LY 038  | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects. High lysine content.              | Raw material for feed.          | Pending for food approval as request was withdrawn.            |
| Yieldgard VPro -MON 89034 Corn<br>MSP resolution 2394<br>INVIMA resolution 2021005567<br>ICA resolution 2367                        | COACOL-<br>Monsanto (United States) | Resistant to a wider variety of lepidopterous insects.                     | Raw material for feed and food. | Approved for food in 2010 and 2020. Approved for feed in 2007. |
| MON VT Triple PRO (VT3P) (MON 89034 X MON 88017) Corn<br>MSP resolution 1710<br>ICA resolution 3661<br>INVIMA resolution 2021053745 | COACOL-<br>Monsanto (United States) | Resistant to a wider variety of lepidopterous insects.                     | Raw material for food and feed. | Approved for food in 2011, 2021 and feed in 2011.              |
| Yieldgard VPro Corn X Roundup Ready 2-MON 89034 X NK 603<br>ICA resolution 3659<br>MSP resolution 2395                              | COACOL-<br>Monsanto (United States) | Resistant to variety of lepidopterous insects and tolerant to Roundup.     | Raw material for feed and food. | Approved for feed in 2011. Approved for food in 2010.          |
| CCR corn-MON 88017<br>MSP resolution 1712<br>ICA resolution 1254<br>INVIMA resolution 2021053743                                    | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects and tolerant to Roundup.           | Raw material for food and feed. | Approved for food in 2011 and 2021. Approved for feed in 2010. |
| Yieldgard+CCR Corn-MON 810X MON 88017<br>MSP resolution 1904<br>ICA resolution 3667<br>INVIMA resolution 2021053743                 | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects, rootworm and tolerant to Roundup. | Raw material for food and feed. | Approved for food in 2011 and 2021. Approved for feed in 2011. |
| Lysine Corn-LY p38<br>MSP resolution 4585<br>ICA resolution 2405  | COACOL-<br>Monsanto (United States) | High lysine content.   | Raw material for food and feed. | Approved for food in 2009. Approved for feed in 2010.          |
| Bt 11 Corn<br>MSP resolution 1078<br>ICA resolution 309<br>INVIMA resolution 2019040929   | Syngenta<br>(Switzerland)           | Resistant to some lepidopterous insects.                                   | Raw material for food and feed. | Approved for food in 2009, 2019. Approved for feed in 2008.    |
| GA 21 Corn<br>ICA resolution 2402<br>MSP resolution 1692<br>INVIMA resolution 2023024847  | Syngenta<br>(Switzerland)           | Tolerant to Roundup herbicide  | Raw material for feed and food. | Approved for food in 2012 and 2023. Approved for feed in 2010. |
| Bt 11 X GA 21 Corn<br>ICA resolution 4474<br>MSP resolution 1695<br>INVIMA resolution 2023024863                                    | Syngenta<br>(Switzerland)           | Resistant to some lepidopterous insects tolerant to Roundup.               | Raw material for feed and food. | Approved for feed 2010. Approved for food 2012, 2023.          |
| Bt 11 X TC 1507 X GA 21 Corn<br>ICA resolution 19222<br>INVIMA resolution 2018027787  | Syngenta<br>(Switzerland)           | Resistant to some lepidopterous insects tolerant to Roundup.               | Raw material for feed and food. | Approved for food and feed in 2018.                            |

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| Smartstax Corn -Mon 89034 X TC1507 X MON 88017 X DAS59122-7<br>MSP resolution 2393<br>ICA resolution 3662<br>INVIMA resolution 2021053747 | COACOL-<br>Monsanto (United States) and Dow<br>Agrosciences | Resistant to some lepidopterous insects, rootworm, tolerant to Roundup and glufosinate. | Raw material for food and feed. | Approved for food in 2010 and 2021.<br>Approved for feed in 2011. |
| MIR 162 Corn<br>ICA resolution 4471<br>MSP resolution 1693<br>INVIMA resolution 2021038688  | Syngenta<br>(Switzerland)                                   | Resistant to some lepidopterous insects.  | Raw material for feed and food. | Approved for food in 2012, 2021.<br>Approved for feed in 2010.    |
| BT 11xMIR 162xGA21 Corn<br>ICA resolution 2407<br>MSP resolution 1694<br>INVIMA resolution 2019040928                                     | Syngenta<br>(Switzerland)                                   | Resistant to some lepidopterous insects and tolerant to herbicides.                     | Raw material for feed and food. | Approved for feed in 2010.<br>Approved for food in 2012 and 2020. |
| MON 87460 Corn<br>MSP resolution 1709<br>ICA resolution 224<br>INVIMA resolution 2021053742   | COACOL-<br>Monsanto (United States)                         | Tolerant to drought.  | Raw material for food and feed. | Approved for food in 2011, 2021.<br>Approved for feed in 2012     |
| MON 87460 X NK 603 Corn<br>ICA resolution 422<br>MSP resolution 777<br>INVIMA resolution 2019031454                                       | COACOL-<br>Monsanto (United States)                         | Tolerant to drought and herbicides.   | Raw material for feed and food. | Approved for feed and food in 2014 and 2019.                      |
| MON 87460 X MON 89034 X MON 88017 Corn<br>ICA resolution 423<br>MSP resolution 778<br>INVIMA resolution 2019031455                        | COACOL-<br>Monsanto (United States)                         | Resistant to some lepidopterous insects, tolerant to herbicides, drought.               | Raw material for feed and food. | Approved for feed and food in 2014 and 2019.                      |
| MON 863-5 corn<br>ICA resolution 4475<br>MSP resolution 1711  | COACOL-<br>Monsanto (United States)                         | Resistant to some lepidopterous insects.  | Raw material for feed and food. | Approved for feed in 2010. Approved for food in 2011.             |
| BT 11 X MIR 162X MIR 604X GA 21 Corn<br>MSP resolution 119<br>ICA resolution 232  | Syngenta<br>(Switzerland)                                   | Rootworm resistant and tolerant to herbicides.  | Raw material for food and feed. | Approved for feed and food in 2012.                               |
| MIR 604 Corn<br>MSP resolution 118<br>ICA resolution 229  | Syngenta<br>(Switzerland)                                   | Rootworm resistant.   | Raw material for food and feed. | Approved for feed and food in 2012.                               |
| MIR 604 X GA 21 Corn<br>ICA resolution 230<br>MSP resolution 769<br>INVIMA resolution 2020018737  | Syngenta<br>(Switzerland)                                   | Resistant to some lepidopterous insects and tolerant to herbicide.                      | Raw material for feed and food. | Approved for feed in 2012.<br>Approved for food in 2014.          |
| BT 11XMIR 604X GA 21 Corn<br>ICA resolution 3046<br>MSP resolution 775<br>INVIMA resolution 2019040928                                    | Syngenta<br>(Switzerland)                                   | Resistant to some lepidopterous insects tolerant to herbicide.                          | Raw material for feed and food. | Approved for feed in 2012. Approved for food in 2014 and 2019.    |
| BT11XMIR 604X TC1507X5307XGA 21 Corn<br>ICA resolution 18583  | Syngenta<br>(Switzerland)                                   | Resistant to some lepidopterous insects tolerant to herbicide.                          | Raw material for feed.          | Approved for feed in 2016.  |

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| Liberty Link Corn - T25<br>MSP resolution 121<br>ICA resolution 3666<br>INVIMA resolution 2022600254            | Bayer S.A.<br>BASF                                 | Tolerant to Roundup herbicide.                                     | Raw material for food and feed. | Approved for food in 2012, 2022. 2011 for feed.                |
| T25 XMON 810 Corn   | Bayer S.A.   | Resistant to some lepidopterous insects tolerant to Roundup.       | Raw material for food.          | Approved for food in 2012.                                     |
| T25 X NK 603 Corn<br>MSP resolution 115<br>ICA resolution 228<br>INVIMA resolution 2022600256                   | COACOL-<br>Monsanto (United States)<br>Bayer S.A.  | Tolerant to herbicide.   | Raw material for food and feed. | Approved for feed in 2012 and food in 2012, 2022.              |
| T25 X NK 603 Corn X DAS40278<br>INVIMA resolution 2021012389  | COACOL-<br>Monsanto (United States)                | Tolerant to herbicide.   | Raw material for food and feed. | Approved for feed and food in 2012.                            |
| DAS 1507XMON 810 Corn<br>MSP resolution 1487<br>ICA resolution 3573   | Dupont   | Resistant to some lepidopterous insects.                           | Raw material for food and feed. | Approved for feed and food in 2012.                            |
| DAS 1507XMON 810X MON 603 Corn<br>MSP resolution 1488<br>ICA resolution 3571                                    | Dupont   | Resistant to some lepidopterous insects herbicide tolerant.        | Raw material for food and feed. | Approved for feed and food in 2012.                            |
| DAS 1507X DAS 59122X MON 603 Corn<br>MSP resolution 1486<br>ICA resolution 3578<br>INVIMA resolution 2022600252 | Dupont<br>Corteva<br>Agriscience de Colombia S.A.S | Resistant to some lepidopterous insects herbicide tolerant.        | Raw material for food and feed. | Approved for feed in 2012 and food in 2012 and 2022.           |
| TC 1507X MON 810 X MIR 604 X NK 603 Corn<br>MSP resolution 5856<br>ICA resolution 11244                         | Dupont   | Resistant to some lepidopterous insects herbicide tolerant         | Raw material for food and feed. | Approved for food in 2016. Approved for feed in 2018.          |
| TC 1507X MIR 604 X NK 603 Corn<br>ICA resolution 19227<br>INVIMA resolution 2018027808                          | Dupont   | Resistant some lepidopterous insects herbicide tolerant            | Raw material for feed and food. | Approved for feed and food in 2018.                            |
| TC 1507 X MON 810 X MIR 162X NK 603 Corn<br>MSP resolution 3118<br>INVIMA resolution 2020027961                 | Dupont   | Resistant to some lepidopterous insects herbicide tolerant.        | Raw material for food.          | Approved for food in 2015 and 2020.                            |
| MON 89034 X TC 1507X NK 603 Corn<br>ICA resolution 3050<br>MSP resolution 1861<br>INVIMA resolution 2020023046  | COACOL-<br>Monsanto (United States)                | Resistant to some lepidopterous insects and tolerant to herbicide. | Raw material for feed and food. | Approved for feed in 2013. Approved for food in 2014 and 2020. |
| BT11 X MIR604 Corn<br>MSP resolution 120<br>ICA resolution 3048<br>INVIMA resolution 2023007706                 | Syngenta   | Resistant to some lepidopterous insects and tolerant to herbicide. | Raw material for feed and food. | Approved for feed in 2013. Approved for food in 2012 and 2023. |
| BT11 X MIR162 Corn<br>MSP resolution 249<br>ICA resolution 18585<br>INVIMA resolution 2022005639                | Syngenta   | Resistant to some lepidopterous insects and tolerant to herbicide. | Raw material for food and feed. | Approved for food in 2016 and 2022. Approved for feed in 2016. |

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| SYN E3272-5 Corn<br>ICA resolution 3043<br>MSP resolution 127<br>INVIMA resolution 2021038673                        | Syngenta                            | Modified amylase for ethanol production.                            | Raw material for feed and food. | Approved for feed in 2013.<br>Approved for food in 2016 and 2021. |
| SYN E5307-1 Corn<br>MSP resolution 5632  | Syngenta                            |   | Raw material for feed and food. | Approved for feed in 2013.<br>Approved for food in 2014.          |
| DAS 40278-9 Corn<br>ICA resolution 3052<br>MSP resolution 774<br>INVIMA resolution 2019040915                        | Dow Agroscience                     | Herbicide-tolerant.   | Raw material for feed and food. | Approved for feed in 2013.<br>Approved for food in 2014 and 2019. |
| MON 87427 X MON 89034 X MON 88017 Corn<br>MSP resolution 3488<br>ICA resolution 3047<br>INVIMA resolution 2020018725 | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects and tolerant to herbicide.  | Raw material for food and feed. | Approved for food and feed in 2014 and 2020.                      |
| MON 87427 X MON 89034 X NK 603 Corn<br>MSP resolution 3705<br>ICA resolution 3048<br>INVIMA resolution 2020018736    | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects and tolerant to herbicide.  | Raw material for food and feed. | Approved for food and feed in 2014.<br>Approved for food in 2020. |
| MON 87427 X MON 89034 X TC 1507 X MON 88017 X DAS 59122 Corn<br>MSP resolution 3489<br>ICA resolution 3043           | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects and herbicide tolerant.     | Raw material for food and feed. | Approved for food and feed in 2014.                               |
| DAS 40278 X NK 603 Corn<br>MSP resolution 3487<br>INVIMA resolution 2020023674<br>ICA resolution 3044                | Dow Agrosciences                    | Resistant to some lepidopterous insects and                         | Raw material for food and feed. | Approved for food in 2014, 2020, feed 2014.                       |
| DAS 40278 X NK 603 Corn X T25<br>ICA resolution 82355  | Dow Agrosciences                    | Resistant to some lepidopterous insects and tolerant to herbicide.  | Raw material for feed.          | Approved for feed in 2020.  |
| MON 87427 Corn<br>ICA resolution 424<br>MSP resolution 1862<br>INVIMA resolution 2019040926                          | COACOL-<br>Monsanto (United States) | Tolerant to herbicide.  | Raw material for feed and food. | Approved for feed and food in 2014 and 2019.                      |
| MON 87460 X MON 89034 X NK 603 Corn<br>ICA resolution 427<br>MSP resolution 776<br>INVIMA resolution 2019043839      | COACOL-<br>Monsanto (United States) | Resistant to some lepidopterous insects and tolerant to herbicides. | Raw material for feed and food. | Approved for food and feed in 2014.<br>Approved for food in 2019. |
| MON 89034 X NK 603 Corn<br>INVIMA resolution 2021005565  | COACOL-<br>Monsanto (United States) | Resistant, some lepidopterous pests, herbicide tolerant.            | Raw material for food.          | Approved for food in 2020.  |
| MON 89034 X TC 1507 X NK 603 X DAS 40278-9 Corn  | Dow Agrosciences                    | Tolerant to herbicide.  | Raw material for feed and       | Approved for feed in 2014.  |

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| INVIMA resolution 2022009525<br>ICA resolution 4135<br>MSP resolution 4904  |                        |   | food.                           | Approved for food in 2016 and 2022.                            |
| MON 89034 X TC 1507 X NK 603 X MIR 162 Corn<br>INVIMA resolution 2018027772<br>ICA resolution                           | Dow Agrosiences        | Herbicide tolerant.   | Raw material for food and feed. | Approved for food and feed in 2018.                            |
| TC 1507 X MON 810 X MIR 162 X NK 603 Corn<br>ICA resolution 002   | Dupont (United States) | Resistant to some lepidopterous pests, herbicide tolerant.          | Raw material for feed.          | Approved for feed in 2015.                                     |
| MON 89034 X TC 1507 X MIR 162 X NK 603 X DAS40278 Corn<br>ICA resolution 30339<br>INVIMA resolution 2018027773          | Dow Agrosiences        | Resistant to some lepidopterous insects and tolerant to herbicides. | Raw material for feed and food. | Approved for feed and food in 2018.                            |
| TC 1507 X MON 810 X MIR 162 Corn<br>ICA resolution 4006<br>INVIMA resolution 2020027962                                 | Dupont (United States) | Resistant to some lepidopterous pests, herbicide tolerant.          | Raw material for feed and food. | Approved for feed in 2016. Approved for food in 2020.          |
| TC 1507 X MON 810 Corn<br>INVIMA resolution 2020027965  | Dupont (United States) | Resistant to some lepidopterous pests, herbicide tolerant.          | Raw material for food.          | Approved for food in 2020.                                     |
| TC 1507 X MON 810 X NK 603 Corn<br>INVIMA resolution 2020027963   | Dupont (United States) | Resistant to some lepidopterous pests, herbicide tolerant.          | Raw material for food.          | Approved for food in 2020.                                     |
| DP 4114 Corn<br>MSP resolution 123<br>ICA resolution 4004<br>INVIMA resolution 2021023289                               | Dupont (United States) |   | Raw material for food and feed. | Approved for food in 2016 and 2021. Approved for feed in 2016. |
| DP 202216 Corn<br>ICA resolution 82359<br>INVIMA resolution 2021012391  | Dupont (United States) |   | Raw material for feed.          | Approved for feed in 2020. Approved for food in 2021.          |
| DP 4114 x MON 810 x MIR 604 X NK 603 Corn<br>MSP resolution 3297<br>ICA resolution 4936<br>INVIMA resolution 2022500204 | Dupont (United States) |   | Raw material for food and feed. | Approved for feed in 2016. Approved for food in 2016 and 2022. |
| DP 4114 X MON 89034 X MON 87411 X DAS 40278 Corn<br>INVIMA resolution 2021023291<br>ICA resolution 102582               | Dupont (United States) |   | Raw material for food and feed. | Approved for food and feed in 2021.                            |
| DP 23211 Corn<br>ICA resolution 113673<br>INVIMA resolution 2021045472  | Dupont (United States) |   | Raw material for feed and food. | Approved for feed in 2021. Approved for food in 2021.          |
| DP 915635<br>ICA resolution 113674<br>INVIMA resolution 2022500205  | Dupont (United States) |   | Raw material for feed and food. | Approved for feed in 2021. Approved for food in 2022.          |
| TC 1507 x 59122 X MON 810 x MIR 604 X NK 603 Corn   | Dupont (United States) |   | Raw material for food and       | Approved for food in 2016. Approved                            |

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| MSP resolution 5857<br>ICA resolution 11242   |                        |  | feed.                           | for feed in 2018.   |
| TC 1507 x 59122 X MON 810 X NK 603<br>Corn<br>ICA resolution 19226<br>INVIMA resolution 2018027809                    | Dupont (United States) |  | Raw material for feed and food. | Approved for feed and food in 2018.                               |
| BT11xMIR162xTC1507xGA21<br>Corn<br>MSP resolution 124<br>ICA resolution 4003<br>INVIMA resolution 2021038695          | Syngenta               |  | Raw material for food and feed. | Approved for food in 2016 and 2021.<br>Approved for feed in 2016. |
| BT11XDAS59122XMIR604XTC1507xGA21<br>Corn<br>MSP resolution 126<br>ICA resolution 4002<br>INVIMA resolution 2021045475 | Syngenta               |  | Raw material for food and feed. | Approved for feed in 2016. Approved for food in 2016 and 2021.    |
| TC1507XDAS59122 Corn<br>ICA resolution 19225<br>INVIMA resolution 2018027807  | Dupont                 |  | Raw material for feed and food. | Approved for feed and food in 2018.                               |
| DAS59122 x NK603 Corn<br>INVIMA resolution 2018027810   | Dupont                 |  | Raw material for food.          | Approved for food in 2018.  |
| TC1507 X NK603 Corn<br>ICA resolution 19224<br>INVIMA resolution 2020027964   | Dupont                 |  | Raw material for feed and food. | Approved for feed in 2018. Approved for food in 2020.             |
| BT11xMIR162XMIR604XTC1507XSYN5307x GA21<br>Corn<br>MSP resolution 129<br>INVIMA resolution 2021045476                 | Syngenta               |  | Raw material for food.          | Approved for food in 2016 and 2021.                               |
| BT11xMIR162XMIR604XMON89034XSYN5307X GA21<br>Corn<br>ICA resolution 25845<br>INVIMA resolution 2018027803             | Syngenta               |  | Raw material for feed and food. | Approved for feed and food in 2018.                               |
| BT11xMIR162XMON89034XGA21<br>Corn<br>ICA resolution 19223<br>INVIMA resolution 2018027795                             | Syngenta               |  | Raw material for feed and food. | Approved for feed and food in 2018.                               |
| MIR604XTC1507XMON810<br>Corn<br>MSP resolution 130  | Dupont                 |  | Raw material for food.          | Approved for food in 2016.  |
| SYN3272XBT11XMIR604XGA21<br>Corn<br>MSP resolution 2463   | Syngenta               |  | Raw material for food.          | Approved for food in 2016.  |
| SYN3272XBT11XMIR604XTC1507X5307XGA21<br>Corn<br>MSP resolution 3700 289   | Syngenta               |  | Raw material for feed.          | Approved for feed in 2017.  |
| SYN3272XBT11XMIR162XMIR604XTC1507X5307XGA21<br>Corn<br>ICA resolution 7888  | Syngenta               |  | Raw material for feed.          | Approved for feed in 2022.  |
| BT11XMIR162XMON89034<br>Corn<br>ICA resolution 25844  | Syngenta               |  | Raw material for feed and       | Approved for feed and food in 2018.                               |

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| INVIMA resolution 2018027798  |                                     |  | food.                           |  |
| MON 87419 Corn<br>INVIMA resolution 2018040210<br>ICA resolution 30337  | COACOL-<br>Monsanto (United States) |  | Raw material for food and feed. | Approved for food and feed in 2018.                      |
| MON 87411 Corn<br>MSP resolution 5850<br>ICA resolution 18592<br>INVIMA resolution 2022600206                                   | Syngenta                            |  | Raw material for food and feed. | Approved for feed in 2016 and for food in 2016 and 2022. |
| MIR162XMON89034 Corn<br>ICA resolution 25840<br>INVIMA resolution 2018027786  | COACOL-<br>Monsanto (United States) |  | Raw material for feed and food. | Approved for feed and food in 2018.                      |
| MON 87427 X MON 89034 X MIR 162 X NK 603 Corn<br>MSP resolution 250<br>ICA resolution 3701<br>INVIMA resolution 2023007707      | Syngenta<br>Bayer S.A.              |  | Raw material for food and feed. | Approved for feed in 2017 and for food in 2017 and 2023. |
| MON 87427 X MON 89034 X MIR 162 X MON 87419 X NK 603 Corn<br>INVIMA resolution 2021005561<br>ICA resolution 82357               | COACOL-<br>Monsanto (United States) |  | Raw material for food and feed. | Approved for food and feed in 2020.                      |
| MON 87427 X MON 89034 X TC 1507 X MON87411 X DAS 59122 Corn<br>ICA resolution 25841<br>INVIMA resolution 2018027783             | COACOL-<br>Monsanto (United States) |  | Raw material for feed and food. | Approved for feed and food in 2018.                      |
| MON 87427 X MON 89034 X TC 1507 X MON87411 X DAS 59122 X MON 87419 Corn<br>ICA resolution 13024<br>INVIMA resolution 2019040927 | COACOL-<br>Monsanto (United States) |  | Raw material for feed and food. | Approved for feed and food in 2019.                      |
| MON 87427 X MON 89034 X MON87419 X NK 603 Corn<br>INVIMA resolution 2019040930<br>ICA resolution 61761                          | COACOL-<br>Monsanto (United States) |  | Raw material for feed and food. | Approved for food in 2019. Approved for feed in 2020.    |
| MON 87427 x MON87419 x NK 603 Corn<br>INVIMA resolution 2020023047<br>ICA resolution 82358                                      | COACOL-<br>Monsanto (United States) |  | Raw material for food and feed. | Approved for food and feed in 2020.                      |
| MON 89034 X TC 1507 X MON87411 X DAS 59122 X DAS 40278 Corn<br>INVIMA resolution 2018027774                                     | Dow Agrosciences                    |  | Raw material for food.          | Approved for food in 2018.                               |
| MON 87427 X MON 89034 X DAS 1507 X MON87411 X DAS 59122 X DAS 40278 Corn<br>INVIMA resolution 2018027775                        | Dow Agrosciences                    |  | Raw material for food.          | Approved for food in 2018.                               |
| MON 87427 X MON 89034 X MIR162 X MON87411 Corn<br>ICA resolution 19218<br>INVIMA resolution 2018027780                          | COACOL-<br>Monsanto (United States) |  | Raw material for feed and food. | Approved for feed and food in 2018.                      |

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| MON87427 x MON89034 x MON810 x MIR162 x MON87411 x MON87419 Corn<br>ICA resolution 94974<br>INVIMA resolution 2021014502          | COACOL-<br>Monsanto (United States)                   | Resistant to insects and tolerant to herbicides.  | Raw material for feed and food. | Approved for feed and food in 2021.                   |
| MON 87427 X MON 87460 X MON 89034 X TC 1507 X MON 87411 X DAS 59122 Corn<br>ICA resolution 25843<br>INVIMA resolution 20185027785 | COACOL-<br>Monsanto (United States)                   |   | Raw material for feed and food. | Approved for feed and food in 2018.                   |
| MZHG0JG Corn<br>ICA resolution 19221<br>INVIMA resolution 2018027790  | Syngenta  |   | Raw material for feed and food. | Approved for feed and food in 2018.                   |
| MZIR098 Corn<br>ICA resolution 30332<br>INVIMA resolution 2019015592  | Syngenta  |   | Raw material for feed and food. | Approved for feed in 2018. Approved for food in 2019. |
| MON 89034 X TC 1507 X MON 88017 X DAS 59122 X DAS 40278 Corn<br>MSP resolution 4903<br>INVIMA resolution 2022009523               | Dow Agrosience<br>Corteva<br>Agriscience              |   | Raw material for food.          | Approved for food in 2016 and 2022.                   |
| GA21 X T25 Corn<br>MSP resolution 5849<br>ICA resolution 18582  | Syngenta  |   | Raw material for food and feed. | Approved for food and feed in 2016.                   |
| MON87427 x MON89034 x TC1507 x MON87411 x DAS59122 x DAS40278 Corn  | Dow Agrosience  |   | Raw material for feed.          | Approved for feed in 2019.                            |
| MON 810 X NK 603 corn<br>INVIMA resolution 2020015747   | COACOL-<br>Monsanto                                   | Tolerant to Roundup and insect resistant.         | Raw material for food.          | Approved for food in 2020.                            |
| 5307 Corn<br>INVIMA resolution 2020032881   | Syngenta  | Resistant to insects.                             | Raw material for food.          | Approved for food in 2020.                            |
| Fenaltec22 TC 1507<br>INVIMA resolution 2022500207  | FENALCE   |   | Raw material for food.          | Approved for food in 2022.                            |
| SYN3272 x BT11 x MIR162 x GA21 corn<br>ICA resolution 13535   | Syngenta  |   | Raw material for feed.          | Approved for feed in 2022.                            |
| Roundup Ready Wheat *1-MON 71800<br>SEABA ACT II  | COACOL-<br>Monsanto                                   | Tolerant to Roundup herbicide.                    | Raw material for food.          | Approved for food in 2004.                            |
| HB4 Wheat IND-ØØ412-7<br>ICA resolution 82350<br>INVIMA resolution 2022500206   | Rizobacter de<br>Colombia S.A.S                       | Tolerance to abiotic stress. Herbicide tolerance. | Raw material for feed and food. | Approved for feed in 2020 and food in 2022.           |
| Roundup Ready Soybean-MON 04032-6/GTS 40302<br>SEABA ACT VII<br>ICA resolution 2942   | COACOL-<br>Monsanto (United States)                   | Tolerant to Roundup herbicide.                    | Raw material for food and feed. | Approved for food in 2005 and feed in 2007.           |
| Roundup Ready Soybean-MON 04032-6/GTS 40302<br>ICA resolution 82353 and 95614   | Alimentos FINCA<br>SAS Agropecuaria<br><br>ALIAR S.A. |   | Raw material for feed.          | Approved for feed in 2020 (Off-patent).               |

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| Roundup Ready Soybean-MON 04032-6/GTS 40302<br>ICA resolution 13534  | FENALCE                                       |   |                                 | Not approved for feed/commercial plantings                     |
| Roundup Ready 2Yield Soybean-MON 89788<br>ICA resolution 1256<br>MSP resolution 2391<br>INVIMA resolution 2021005568 | COACOL-Monsanto (United States)               | Tolerant to Roundup herbicide.  | Raw material for feed and food. | Approved for food in 2010 and 2021. Approved for feed in 2010. |
| GAT Soybean-DP 356043<br>MSP resolution 2392<br>ICA resolution 2406  | Dupont (United States)                        | Tolerant to herbicide.  | Raw material for food and feed. | Approved for food and feed in 2010.                            |
| DP202216 Soybean<br>INVIMA resolution 2021012391   | Dupont (United States)                        | Tolerant to herbicide.  | Raw material for food.          | Approved for food in 2021.                                     |
| MON 87701X MON 89788 Soybean<br>MSP resolution 116<br>ICA resolution 3663<br>INVIMA resolution 2022600255            | COACOL-Monsanto (United States)<br>Bayer S.A. | Resistant to some lepidopterous insects and tolerant to Roundup herbicide | Raw material for food and feed. | Approved for food in 2012 and 2022. Approved for feed in 2011. |
| Glycine Max Soybean-CV 127<br>MSP resolution 117<br>ICA resolution 3668  | BASF  | Tolerant to Roundup herbicide.  | Raw material for food and feed. | Approved for food in 2012. Approved for feed in 2011.          |
| A 270412 Soybean<br>INVIMA resolution 2020023048   | BASF  | Tolerant to Roundup herbicide.  | Raw material for food.          | Approved for food in 2020.                                     |
| MON 87705 Soybean<br>ICA resolution 3566<br>MSP resolution 338<br>INVIMA resolution 2019031452                       | COACOL-Monsanto (United States)               | Tolerant to Roundup herbicide.  | Raw material for feed and food. | Approved for feed in 2012. Approved for food in 2014 and 2019. |
| MON 87701 Soybean<br>INVIMA resolution 2019030764  | COACOL-Monsanto                               | Resistant to some lepidopterous insects                                   | Raw material for food.          | Approved for food in 2019.                                     |
| MON 87769 Soybean<br>ICA resolution 3565<br>MSP resolution 339<br>INVIMA resolution 2019031453                       | COACOL-Monsanto                               | Tolerant to Roundup herbicide.  | Raw material for feed and food. | Approved for feed in 2012. Approved for food in 2014 and 2019. |
| A5547 Soybean<br>ICA resolution 3564<br>MSP resolution 3486<br>INVIMA resolution 2020018738                          | Bayer S.A.                                    | Tolerant to herbicide.  | Raw material for feed and food. | Approved for feed in 2012. Approved for food in 2014 and 2020. |
| A2704 Soybean<br>ICA resolution 3579<br>MSP resolution 4083  | Bayer S.A.                                    | Tolerant to herbicide.  | Raw material for feed and food. | Approved for feed in 2012. Approved for food in 2014.          |
| DAS68416-4 Soybean<br>ICA resolution 3051<br>MSP resolution 131  | Dow Agrosience                                | Tolerant to herbicide.  | Raw material for feed and food. | Approved for feed in 2013. Approved for food in 2016.          |
| MON 87708 X MON 89788 Soybean<br>ICA resolution 420<br>MSP resolution 1257<br>INVIMA resolution 2021005562           | Monsanto                                      | Tolerant to herbicide.  | Raw material for feed and food. | Approved for feed in 2014. Approved for food in 2015.          |

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| MON 87708 X MON 89788 X A5547 Soybean<br>ICA resolution 30333<br>INVIMA resolution 2018027784                | Monsanto                                   | Tolerant to herbicide.         | Raw material for food and feed. | Approved for food and feed in 2018.                            |
| MON 87708 Soybean<br>MSP resolution 1259   | COACOL-Monsanto                            | Tolerant to herbicide.         | Raw material for food.          | Approved for food in 2015.                                     |
| MON 87705 X MON 89788 Soybean<br>ICA resolution 131<br>MSP resolution 1258<br>INVIMA resolution 2021005632   | COACOL-Monsanto (United States)            | Tolerant to Roundup            | Raw material for feed and food. | Approved for feed and food in 2015 and 2020.                   |
| MON 87705 X MON 89788 X MON 87708 Soybean<br>ICA resolution 19219<br>INVIMA resolution 2018027782            | COACOL-Monsanto (United States)            | Tolerant to Roundup herbicide. | Raw material for feed and food. | Approved for feed and food in 2018.                            |
| MON 87751 X MON 87708 X MON 87701 X MON89788 Soybean<br>ICA resolution 30333<br>INVIMA resolution 2019030763 | COACOL-Monsanto (United States)            | Tolerant to Roundup herbicide. | Raw material for feed and food. | Approved for feed in 2018. Approved for food in 2019.          |
| MON 87769 X MON 89788 Soybean<br>ICA resolution 132<br>MSP resolution 1256<br>INVIMA resolution 2021005563   | COACOL-Monsanto (United States)            | Tolerant to Roundup herbicide. | Raw material for feed and food. | Approved for feed and food in 2015 and 2020.                   |
| DAS 44406 Soybean<br>ICA resolution 134<br>MSP resolution 125<br>INVIMA resolution 2021045617                | Dow Agrosience                             | Tolerant to herbicide.         | Raw material for feed and food. | Approved for feed in 2015. Approved for food in 2016 and 2021. |
| DAS 68416-4 x MON 89788-1 Soybean<br>ICA resolution 2665<br>MSP resolution 3006                              | Dow Agrosience                             | Tolerant to herbicide.         | Raw material for feed and food. | Approved for feed in 2015. Approved for food in 2016.          |
| ACS-GM006-4 Soybean<br>MSP resolution 3486   | Bayer S.A.                                 | Tolerant to herbicide.         | Raw material for food.          | Approved for food in 2014.                                     |
| ACS-GM005-3 Soybean<br>MSP resolution 4083   | Bayer S.A.                                 | Tolerant to herbicide.         | Raw material for food.          | Approved for food in 2014.                                     |
| SYHT0H2 Soybean<br>ICA resolution 2661<br>MSP resolution 307   | Syngenta and Bayer S.A.                    |                                | Raw material for feed and food. | Approved for feed in 2015. Approved for food in 2017.          |
| FG72(MST-FG072-2) Soybean<br>ICA resolution 4001<br>MHS resolution 2464<br>INVIMA resolution 2022014893      | Bayer S.A.                                 |                                | Raw material for food and feed. | Approved for food in 2016, 2021. Approved for feed in 2016.    |
| DAS-68416XMON89788 Soybean<br>MSP resolution 5851  | Dow Agrosience                             |                                | Raw material feed, food.        | Approved for feed and food in 2016.                            |
| FG72 x A5547-27 Soybean<br>ICA resolution 18597<br>MSP resolution 5854<br>INVIMA resolution 2022600205       | Bayer S.A.<br>BASF Quimica Colombiana S.A. |                                | Raw material for food and feed. | Approved for feed in 2016 and for food in 2016 and 2022.       |

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| DP 305423 Soybean<br>MSP resolution 5855<br>ICA resolution 18588<br>INVIMA resolution 2022600208 | Dupont   |   | Raw material for food and feed. | Approved for feed in 2016 and for food in 2016 and 2022.       |
| DP 305423 X MON 040326 Soybean<br>MSP resolution 702<br>ICA resolution 18586                     | Dupont   |   | Raw material for food and feed. | Approved for food in 2017. Approved for feed in 2016.          |
| DAS 81419 X DAS 44406 Soybean<br>ICA resolution 18595<br>INVIMA resolution 2018027770            | Dupont   |   | Raw material for feed and food. | Approved for feed in 2017. Approved for food in 2018.          |
| DAS 81419 Soybean<br>ICA resolution 3998<br>INVIMA resolution 2022600207                         | Dow Agrosiences                                |   | Raw material for feed and food. | Approved for feed in 2016 and for food in 2022.                |
| MON 87751 Soybean<br>MSP resolution 251<br>ICA resolution 25838<br>INVIMA resolution 2023007705  | COACOL-<br>Monsanto (United States) Bayer S.A. |   | Raw material for food and feed. | Approved for food in 2017 and 2023. Approved for feed in 2018. |
| GMB 151 Soybean<br>INVIMA resolution 2021023145<br>ICA resolution 102581                         | BASF   | Tolerant to herbicides, resistant to nematodes. | Raw material for food and feed. | Approved for food and feed in 2021.                            |
| Roundup Ready Sugar Beet-H7-1/KM 0071<br>ICA resolution 1255<br>SEABA ACT VII                    | COACOL-<br>Monsanto (United States)            | Tolerant to Roundup herbicide.                  | Raw material for food and feed. | Approved on for food in 2005. Approved for feed in 2010.       |
| Liberty-link Rice<br>LLRice62<br>MSP resolution 5333<br>ICA resolution 308                       | Bayer S.A.                                     | Tolerant to herbicide.                          | Raw material for food and feed. | Approved for food and feed in 2008.                            |
| LLRice601<br>MSP resolution 3674   | Bayer S.A.                                     | Tolerant to herbicide.                          | Raw material food, feed.        | Approved for food and feed in 2008.                            |
| MON 88302-9 Canola<br>ICA resolution 421<br>MSP resolution 5806<br>INVIMA resolution 2020016745  | COACOL-<br>Monsanto (United States)            | Tolerant to herbicide.                          | Raw material for feed and food. | Approved for feed and food in 2014 and 2020.                   |
| RF3 Canola<br>MSP resolution 1607<br>ICA resolution 11239<br>INVIMA resolution 2023007711        | Bayer S.A.                                     | Tolerant to herbicide.                          | Raw material for food and feed. | Approved for feed in 2017 and food in 2017 and 2023.           |
| MS8 Canola<br>ICA resolution 11294<br>INVIMA resolution 2018027776                               | Bayer S.A.                                     | Tolerant to herbicide.                          | Raw material for feed and food. | Approved for feed in 2017. Approved for food in 2018.          |
| MON88302XRF3 Canola<br>ICA resolution 11240<br>INVIMA resolution 2018027779                      | Bayer S.A.                                     | Tolerant to herbicide.                          | Raw material for feed and food. | Approved for feed in 2017. Approved for food in 2018.          |
| MS8XMON88302XRF3 Canola<br>ICA resolution 11246  | Bayer S.A.                                     | Tolerant to herbicide.                          | Raw material for feed and       | Approved for feed in 2017. Approved                            |

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| INVIMA resolution 2018027777  |   |                                   | food.                                 | for food in 2018.                      |
| DP73496 Canola<br>INVIMA resolution 2022009524<br>ICA resolution 7887 | Corteva<br>Agriscience de<br>Colombia S.A.S                     | Tolerant to<br>herbicide.         | Raw material<br>for feed and<br>food. | Approved for feed<br>and food in 2022. |
| MS11 Canola<br>ICA resolution 15185<br>INVIMA resolution 2022600210   | BASF  | Tolerant glufosinate<br>ammonium. | Raw material<br>for feed and<br>food. | Approved for feed<br>and food in 2022. |
| Mice 3XTg AD<br>MSP resolution 2836                                   | Universidad de<br>Antioquia                                     |                                   | Controlled<br>health<br>research.     | Approved in 2008.                      |
| Mice ApoE-/- 6 Apoe “knockout”<br>MSP resolution 2835                 | Universidad de<br>Antioquia                                     |                                   | Controlled<br>health<br>research.     | Approved in 2008.                      |
| Mice<br>INVIMA resolution 2019030765                                  | Science,<br>Biotechnology and<br>Health Innovation<br>Institute |                                   | Immunosupp<br>ressed mice.            | Approved in 2019                       |

**Attachments:**

No Attachments