Required Report: Required - Public Distribution **Date:** December 22, 2025

Report Number: BE2025-0004

Report Name: Biotechnology and Other New Production Technologies Annual

Country: Belgium

Post: Brussels USEU

Report Category: Biotechnology and Other New Production Technologies

Prepared By: Luigi Castaldi

Approved By: Tyler Babcock

Report Highlights:

This report assesses the agricultural biotechnology sector in Belgium for plants, animals, and microorganisms. Belgium's stance on agricultural biotechnology varies by region, with Flanders generally more receptive than Wallonia. Flanders hosts the country's agricultural biotech hub, where much of the research and experimental field trials take place. While Belgium does not commercially cultivate genetically engineered (GE) crops, its livestock sector relies on imported GE commodities for animal feed. Although Belgium did not hold an official position on the European Commission's proposal to regulate plants derived from new genomic techniques (NGTs), it actively promoted its adoption during its Presidency of the Council of the European Union from January to June 2024 and later supported the Polish Presidency's revised proposal in March 2025, which eventually progressed to trilogue negotiations.

THIS REPORT CONTAINS ASSESSMENTS OF COMMODITY AND TRADE ISSUES MADE BY USDA STAFF AND NOT NECESSARILY STATEMENTS OF OFFICIAL U.S. GOVERNMENT POLICY

EXECUTIVE SUMMARY

Belgium has a long-standing commitment to life sciences and biotechnology, rooted in the pioneering research at Ghent University in the 1970s that led to the development of the first genetically modified plant in the 1980s. Since then, the country has evolved into one of Europe's most competitive biotechnology hubs, often referred to as the "Health & Biotech Valley." The sector is diverse but largely concentrated in health-related biotechnology, which represents around 80 percent of total activity and encompasses biopharmaceuticals, vaccine innovation, and advanced therapies. Industrial biotechnology accounts for about 15 percent and includes enzyme production, bio-based materials, and fermentation-derived ingredients, while agricultural biotechnology represents around 5 percent, focusing on crop improvement, soil health, and microbial applications.

Belgium hosts over 140 biotechnology companies, accounting for 7 percent of all such companies in Europe, contributing nearly 10 percent of R&D expenditure. The sector benefits from strong collaboration between universities and companies, fostering technology transfer and knowledge exchange, leading to the emergence of numerous spin-off biotech companies.

The regional structure of the sector remains distinctive. Flanders is recognized as a biotechnology powerhouse, driven by dense academic-industry cooperation and world-class infrastructure in Ghent. Wallonia's biotechnology base has expanded rapidly, with established hubs in Liège, Charleroi, and Namur focusing on life sciences and biomanufacturing, while the Brussels-Capital Region continues to build an emerging ecosystem supported by public-private partnerships and research institutions.

Belgium adheres to European Union (EU) regulations on agricultural biotechnology. The cultivation of genetically engineered crops is permitted in Flanders but prohibited in Wallonia, while imports of genetically engineered feed remain essential for the livestock sector. Agricultural biotechnology activity is largely confined to controlled research and limited field trials.

On July 5, 2023, the European Commission adopted a proposal to regulate plants derived from new genomic techniques (NGTs). In February 2024, the European Parliament adopted its position on the file. Although Belgium did not have an official national position, it actively promoted progress on the proposal during its Presidency of the Council of the European Union from January to June 2024. Belgium later supported the Polish Presidency's revised proposal in March 2025, which subsequently advanced to trilogue negotiations.

TABLE OF CONTENTS

Belgium is a member of the European Union. For more detailed information on EU Regulations and Directives, please see the EU-wide overview provided by the current Agricultural Biotechnology Annual European Union Report as published on the GAIN website.

CHAPTER 1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION AND TRADE

a) RESEARCH AND PRODUCT DEVELOPMENT: Belgium has a small but innovative plant breeding sector. (See "POLICY: Field Testing" for a list of field trials to date). However, due to the regulations for developing and approving GE crops in the EU, not a single product has been brought to market. Most ag biotech companies in Belgium are in the biotech cluster in Ghent. Although, many companies in Europe have relocated at least part of their agricultural biotechnology research and development outside of the EU.

b) COMMERCIAL PRODUCTION: In Belgium, there is no commercial production of GE crops. On March 11, 2015, Directive (EU) 2015/412 was officially released allowing Member States to "opt out" of cultivating EU-approved GE crops on their territory[1], and the Wallonia region decided to opt out. The region of Flanders did not opt out; however, commercial production of GE crops is not expected due to the EU regulations for biotech approvals, coexistence rules, and limited producer interest (following perceived consumer lack of acceptance).

c) EXPORTS: Belgium does not produce nor export domestically produced GE crops or products. However, Belgium transhipts imported GE crops and products to other EU member states and re-exports GE materials to non-EU countries. For more information see the Agricultural Biotechnology Annual European Union report at this GAIN link.

d) IMPORTS: As there is no cultivation of GE crops on Belgian soil, the country does not import any GE seeds. However, Belgium relies on imports of GE crops and derived products to feed its livestock sector. Most of the animal feed for poultry and pigs is labeled as "GMO" and sold throughout the country. Imported crops and derived products are mainly soybeans from Brazil, Canada, and the Netherlands,[2] and soybean meal from the Netherlands, the United States, and Brazil. The share of shipments that contain GE material is not registered, but those products coming from the Netherlands are estimated to contain mostly GE material as the Netherlands' top suppliers for soybeans are the United States and Canada as well as Brazil and Argentina for soybean meal.

---

[1]For more information, please see the 2015 Agricultural Biotechnology Annual European Union report: https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Agricultural%20Biotechnology%20Annual_Paris_EU-28_7-23-2015.pdf

[2] However, this may also include transshipments coming from elsewhere, such as Argentina, Brazil, and the United States.

Here is data on Belgium's imports:

Belgium Soybean Imports					
Partner	**Calendar Year**				
	2020	**2021**	**2022**	**2023**	**2024**
_World	649	452	596	360	349
Canada	232	156	145	131	99
Netherlands	69	104	71	76	89
Ukraine	0	2	2	5	70
France	76	51	48	36	38
Togo	6	10	18	26	29
Brazil	235	67	291	66	0
Other	30	62	20	21	25
***Thousand Metric Tons (TMT)**					

Source: Trade Data Monitor

Belgium Soybean Meal Imports					
Partner	**Calendar Year**				
	2020	**2021**	**2022**	**2023**	**2024**
_World	1,368	1,293	1,242	1,361	1,492
Netherlands	1,177	1,002	1,060	1,179	1,145
Argentina	46	28	27	48	132
Brazil	20	51	27	0	80
United States	56	56	49	82	57
Germany	37	45	28	30	29
India	0	81	23	0	18
Others	33	31	30	21	30
U.S. Market Share	4%	4%	4%	6%	4%
***Thousand Metric Tons (TMT)**					

Source: Trade Data Monitor

e) FOOD AID: Belgium is not a food aid recipient, but the country provides food aid. This aid likely does not involve GE plant products for human consumption.

f) TRADE BARRIERS: The approval process of new GE events by the European Union has affected U.S. exports to Belgium, in particular corn (see table below), corn gluten feed (CGF), and distiller's

dried grains with solubles (DDGS). The EU regulations for the low-level presence (LLP) of GE materials have also affected imports of U.S. long grain rice, following the unintended presence of a commercial supply in 2016. Furthermore, mandatory labeling of the presence of GE ingredients in food has caused processors to avoid ingredients that derive from GE varieties.

Belgium Corn Imports					
Partner	**Calendar Year**				
	2020	**2021**	**2022**	**2023**	**2024**
_World	1,907	1,878	1,876	1,576	1,794
France	861	780	949	708	845
Ukraine	419	644	389	359	443
Netherlands	462	344	239	193	239
Poland	1	13	110	227	191
Canada	0	1	0	0	21
Finland	0	0	0	0	12
Others	164	94	186	88	40
***Thousand Metric Tons (TMT)**					

Source: Trade Data Monitor

PART B: POLICY

a) REGULATORY FRAMEWORK: Belgium follows EU legislation regarding agricultural biotechnology. The following authorities are responsible for implementation and enforcement of the regulatory framework for agricultural biotechnology:

- **The Federal Ministers and their Cabinets**

An important part of the decision-making power for biotechnology lies with the Federal Ministers of health, environment, and agriculture and their personal staff, known as the Cabinets. The Ministers choose their Cabinet staff members from a wide range of professions to support them in their field. The main responsibility of the Cabinet is the preparation of policy.

- **The Federal Public Service for Health, Food Chain Safety, and Environment (FPS HEALTH)**

FPS HEALTH is the coordinating Belgian Federal Government Department in the policy-making process in the field of medical and agricultural biotechnology. As a Belgian federal government body, it employs civil servants. FPS HEALTH is responsible for the enforcement of legislation regarding experimental releases or field trials in co-decision with the Department of Environment and Infrastructure of the Flemish Government, the General Directorate of Natural Resources and Environment of the Walloon Government, and the Environmental Department of the Brussels

Capital Region, depending on where the experimental release takes place. The regions have a veto-right, but it is the affected region that co-decides with the federal authorities about the specific release.

The Biosafety Advisory Council (BAC) and the Service Biosafety and Biotechnology (SBB) unit advise FPS HEALTH about the safety of activities involving GE animals and plants. The BAC consists of members, who act as independent experts, and are appointed by the federal and regional Agriculture and Public Health Ministers, as well as the Ministers of Work and of Science Policy. The BAC gives advice on field trials and marketing dossiers. The SBB acts as the secretariat of the BAC and handles all contained use dossiers, which are delegated from the BAC to the SBB. The SBB is comprised of scientists connected to the public health research institution, Sciensano. A list of staff members can be found on the SBB website.

The Belgian Federal Agency for the Safety of the Food Chain (FASFC) is responsible for the documenting and physical controls of food and feed. FASFC implements and enforces the EU legislation concerning the traceability and labelling of GE food and feed products (Regulation (EC) No 1830/2003).

Belgium normally "abstains" its vote in the Committee of the Permanent Representatives of the Governments of the Member States to the European Union (COREPER) and the Standing Committee on Plants, Animals, Food and Feed (PAFF). It sometimes votes "in favor." The two Belgian regions, Flanders and Wallonia, often fail to reach a compromised position that gives the Federal Belgian Government the mandate to vote "in favor" or "against." Furthermore, Wallonia is one of the regions that "opted-out" of GE cultivation (Directive (EU) 2015/412 of March 11, 2015).

When deciding on a Belgian position on a GE plant variety, the Belgian federal government reviews the following: the European Food Safety Authority (EFSA)'s opinion on the specific GE event, the advice of BAC, and other risk management criteria such as the availability of reference materials and detection methods and the quality of monitoring. In cases when the technical review of BAC is not in line with EFSA's opinion, the Belgian federal government starts bilateral discussions with EFSA in order to resolve the diverging issues. However, if they cannot be resolved, the Belgian government may decide to vote against it or to abstain on the particular GE event. For a particular GE event where the EFSA opinion is positive and the advice of the BAC is in line, the Belgian government may decide to abstain from voting. Please search for the Agricultural Biotechnology Annual European Union report in GAIN for more information on the European agricultural biotechnology approval process.

b) APPROVALS/AUTHORIZATIONS: Belgium accepts the EU approvals listed in the EU's community register of "GM" food and feed.

c) STACKED or PYRAMIDED EVENT APPROVALS: Belgium implemented Regulation (EC) No 1829/2003 on genetically modified food and feed, allowing authorization of stacked events only if the single events have already been authorized.

d) FIELD TESTING: Field trials have been approved without delays following the procedures in the February 21, 2005 Royal Decree, implementing Directive 2001/18/EC on the deliberate release of GE crops or products into the environment. It has been modified by the Royal Decree of February 19, 2020 (Moniteur Belge/Belgisch Staatsblad of 02.03.2020, p. 12666), which transposes the Commission Directive (EU) 2018/350 into Belgian regulations for the environmental risk assessment of GE events.

Current and Past Field Trials:

- A field trial with GE Bintje potatoes (cisgenic late blight resistant) was conducted in 2011 and 2012. The 2011 trial was vandalized, but it did not occur again.
- A field experiment with GE corn (increased energy content) in 2012 and 2013.
- A second GE corn trial was performed in 2015 and 2016 with plants that had larger leaves and more biomass.
- A field trial with GE poplar trees ended at the beginning of 2016. A new trial with poplars was planted in 2014 and was completed in 2020. The GE poplar tree variety is developed for the purpose of bioethanol production.
- In 2018 and 2019, another GE corn with modified growth characteristics was tested in the field.
- In 2017, 2018, and 2019, corn edited using the CRISPR/Cas9 system was grown. The edit impaired the crop's DNA-repair mechanism. Only in 2019, a corn field trial permit was obtained (after the ECJ ruling) with three comparable CRISPR/Cas9 edits to impair the DNA-repair mechanism was performed. It was meant to investigate the possibility to use this corn as a biosensor to measure environmental stress. For the first two years there was no GMO field trial permit because the federal authorities were at that time of the opinion that this was not necessary.
- From April 2020 to October 2022, GE corn with elongated duration of growth and thus larger leaves and more biomass was tested in the field.
- In June 2021, a new four-year field trial started with GE poplar that has an altered wood composition.
- In April 2022, after favorable opinions from the Biosafety Advisory Council, the Belgian federal authorities authorized three new field trials with genome-edited corn with modified growth characteristics, improved digestibility, and increased resistance against environmental stress. The field trials will be performed over a three-year time period to better estimate the effect of the genetic alterations on the complete life cycle of the plant in real agricultural growth conditions.
- In April 2023, Belgium's federal authorities authorized an R&D field trial at the ILVO research institute in Wetteren (East-Flanders), conducted by INARI Agriculture. This trial is aimed at assessing CRISPR-Cas technology gene-edited maize lines with reduced height.

- In June 2024, Belgium's federal authorities authorized four additional field trials. Two of these trials involve the evaluation of GE poplars developed by VIB, which feature decreased lignin content. Another trial, also from VIB, focuses on gene-edited maize that uses CRISPR-Cas technology introduced via Agrobacterium to achieve lower lignin levels for enhanced feed digestibility. Additionally, INARI Agriculture has requested a field trial for edited maize lines that exhibit shorter stature and increased biomass.

  The list of notifications for the deliberate release of GE plants into the environment (through experimental field trials – not for market) is available on the European Commission's Joint Research Center (JRC)'s website. Belgium has contributed 20 plant notifications since the implementation of Directive 90/220/EEC (21 October 1991). Since 1991, 22 EU Member States have notified 940 cases of the deliberate release of GE plants.

e) INNOVATIVE BIOTECHNOLOGIES: Belgium is complying with the European Court of Justice's (ECJ) ruling in treating new genomic techniques (NGTs) as outlined in the EU "GMO" legislation. Flanders, renowned for its advanced plant breeding sector and extensive biotech expertise, had been pushing for exceptions for new biotechnologies. However, the ECJ ruling linking innovative biotech and genetic engineering has influenced the debate. This debate, combined with Wallonia's standpoint towards agricultural biotechnology, has left the government conflicted.

Despite these challenges, genome editing has gained substantial traction within Belgian laboratories, encompassing research in plants, microorganisms, and red biotechnology involving vertebrate cells and laboratory animals. However, this research primarily serves as fundamental or basic research, with a focus on understanding underlying principles rather than product development.

The larger breeding companies are using innovative biotechnology in their breeding programs. Some small and medium sized breeding companies are using innovative biotechnology in their laboratories, but unless they work on programs to develop varieties for the non-European market, this will not result in a product for market. Research institutes have explored innovative biotechnology crops, such as late blight resistant Bintje potatoes, hypoallergenic celery, and non-bitter chicory and endive. Nevertheless, due to the persistent EU "GMO" Directive, these innovations face substantial barriers to reaching the market.

In April 2021, a European Commission report concluded that the GMO Directive is not fit for purpose for plants developed using NGTs, underscoring the need for a specific legal framework. By September 2021, the Commission introduced a roadmap for dedicated legislation, and on July 5, 2023, it adopted a proposal to regulate plants derived from NGTs.

The proposal introduces two categories: Category 1 includes NGT plants similar to those found in nature or conventionally bred, exempt from certain regulations; Category 2 includes NGT plants with traits that cannot occur naturally, subject to GMO rules, authorization, and labeling. Sustainability-driven incentives may apply to Category 2, except for herbicide tolerance traits. Both

categories require labeling of NGT reproductive materials and are banned in organic farming. Member states cannot independently prohibit NGT plants. (See GAIN).

On 4 December, the European Parliament and the Council of the EU reached a provisional agreement on a legal framework for the NGTs proposal. According to the EU institutions, the regulation is intended to strengthen the competitiveness of the EU agrifood sector, ensure a level playing field, and support food security, while maintaining high health standards and aligning with the EU's sustainability objectives. The official press releases from the European Parliament and the European Commission are available here and here respectively.

e) COEXISTENCE: The two Belgian regions - Flanders and Wallonia, are responsible for formulating and implementing coexistence policies. In March 2007, the Flemish Government developed a framework for the coexistence regulations, which was enforced in May 2009, including specific requirements for corn and potato. The regulations reportedly guarantee free choice for the farmer to plant GE crops and include a liability fund. In February 2006, the Walloon government approved coexistence regulations, which came into force in August 2008. According to the Walloon government, the regulations on cultivating GE crops are as restrictive as possible within the scope of the harmonized EU regulations. The regulations contain possibilities to impose "biotech free" zones, and a liability fund paid by the farmer planting GE crops. In addition, Wallonia is one of the regions that has "opted-out" of GE cultivation Directive (EU) 2015/412.

f) LABELING AND TRACEABILITY: Belgium implements Regulation (EC) No 1830/2003 concerning the traceability and labelling of "GMOs" and the traceability of food and feed products produced from GE events.

g) MONITORING AND TESTING: In Belgium, the FASFC performs enforcement activities related to possible GE traits in imports. Actual testing is performed by three official GMO testing laboratories (one in each region). Positive tests are submitted to the European Rapid Alert System for Food and Feed (RASFF) if a non-authorized event is found. Actions following a positive test can be destruction or transport out of the EU.

h) LOW LEVEL PRESENCE (LLP) POLICY: Belgium follows the latest EU legislation, which allows a 0.1 percent limit for pending unapproved biotech events in feed shipments (technical solution that defines zero), as long as the application was submitted to EFSA. For unapproved biotech events found in shipments of food to the EU, a zero tolerance is still in place.

i) ADDITIONAL REGULATORY REQUIREMENTS: None.

j) INTELLECTUAL PROPERTY RIGHTS (IPR): Belgium follows the EU's Directive 98/44/EC for the regulation and legal protection of biotechnological inventions. However, IPR is not applicable since commercial production of GE crops is absent in Belgium.

k) CARTAGENA PROTOCOL RATIFICATION: Belgium has signed, ratified and implemented the Cartagena Protocol on Biosafety (CPB) to the United Nations' Convention on Biological Diversity. FPS HEALTH is responsible for the implementation of the CPB.

l) INTERNATIONAL TREATIES and FORUMS: Belgium is an active participant in the International Standard Setting Bodies (ISSBs). It is a member of Codex Alimentarius and a contracting party of the International Plant Protection Convention (IPPC). Brussels hosted the first World Food Safety Day in June 2019 in coordination with FAO and the European Union. Belgium does not usually weigh in or speak out on issues regarding biotechnology in these forums.

m) RELATED ISSUES: None.

PART C: MARKETING

a) PUBLIC/PRIVATE OPINIONS: A Special Eurobarometer report on biotechnology in 2010 found that 54 percent of Belgians surveyed believed biotechnology and genetic engineering "will have a positive effect on (the) way of life in the next 20 years." However, 65 percent did not agree that "the development of GE food should be encouraged." More Belgians agreed with encouraging the use of genes found naturally in a species, compared to those supporting transferring genes between species. Recent Eurobarometer surveys show evolving attitudes. The 2022 Eurobarometer on food safety indicated decreased concern among Belgians about genetically modified ingredients in food and drinks compared to 2019, with Belgian levels below the EU average. According to the latest (2025) EU food safety Eurobarometer, Belgians increasingly identify other issues (like food additives, pesticides, and microplastics) as bigger safety risks, while awareness of EU food safety measures has also increased. The latest policy debate has focused on NGTs. The Belgian Superior Health Council considers NGT-edited plants to be distinct from older GMOs, carrying fewer intrinsic risks and being mostly undetectable by standard tests. The Council highlights that perceived risks depend mainly on specific traits rather than the underlying technology

b) MARKET ACCEPTANCE/STUDIES: Boerenbond, the Flemish Farmers' Organization, supports planting biotech and NGT crops, but wants patented plant material to remain available for developing new varieties. Retailers and consumers are more cautious. Belgian livestock feed relies mostly on imported genetically engineered soybean meal, but consumers generally accept meat, milk, or eggs from animals fed biotech feed. Early studies suggest NGT crops may face similar caution as older GM products, though clearer benefits or sustainability advantages can increase acceptance. Market uptake will mainly depend on rules, patent access, and retailer requirements. (for more information, see Regulation (EC) No 1830/2003 concerning the traceability and labelling of GE food and feed products).

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART D: PRODUCTION AND TRADE

a) RESEARCH AND PRODUCT DEVELOPMENT: There are currently no EU market authorizations, nor announced Belgian pathways, indicating that genetically engineered (GE) or cloned animals will enter the Belgian market in the next five years. Belgium supports research under contained-use rules, which explicitly cover genetically modified (GM) animals in laboratories, animal units, hospital rooms, and production units for research and clinical applications. Belgian research infrastructures include animal facilities operating under strict biosafety oversight, reflecting ongoing biomedical research with animal models within contained-use frameworks rather than commercial biotechnology pipelines.

b) COMMERCIAL PRODUCTION: Belgium does not have any commercial production of GE or cloned animals. GE animals are authorized strictly for use as laboratory animals in medical research at universities and academic hospitals within contained-use frameworks as per the Belgian biosafety regulatory system and EU Directive 2010/63/EU on animal research.

c) EXPORTS: Since Belgium does not produce GE or cloned animals commercially, there are no exports of such animals or their reproductive materials.

d) IMPORTS: Belgium has likely imported semen and embryos from cloned animals or their offspring, although specific import volumes and traceability data are not publicly available. This aligns with EU-wide challenges in tracing clone progeny as explained by the European Commission's 2015 study on clone product labeling.

e) TRADE BARRIERS: No applications have been filed for the approval of animal biotech products or cloned animal products.

PART E: POLICY

a) REGULATORY FRAMEWORK: Belgium implements EU legislation on animal biotechnology and cloning within a coordinated federal-regional governance system. This system is guided by the Cooperation Agreement of 25 April 1997 establishing the Biosafety Advisory Council (BAC) and the Service Biosafety and Biotechnology (SBB) at Sciensano, which advise on biosafety and GE animal authorizations. GE animals are authorized only under contained-use for research and not for commercial food chain entry (Belgian Biosafety Clearing-House).

b) APPROVALS/AUTHORIZATIONS: No applications have been filed for the approval of animal biotech products. No GE animals or animal clones have been authorized for entrance into the food chain.

c) INNOVATIVE BIOTECHNOLOGIES: Belgium follows EU and international developments on new genomic techniques (NGTs) in animals. In August 2025, EFSA concluded that NGT animals pose no novel hazards compared with conventional breeding or earlier genetic modification methods, and existing GMO guidance remains broadly applicable. Belgium continues to assess all GE and NGT animal activities under current EU legislation and national contained-use rules until specific EU NGT legislation is adopted.

d) LABELING AND TRACEABILITY: The Belgian government likely supports an EU ban on food products directly derived from cloned animals but not on products from their progeny. It favors labeling products derived from clone progeny, citing consumer rights to know despite the significant difficulty in traceability (European Commission clone labeling study).

e) ADDITIONAL REGULATORY REQUIREMENTS: None beyond the EU harmonized frameworks.

f) INTELLECTUAL PROPERTY RIGHTS (IPR): Directive 98/44/EC is the EU legislation followed by Belgium for the regulation and the legal protection of biotechnological inventions

g) INTERNATIONAL TREATIES AND FORUMS: Belgium is a member of the World Organization for Animal Health (WOAH) and aligns with EU stances in international discussions.

h) RELATED ISSUES: None.

PART F: MARKETING

a) PUBLIC/PRIVATE OPINIONS: Belgian government and livestock sector representatives are knowledgeable about animal biotechnology but generally do not support cloning use due to potential market concerns. Belgian consumers broadly oppose cloning and agricultural genetic engineering, impacting industry acceptance.

b) MARKET ACCEPTANCE/STUDIES: No recent Belgium-specific surveys are available on animal cloning or genetic engineering. The latest data date back to the 2010 Eurobarometer, which showed that 76 percent of Belgians disagreed that “animal cloning in food production should be encouraged,” while 17 percent agreed. More recent EU-wide studies (2024–2025) confirm that these concerns persist across Europe: around 64 percent of respondents favor strict ethical controls on biotechnology in farming, and only about 27 percent support expanding genetic technologies in animal breeding. Belgian consumers continue to mirror this broader EU caution, remaining wary of cloning in the food chain. Market acceptance challenges therefore persist, reinforced by public demand for clear labeling and traceability of clone-derived products.

CHAPTER 3: MICROBIAL BIOTECHNOLOGY

PART G: PRODUCTION AND TRADE

a) COMMERCIAL PRODUCTION: Publicly available information on the development and production practices of genetically engineered (GE) microorganisms remains limited, due to confidentiality and the “contained use” nature of most activities. Nonetheless, Belgium hosts significant biotech research and industrial capacity, especially in Flanders, where fermentation-based production of food enzymes and additives using both genetic engineering and gene editing of microorganisms is widespread. These microbial biotech methods offer environmental and efficiency advantages over chemical synthesis, aligning with Belgium’s strong European position in industrial biotechnology.
According to the 2025 EFSA Eurobarometer on Food Safety in the EU, Belgian respondents show growing trust in biotechnological innovations when adequately informed of their purpose and regulation. Most Belgians associate biotechnology with general food technology, even though few specifically identify microbial biotechnology as a distinct sector or define it explicitly.
Filtered through the EU regulatory framework, these activities are governed under Directive 2009/41/EC on the contained use of genetically modified microorganisms, which requires high biosafety standards in laboratories and production units. Under Regulation (EC) 1830/2003, food enzymes or additives produced with genetically engineered microorganisms do not require "GMO" labelling if the final product contains no recombinant DNA or cells of the GE microorganism.

b) EXPORTS: Belgium exports numerous microbial biotech-derived food ingredients—such as enzymes and vitamins—to markets including the United States, generally without GMO labelling obligations, provided the products do not contain the GE organism or its DNA. The Eurobarometer indicates that Belgian consumers’ trust relies heavily on regulatory assurances rather than technical familiarity, supporting steady market acceptance domestically and abroad.

c) IMPORTS: Belgium imports microbial biotech-derived ingredients without commercial distinction from non-GE equivalents. Import controls by the Federal Agency for the Safety of the Food Chain (FASFC) detect traces of GE microorganisms when present, triggering notifications via the EU RASFF, with follow-up compliance measures including destruction or export out of the EU.

d) TRADE BARRIERS: The EU’s “GMO” legal framework mandates that products containing genetically modified microorganisms or their genetic material be authorisation-approved and labelled accordingly. If the GE microorganism and DNA are absent in the end product, it is exempt from GMO labelling and regulated under the contained-use legislation. This condition forms the main trade barrier protection under EU rules.

PART H: POLICY

a) REGULATORY FRAMEWORK: See the policy section in chapter one for more information. If no GE microorganisms (or their recombinant DNA) are present in the final food or feed product, the EU's "Contained Use" Directive (Directive 2009/41/EC) can be applied. Please see the plant section for references to the Belgian regulatory framework. In Belgium, "contained use" is defined as "any activity in which organisms are genetically modified or in which genetically modified and/or pathogenic organisms are cultured, stored, transported, destroyed, disposed of or used in any other way, and for which specific containment measures are used to limit their contact with, and to provide a high level of safety for, the general population and the environment." These activities occur in a "closed environment," which includes laboratories, animal units, greenhouses, production units, and hospital rooms. The use of GE organisms in clinical trials as part of gene therapy or in veterinary trials may in some cases also be considered "contained use," and they are notified separately. According to the Belgian Biosafety Server, "The scope of the Belgian regional legislation is broader than the scope of the EU Directive since it includes, in addition to genetically modified microorganisms (GMMs), genetically modified organisms (GMOs), and pathogenic organisms." Contained use activities are regulated at a regional level (Wallonia, Flanders, Brussels-Capital) and included within the environmental laws for classified installations referenced in the plant section.

- Brussels-Capital Region
    - Please see https://www.biosafety.be/content/contained-use-gmos-andor-pathogens-notification-procedure-brussels-capital-region
- Flemish Region
    - Please see https://www.biosafety.be/content/contained-use-gmos-andor-pathogens-notification-procedure-flemish-region
- Wallonia Region
    - Please see https://www.biosafety.be/content/contained-use-gmos-andor-pathogens-notification-procedure-wallonia

b) APPROVALS/AUTHORIZATIONS: Please search the Agricultural Biotechnology Annual European Union report in GAIN for more information.

c) LABELING and TRACEABILITY: If the Contained Use Directive (Directive 2009/41/EC) is applicable to the product, there is no labeling obligation. If the final products are thoroughly purified to make sure all traces of GE microorganisms are absent, no "GMO" labeling is required. Belgium implements Regulation (EC) No 1830/2003 concerning the traceability and labelling of "GMOs" and the traceability of food and feed products produced from GE events.

d) MONITORING AND TESTING: Belgium tests for evidence of genetic engineering in imports of processed products. Tests are performed by the FASFC. Positive tests are submitted into the RASFF. Actions following a positive test can be destruction or transport out of the EU.

e) ADDITIONAL REGULATORY REQUIREMENTS: None.

f) INTELLECTUAL PROPERTY RIGHTS (IPR): Belgium follows the EU's Directive 98/44/EC for the regulation and legal protection of biotechnological inventions.

g) RELATED ISSUES: None.

PART I: MARKETING

a) PUBLIC/PRIVATE OPINIONS: According to the 2025 EFSA Eurobarometer on Food Safety in the EU, Belgian consumers demonstrate high trust in scientists (84 percent), food safety authorities (70 percent), and EU institutions (69 percent) regarding food biotechnology. While biotechnology is generally associated with modern food technology, only a minority of respondents specifically recognized microbial biotechnology as a distinct area. Concerns related to pesticides and chemical residues remain far more prominent than those concerning biotechnological food production methods. The Eurobarometer infographic summary and its press release show that overall public confidence in the EU food-safety system has increased substantially since 2022. EFSA attributes this to greater awareness of the role of science and transparency in risk assessments

b) MARKET ACCEPTANCE/STUDIES: While there are no Belgium-specific market-acceptance studies focused solely on microbial biotechnology in food, Eurobarometer 2025 data and EU innovation initiatives - such as EIT Food's Next Bite 2025 - suggest positive consumer receptivity toward biotechnological processes when they are described as an evolution of traditional fermentation. Consumers respond especially well when microbial biotechnology is linked to sustainability benefits (reduced resource use and lower emissions) and safety improvements. These biotechnology-derived enzymes and additives are widely used across the Belgian and EU food industries without mandatory GMO labelling or measurable consumer resistance

Attachments:

No Attachments