New GMOs

- in Cultivation
- in Development
- withdrawn from the Market

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Editorial

Dear Readers,

Welcome to the second edition of the New GMOs market report, the first publication tailored to food business operators who want a quick overview of which New GMOs they may need to deal with today and in the near future. The editors of this report bring together their international expertise to offer the food industry a vital synopsis of New GMOs. ENGA represents the Non-GMO food and feed industry in Europe, the Non-GMO Project is the main certifier of Non-GMO food in North America, and Eva Gelinsky is a researcher based in Switzerland.

We have decided to use the term New GMO for an international audience rather than the term 'New Genomic Techniques' used by EU institutions or 'gene editing', which is commonly used in North America to describe GMOs into which no 'foreign' DNA has been incorporated. New GMOs are not allowed in Non-GMO commodity chains. In other words, products that carry a Non-GMO label must exclude New GMOs. We also use the term 'old genetic engineering' or old GMOs for transgenic GMOs.

The main criteria for including a plant in our report are cultivation and "cleared for market access"; cultivation is a prerequisite for appearing in commercial food streams, "cleared for market access" means "cleared for cultivation" or clearance is to be expected. The latter crops are listed in our table "New GMOs in Development". Our chapter "Global Hotspots 2026" describes what clearance means in selected countries.

In addition, our readers should be aware that it is often an open question whether plants "in development" will reach the market, become a success or simply disappear again. In other words, if the companies that develop New GMOs are not obliged to disclose cultivation data, we are confronted with uncertainties.

Our recommendation to the food and feed sector: As a minimum requirement, you should explicitly exclude New GMO products in your supplier requirements. If possible, use goods from certification systems that also exclude New GMOs.

Further chapters of our report include New GMOs that have been withdrawn from the market, regulatory developments in the EU and the USA and the status of research into detection methods.

With our report we would like to provide clarification: New GMOs are a promise, but not a market reality. Up to now, not a single plant contributes to sustainability. At the moment, the food sector is by no means faced with a flood of New GMOs, but only with individual plants.

We thank Tyler Arbour (IFOAM Organics Europe) and Lucy Sharratt (Canadian Biotechnology Action Network, CBAN) for their valuable contributions.

We hope you find our research helpful, and we look forward to your feedback and input.

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Executive Summary

Our report shows the huge discrepancy between the hype surrounding New GMOs and the worldwide market reality.

Currently only four New GMOs are being cultivated (one more than in 2025), while the first two plants that were ever cultivated have disappeared from the market (***see table 3***). 108 crops are in development (compared to 49 in 2025), often cleared for market access but not cultivated (***see table 2***).

Until now, despite sweeping claims, not a single New GMO contributes or has contributed to sustainability.

New GMOs in cultivation (Table 1)

Currently four New GMOs are being cultivated in three countries. In the USA, two herbicide- and insect-resistant maize varieties developed with CRISPR are being cultivated. Both varieties are also transgenic. Insect and herbicide resistance as dominant characteristics of "old" (transgenic) genetic engineering have been produced with a new technique, CRISPR. In Japan, a tomato with increased GABA content is on the market, intended to lower blood pressure, also developed with CRISPR. In Columbia, a "compact growth" blackberry is sold to consumers who can receive information on the product via a QR code, including the technology - CRISPR - behind the fruit.

New GMOs in development (Table 2)

In development there are 108 New GM crops which belong to 32 species ***(see graphic 1)***. These include two hemp plants, a gray poplar, oranges, peanuts, rice and wheat. While the application of old genetic engineering largely focussed on five plants - soy, maize, canola, sugar beets and cotton - used as animal feed, processed food ingredients, fuel or clothing, the spectrum of application of the New GMOs is far broader.

With new genetic engineering, companies are working on a variety of plants that are intended for direct human consumption. The developers of New GMOs have also become more diverse: Whereas old GMOs were mainly produced and marketed by the 'four gene giants' Corteva, Bayer, BASF and Syngenta, many companies are involved in the development of New GMOs, as are state institutes. According to our table "New GMOs in Development" their developers are based in 21 countries (in 2025, there were only nine countries). The USA is far and away in the lead, followed by China and Argentina. Among the new additions are the African countries Burkina Faso, Ethiopia, Kenya and Nigeria, the South American countries Chile and Honduras, the East Asian countries Japan and South Korea as well as Israel. European developers are based in Belgium, France, Germany, Great Britain and Sweden (***see graphic 2***).

In our research we identified 60 New GMOs in the USA that are "cleared for market access", a doubling compared to 2025 but are not being cultivated. Many may never reach the market.

CRISPR remains by far the most used technique, only six out of 108 crops were developed with another genome editing technique. **In view of the broad sustainability claims made for New GMOs, a look at the traits is sobering: only six of the crops "in development" could contribute to countering the climate crisis,** a drought tolerant pepper, a drought tolerant rice, a salt tolerant rice, two drought tolerant

soybeans, and a tomato with improved heat tolerance. It remains unclear whether these plants will ever make the transition from "New GMOs in development" to "New GMOs in cultivation".

A striking number of seven plants are "non-browning" or are intended to have a longer shelf life - which could also be described as consumer fraud, as they give the impression of freshness that they do not possess. A further seven plants are herbicide-resistant, the dominant trait in plants produced using old genetic engineering techniques.

New GMOs withdrawn from the market (Table 3)

The media constantly reports on New GMOs that are supposedly soon to come onto the market. On the other hand, failures and plants that have disappeared from the market are barely worth a marginal note. This was the case with the first two New GMOs ever introduced to the market, which were economic flops: They did not bring the companies any boon: one - Cibus - took over the other - Calyxt, and Cibus is under investigation by a series of US law firms for deceiving investors by 'over-hyping' its technology. We reported this back in 2025; we haven't heard anything new since then.

Regulatory Landscape

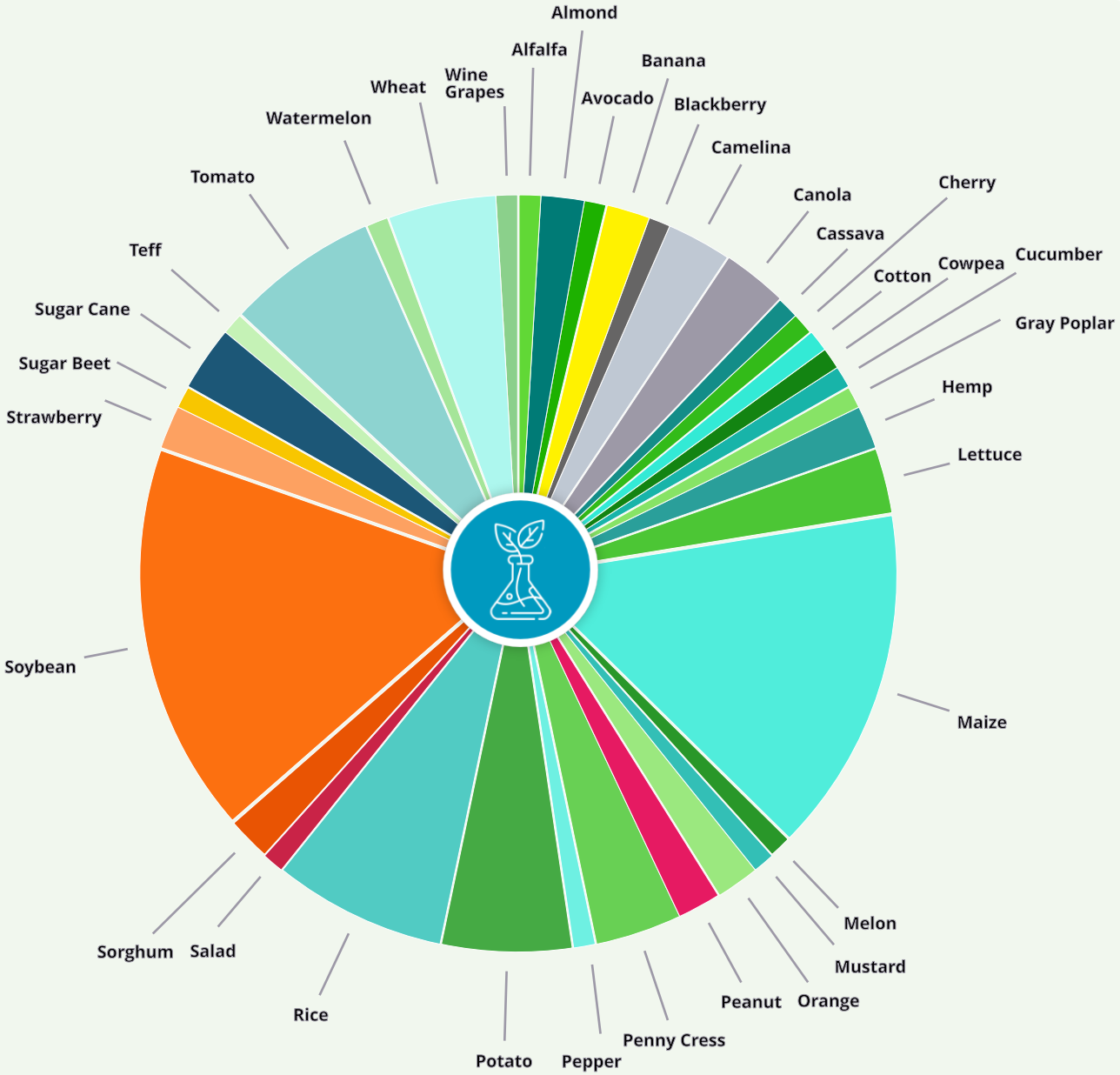
Our articles on legislation in the EU and the USA and on "Global Hotspots 2026" show that **the deregulation of New GMOs is triggered by the assumption that "'no foreign DNA" has been incorporated into a plant and/or that the genetic change could have occurred through conventional breeding.** If this is the case, safety assessments and traceability and labelling requirements have largely been abolished. We note, however, that China requires traceability and labelling for all registered GMOs, old or new, for all domestic food.

This worldwide convergence toward treating non-transgenic gene editing as conventional breeding is led by major agricultural exporters (US, Brazil, Argentina, Australia) and is now joined by England and the EU. China, running the world's largest publicly funded agricultural biotechnology program, is moving in the same direction to reduce its import dependence on the US, Brazil and Argentina.

In the USA, some improvements in (old) GMOs transparency and labelling have been made. A 2025 court ruling on the National Bioengineered Food Disclosure Standard expands the range of products that must be labelled to highly refined foods in which modified genetic material is undetectable. In addition, the court found that electronic disclosure methods such as QR codes and text message options were problematic, with those regulations remanded to the USDA for revision.

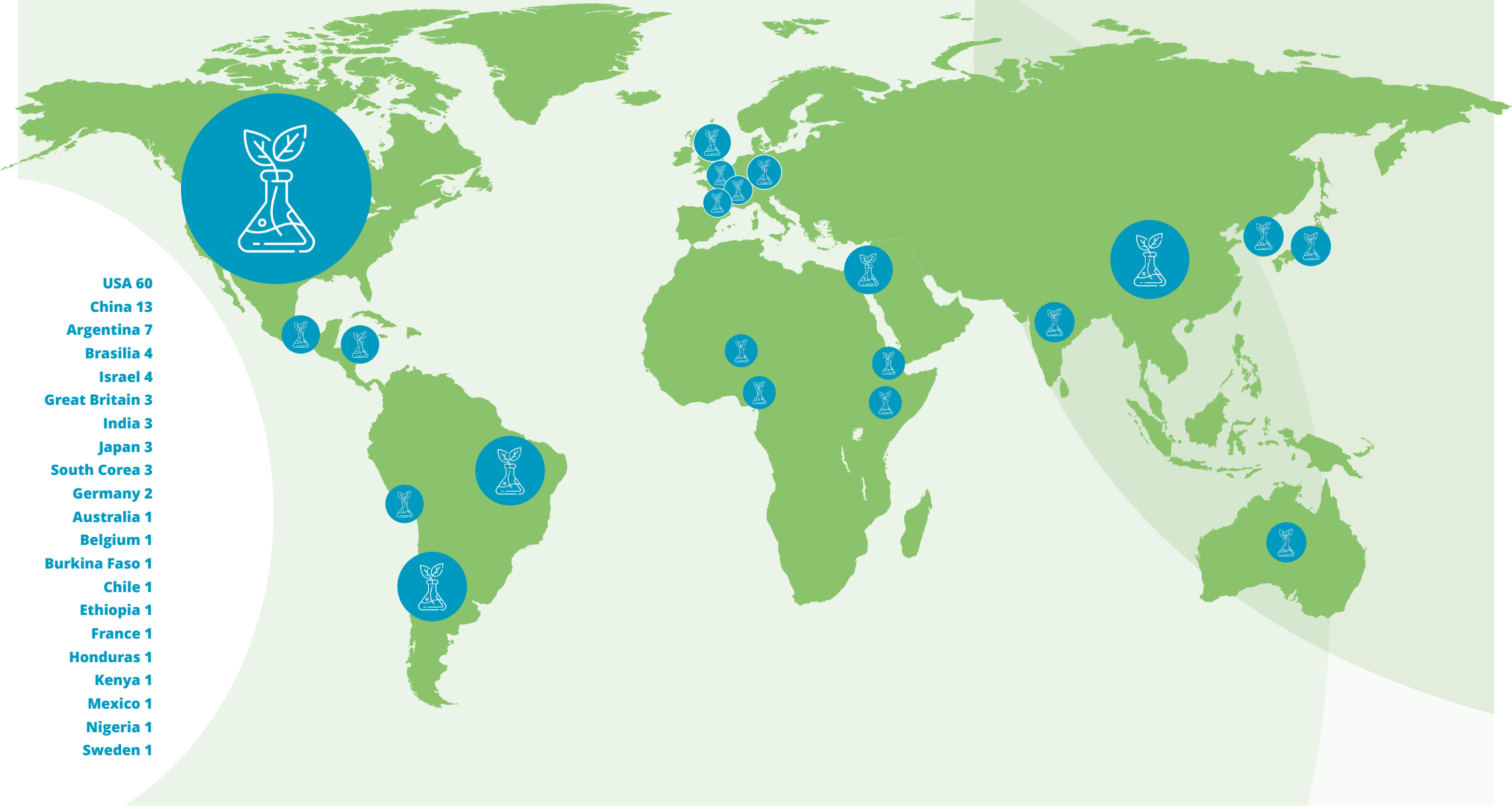
At the end of 2024, the US District Court for the Northern District of California vacated the **SECURE rule** which exempted many gene-edited plants from pre-market review and permitting. The vacatur restored the pre-2020 regulations but more than 200 crops already reviewed and approved under the SECURE rule retain their status and do not need to be re-evaluated. Nevertheless, from now on a case-by-case review process is back in effect for any new crops in development.

GRAPHIC 1 New GMOs in Development



- Alfalfa
- Almond
- Avocado
- Banana
- Blackberry
- Camelina
- Canola
- Cassava
- Cherry
- Cotton
- Cowpea
- Cucumber
- Gray Poplar
- Hemp
- Lettuce
- Maize
- Melon
- Mustard
- Orange
- Peanut
- Penny Cress
- Pepper
- Potato
- Rice
- Salad
- Sorghum
- Soybean
- Strawberry
- Sugar Beet
- Sugar Cane
- Teff
- Tomato
- Watermelon
- Wheat
- Wine Grapes

GRAPHIC 2 New GMOs in Development: Where the Developers are based



- USA 60
- China 13
- Argentina 7
- Brasilia 4
- Israel 4
- Great Britain 3
- India 3
- Japan 3
- South Corea 3
- Germany 2
- Australia 1
- Belgium 1
- Burkina Faso 1
- Chile 1
- Ethiopia 1
- France 1
- Honduras 1
- Kenya 1
- Mexico 1
- Nigeria 1
- Sweden 1

Future EU regulation on New GMOs

Political procedure and application of the new legislation

In December 2025, EU Parliament, Council (for Agriculture and Fisheries) and EU Commission reached an agreement on the New GMOs (NGTs, New Genomic Techniques) deregulation file (Reference 1). The provisional New GMOs legislation was approved by the Council (21 April) and must be endorsed by Parliament (probably in June) which is considered likely. The new legislation will then enter into force 20 days after it has been published in the EU Official Journal. All economic operators will have two years to adapt and implement it.

New GMOs get their own regulation

The "Regulation of the European Parliament and of the Council on plants obtained by certain new genomic techniques and their food and feed and amending Regulation (EU) 2017/625" constitutes lex specialis with regard to the EU's GMO legislation Directive 2001/18/EC (lex generalis) (Reference 2). This means that NGT plants have their own regulation but remain defined as GM plants.

Two categories of New GMOs

The future regulation divides New GMOs into two categories: Category 1 NGT plants are those with modifications that could also arise naturally or through conventional breeding or are considered equivalent to conventional breeding, respectively. Category 2 NGT plants are all other NGT plants or those that don't meet the equivalence criteria, respectively. Category 1 NGT plants are exempt from the requirements of EU GMO legislation, category 2 NGT plants will continue to have to comply with its stricter rules.

Category 1 NGT plants are defined as crops that contain up to 20 genetic modifications (an arbitrary and very high threshold). Possible options include deleting entire gene segments, inserting related genes ("cisgenesis") or inserting up to 20 nucleotides – at up to 20 locations in the DNA. Many scientists criticize the proposed 20x20 rule for its methodological and conceptual weaknesses. The assumption that all mutations can be produced 'naturally' with enough effort and time contradicts biological and statistical findings and is therefore not scientifically derivable.

NGT1 plants will be subject to a verification procedure - a Member State has to confirm that the criteria for NGT1 classification have been met - but not to any risk assessment. Only NGT plant and reproductive material must be labelled as 'cat 1 NGT', followed by the identification number of the NGT plant(s) it has been derived from. This information will be included in variety catalogues and in any database and marketing documentation where the plant reproductive material is offered. NGT 1 plants 'should' also be listed in a publicly accessible database, including information on the technique or techniques used to obtain the trait or traits. In future, only farmers and breeders will be informed whether a New GMO is an NGT1 plant, but feed and food business operators and consumers will not be.

Regarding detection methods, an analytical method 'should' be provided by the notifier or applicant, but this requirement is extremely weak that presumably nothing will come of it. For category 1 NGTs neither traceability nor coexistence measures are applicable (measures between agriculture and food production with and without New GMOs in order to restrict the predictable permanent contamination of Non-GMO production with New GMOs) and opt out (the right of Member States to prohibit or restrict cultivation on their territory) is also not possible. The vast majority are considered to be NGT1 plants.

Category 2 NGT plants will remain subject to EU GMO regulation, including an authorisation procedure with a risk assessment "light" and requirements for traceability and labelling as well as detection methods. In addition to the GMO label, category 2 plants may carry a second label listing all the traits contained in the plant. This is intended to enable companies to highlight the sustainability of their GM crops. Plants containing traits like tolerance to herbicides and the production of a known insecticidal substance automatically fall under category 2. Member states are allowed to opt out of cultivating category 2 NGT plants on their territory, and they may adopt measures to avoid their unintended presence in other food and feed chains (i.e. coexistence measures).

Imports

Imports from third countries must meet the requirements of the EU's New GMO regulation.

Deregulation impact for the food sector and consumers

The new legislation, as agreed by Commission, Council and Parliament, will deregulate the vast majority of NGT crops to the detriment of food business operators and consumers. It abolishes the vital "precautionary principle" for NGT1 plants, under which GMOs have been subject to comprehensive risk assessment, both to protect consumers and the environment. By deleting traceability and labelling, category 1 NGTs (or the vast majority of New GMOs in development pipelines) remain invisible to consumers and to the food sector. They will not be indicated on packaging and do not have to face the judgement of the market.

From a marketing and transparency perspective, even if products under the new legislation are not required to disclose the presence of New GMOs, they can still state what they do not contain. This is precisely where national EU Non-GMO labelling standards plays a vital role. Originally developed to close a gap in EU GMO labelling law - where GMO feed must be labelled but animal products derived from it, such as milk, meat and eggs, do not - Non-GMO labelling could increasingly expand into new market segments, from animal-derived products to plant-based foods.

Regulatory Update USA

After sixteen months of a new administration in the United States, several developments have occurred with respect to the regulation of GMOs. On October 31, 2025, the US Court of Appeals for the Ninth Circuit issued a major ruling on the **National Bioengineered Food Disclosure Standard** of 2016. The court struck down the US Department of Agriculture (USDA) exemption for highly refined foods in which modified genetic material is undetectable, finding that such foods must be subject to disclosure requirements. This ruling effectively expands the range of products that must be labelled. Separately, the court found that electronic disclosure methods such as QR codes and text message options were problematic, with those regulations remanded to the USDA for revision. However, the court upheld the Federal Government's use of the term "bioengineered food" as the approved disclosure language on labels, in place of more familiar terms like "GMO" or "genetically engineered," despite limited public recognition of the newer terminology. In summary, genetically modified ingredients and their derivatives must econtinue to be labelled on final products, however the USDA is currently revising the rules to comply with the Court order, with no clear timeline for final revisions. (References: 1, 2, 3)

In regard to new genomic techniques, a court decision has reversed a 2020 effort to ease the regulation of genetically engineered organisms. On December 2, 2024, the US District Court for the Northern District of California vacated the 2020 SECURE rule (formally known as the Sustainable, Ecological, Consistent, Uniform, Responsible, Efficient rule). This rule had exempted many genetically engineered plants from pre-market review and permitting, including plants developed using gene-editing tools like CRISPR that introduce no foreign genetic material. The pre-2020 regulations are now restored, reverting to the regulatory framework that has been in operation since 1987. Importantly, the vacatur was prospective rather than retroactive; new crops already reviewed and approved under the **SECURE rule** retain their status and do not need to be re-evaluated. In the context of the 2025 court ruling on mandatory labelling vis à vis detectability (see above) it is possible that New GMOs would require labelling; however, the USDA is expected to continue to exempt non-transgenics from any such regulation. (References: 4, 5)

While the current administration has generally continued a deregulatory stance on biotechnology, US Department of Health and Human Services (HHS) Secretary Robert F. Kennedy Jr. has moved to significantly tighten one area of food regulation. On March 10, 2025, Secretary Kennedy directed the Food and Drug Administration (FDA, which falls under the purview of HHS) to pursue rulemaking to eliminate the "self-affirmed" **Generally Recognized as Safe (GRAS)** pathway. Under the current system, food manufacturers can introduce new ingredients - including genetically modified ingredients and derivatives - into the food supply without notifying the FDA at all, simply by internally determining that the ingredient is safe. Kennedy has argued that this allows novel ingredients with unknown safety profiles to enter the food supply without any government review or public transparency. A proposed rule to close this loophole was sent to the White House for review in December 2025. (References: 6, 7)

Globally, we continue to see numerous efforts to distinguish transgenic GMOs from non-transgenics in a bid to accelerate the acceptance and adoption of crops produced through new genomic techniques like gene-editing via CRISPR. Biotech developers have successfully influenced many governments to either weaken existing regulations or to create barriers to typical regulatory regimes like registration, approval, testing, and systems-based (Life Cycle Assessment) risk assessment. Importantly, many of these new frameworks do not require labelling or traceability of New GMOs. However, deregulation has not moved forward unopposed. Advocates for seed sovereignty, biodiversity, and corporate accountability have some notable successes.

The past twelve months have produced a cluster of landmark decisions across multiple continents, and a clear counter-movement has emerged, rooted substantially in indigenous and smallholder farmer communities, pushing back against the dominant deregulatory trend.

The Deregulatory Wave

The argument for deregulating non-transgenic GMOs rests on the claim that an “NGT-1” (EU term for a New GMO) crop is indistinguishable from one that could have arisen through conventional breeding or natural mutation. Regulators in the US, Canada, Brazil, Argentina, Japan, Australia, and now England have all accepted this logic to varying degrees. As noted previously, the EU's landmark December 2025 deal represents the most geopolitically significant development in this direction.

What is new in the past year is the speed and breadth of convergence. For example, **England's Genetic Technology (Precision Breeding) Regulations 2025 came into force on November 13, 2025,** making it fully operational within England, while the devolved states of Wales, Scotland, and Northern Ireland have opted out of the rules, and retained the previous regulations. Under the new rules in England, New GMOs will not be required to be traceable or labelled. **Peru, long committed to blocking the cultivation of all GMOs**, published its first-ever regulatory guidance on classifying gene-edited organisms in early 2026. (References: 1, 2)

But these efforts have generated significant opposition, particularly from the organic and Non-GMO sector, consumer rights groups, and peasant and smallholder activists. The core objection for organic and consumer rights advocates is often the failure to require labelling of New GMOs in consumer food products. The organic movement has warned that without robust traceability and labelling it will be extremely difficult to exclude New GMOs from certified organic and Non-GMO supply chains. Organic and Non-GMO are sectors whose global value - upward of US$250 billion - depends on supply chain transparency that new rules frequently do not mandate. A second major fault line is patents and corporate control of food systems, an objection often raised by peasant and small holder groups. Critics warn that intellectual property claims will disadvantage small breeders and farmers and accelerate market concentration and commodification in the seed sector. Globally, many surveys show that citizens remain worried about GMOs. This suggests that deregulation reflects political and corporate priorities rather than public consensus. (References: 1, 2, 3)

Canada Deregulates, and Faces Significant Dissent

Canada's approach to gene editing is arguably the most permissive of any major agricultural nation. In 2022, Health Canada confirmed that foods from plants that have no foreign DNA are, largely, not subject to pre-market safety assessments. Health Canada's position is that, if there is no foreign DNA, gene-edited plant products should be regulated like

all other products of plant breeding, by focusing on their final characteristics and not the method of development. (Reference: 1)

What makes Canada's position distinctive is the absence of any mandatory notification or registration requirement. Companies can release gene-edited organisms into the food system and environment without any government risk assessment and without notifying the government or the public. As of April 2026, Canadian groups are watching for the possible market introduction of gene-edited products such as **a gene-edited mustard green from Bayer, and gene-edited strawberries from Simplot**. There are no mandatory labelling and no government product registry that the public can consult.

The opposition has been substantial. **More than 150 farmers in Ontario and British Columbia, many supplying local and organic markets, signed a declaration in late 2025 opposing the sale of gene-edited vegetable seeds in Canada**, citing contamination risk to heritage seeds and organic certification. The Canadian Biotechnology Action Network (CBAN), the National Farmers Union, and organic producer groups have been running sustained campaigns for mandatory registration and labelling. CBAN has argued explicitly that the use of genetic engineering "conflicts with the worldview of many Indigenous peoples and many people in faith communities who were never informed or consulted," and that the Canadian government has never assessed the ethical, social, or economic impacts of GMOs on these communities. (References: 1, 2)

The seed patent question is also live in Canada. **In February 2025, the industry association Seeds Canada set up a "Seed Tip Line" to report suspicious seed activity - a development that farmer groups, including Indigenous farmers, read as an escalation of IP enforcement against the traditional practice of seed saving**. The National Farmers Union has explicitly framed seed saving as a commons issue: "farmers, and particularly Indigenous farmers, created our seed heritage over millennia," and has opposed changes to Plant Breeders' Rights regulations that would strengthen corporate Intellectual Property rights at the expense of that tradition. (References: 1, 2, 3)

Canada's situation illustrates a tension that runs through every deregulating country: the framework that should enable rapid innovation also removes the transparency that allows farmers, consumers, and Indigenous communities to make informed choices about what they grow, buy, and eat. Canada has resolved this tension decisively in favour of industry self-regulation, making it the clearest test case globally for what a maximally deregulated gene editing environment looks like in practice.

China Accelerates Domestic GMO Production

In 2024-2025, **China approved 5 gene-edited crop varieties that include soybeans, rice, corn and wheat** (see table “In Development”), with the stated aim of boosting high-yielding crops and reducing import dependence. **(Old) GM corn planting expanded to roughly 3.3 million hectares in 2025 - about 7% of total acreage - nearly five times the 2024 figure**. China currently imports close to 100 million tons of soybeans and corn annually, the vast majority of it old GMOs, mostly for animal feed. The push to develop and grow domestically bred GMO equivalents is explicitly framed as reducing dependence on the US, Brazil, and Argentina. **Chinese patent regulations clarifying the definition of plant varieties for gene-edited crops came into effect in January 2026**, adding further regulatory infrastructure to what is already the world's largest publicly funded agricultural biotechnology program. China currently requires the traceability and labelling of all GMOs regardless of technology. (References: 1, 2)

The Fault Line Between Argentina and Peru Shows Movement on New GMOs

Argentina remains the global benchmark for New GMOs deregulation. Its 2015 product-based framework asks only whether foreign DNA is present in the final crop and requires its National Agricultural Biotechnology Commission to respond to developers within 60 days. That framework has now approved its first CRISPR-edited wheat: **in September 2025, the Commission cleared high-fiber wheat lines developed by Neocrop Technologies as Non-GMO, the first CRISPR wheat in Argentina** (see table "In Development"). **Field trials are expected to begin this year**. Gene-edited crops will not require any labelling or traceability. Brazil has previously followed a similar path, with CRISPR-edited soybeans and sugar cane developed by its National Public Agricultural Research Service (see table "In Development"). (References: 1, 2, 3)

Peru has historically stood at the opposite end of the spectrum, with a universal GMO moratorium running until 2035. But the situation may be shifting. **In early 2026, Peru's Ministry of the Environment published new guidelines establishing a technical process for determining whether gene-edited organisms fall within the moratorium's scope**, providing the first regulatory clarity for research institutions working with CRISPR. (Reference: 1)

India Fast Tracks New GMOs

India's strategy is an example of selective adoption. **India's Supreme Court Directive of March 2025 calling for a national GM policy has not yet produced one**. Transgenic crops including Bt brinjal and GM mustard remain politically blocked despite regulatory approval. **But gene-edited rice is moving forward: Two varieties of rice developed by the public research body ICAR using CRISPR, were released on May 4, 2025, making India the first country in the world to develop genome-edited rice** varieties and clear them for market access (see table "In Development"). Both were developed from varieties already cultivated and trusted by farmers with modifications allegedly improving yield, salinity tolerance, and water efficiency. Indian authorities will not require traceability or labelling for any non-transgenic, gene-edited crops. (References: 1, 2)

Australia's Quiet but Consequential Shift

Australia's **September 2025 update to its official definition of genetically modified food** is less dramatic than the EU's but may prove more consequential in practice. The new outcome-based definition, based on whether "novel DNA" is present, means that crops developed using the most common CRISPR techniques will not be classified as GMOs, will not require pre-market approval from the joint Australia–New Zealand Food Standards Authority, and will not require GMO labelling. This is a significant expansion of what can reach the market without a formal safety assessment. Australia's organic and Non-GMO sector has warned that it places the cost of maintaining GMO-free certification on producers and exporters, in a country where "clean and green" is a central value proposition for agricultural exports to Asia. (References: 1, 2)

Mexico Draws a Red Line on Maize

In March 2025, Mexico took the most dramatic unilateral step of any country this year: **a constitutional amendment banning the cultivation of genetically modified maize, enshrined in Articles 4 and 27 of the Constitution, came into force on March 18, 2025**.

The constitutional language is broad enough to cover gene editing applied to corn, including CRISPR - a deliberate choice, according to academic specialists involved in drafting the amendment, who argued that biodiversity protection requires covering

all techniques that alter the genome beyond natural reproduction. Mexico recognizes 64 corn landraces and more than 22,000 native varieties cultivated by millions of Indigenous and smallholder farmers. For these communities, who are the custodians of the crop's extraordinary genetic diversity, the amendment is understood as a cultural and ecological protection as much as an agricultural policy. Mexico also requires labelling and traceability for all GMOs in its food network, including those that are created using CRISPR.

These developments place Mexico in direct and constitutionally entrenched tension with the United States, its largest agricultural trading partner and the world's largest producer of GM corn. The import of GM corn for animal feed continues - ambiguity about future restrictions on this remains a live trade issue - but Mexico has made clear it regards the Indigenous genetic heritage of maize as non-negotiable. Nevertheless, an international non-profit based in Mexico, the research group International Maize and Wheat Improvement Center, is working with USA-based Corteva to develop a gene-edited maize, apparently for African markets (see table "In Development.) (References: 1, 2)

Kenya Makes a Case for Peasants and Smallholders

Kenya has become the world's most active site of legal resistance to GMO deregulation, and uniquely, federal courts there sided with smallholder and indigenous farmers twice in 2025.

In March 2025, the Court of Appeal issued an order halting all government action to implement a 2022 Cabinet decision lifting Kenya's GMO ban. The case was brought by the Kenya Peasants League, the Biodiversity and Biosafety Association of Kenya, and 18 allied civil society groups, arguing that the government had violated constitutional requirements for public participation and had failed to consult the farming communities most affected. The crops at issue are primarily GM maize and cotton. These are staples produced by Kenya's smallholder farmers, who account for more than 70% of agricultural production. **Judgment on the full appeal was expected in April 2026, but at present has not been announced**.

In November 2025 Kenya's High Court declared key provisions of the Seed and Plant Varieties Act unconstitutional, effectively decriminalising the centuries-old practice of saving, sharing, and exchanging Indigenous seeds. The previous law had exposed farmers to imprisonment of up to two years and fines of one million shillings for selling or exchanging unregistered seeds - provisions that critics said handed control of Kenya's food system to multinational seed companies. UN human rights experts welcomed the ruling, calling it a milestone for peasants' rights and a model for other jurisdictions, noting that "seed sharing is not a crime, but a fundamental element of peasants' identity, resilience and contribution to national food systems."

Together, the two rulings represent the most substantive legal articulation anywhere in the world of the argument that Indigenous and smallholder farming communities have constitutional rights that limit what governments can do in the name of agricultural modernization. The Kenya Peasants League explicitly says its opposition is not anti-science: "we are not against science but want choices that protect our livelihoods." The case will be closely watched across Africa, where similar tensions between government-led GMO adoption and smallholder seed sovereignty are active in Nigeria, Ghana, and Ethiopia.

However, our research (see table "In Development") shows that Kenyatta University is licensed to carry out agro-biotech research, and researchers there

have developed a gene-edited sorghum that is in field trials, despite these rulings and public resistance. (References 1, 2, 3, 4)

The Global Pattern

The broad pattern is clear: There is a worldwide convergence toward treating non-transgenic gene editing as conventional breeding, led by major agricultural exporters (US, Brazil, Argentina, Australia) and now joined by the EU and England. China appears to be moving the same direction, primarily for strategic reasons. Japan has had a gene-edited food product legally available to consumers since 2021 - a CRISPR-edited tomato sold online by a startup (see table "In Cultivation") - but uptake has been limited, public awareness remains low, and no gene-edited plant has reached mainstream retail shelves.

The resistance to this trend is real, organised, and increasingly legally sophisticated. It is concentrated in countries with strong Indigenous and smallholder farming traditions such as Kenya, Mexico, and Peru. Civil society movements across Europe also frame the issue as one of corporate control, seed sovereignty, and consumer rights rather than food safety. The two Kenyan court rulings of 2025, halting GMO adoption and decriminalizing seed sharing, represent the high-water mark of this counter-movement and are being studied as potential templates in other African countries, in India, and within international bodies including the Convention on Biological Diversity.

Status of GM Maize, Soybeans and Rapeseed in selected countries

COUNTRY	SOYBEANS	MAIZE	RAPESEED	LABELLING AND TRACEABILITY
Argentina, Canada, Paraguay	✓ Full GMO cultivation	✓ Full GMO cultivation	✓ Full GMO cultivation	No labelling or traceability required.
Brazil, USA	✓ Full GMO cultivation	✓ Full GMO cultivation	✓ Full GMO cultivation	Mandatory labelling of transgenic GMOs. New GMOs exempt.
Ukraine	✗✗ - Not approved for cultivation - Import not allowed	✗✗ - Not approved for cultivation - Import not allowed	✗✗ - Not approved for cultivation - Import not allowed	Mandatory labelling of transgenic GMOs. However, expected to align with EU on New GMOs. NOTE: Illegal GM soy and rapeseed widely reported.
Russia, Moldova, Serbia, Norway, UK	✗✓ - Not approved for cultivation - Import allowed	✗✓ - Not approved for cultivation - Import allowed	✗✓ - Not approved for cultivation - Import allowed	Mandatory labelling of all transgenic GMOs. New GMOs exempted from labelling and traceability in the UK. Norway and Moldova expected to align with EU on New GMOs (no labelling or traceability required).
China	✓✓ - Rapidly expanding cultivation - Import allowed	✓✓ - Rapidly expanding cultivation - Import allowed	!! - Approved but limited cultivation - Limited import	All GMOs, including non-transgenic, require traceability and labelling.
India	✗! - Not approved for cultivation - Limited import	✗! - Not approved for cultivation - Limited import	✗! - Not approved for cultivation - Limited import	Mandatory labelling of GMOs. New GMOs exempt.
South Africa	✓✓ - Approved for cultivation - Import allowed	✓✓ - Approved for cultivation - Import allowed	!! - Limited cultivation - Limited import	All GMOs, including non-transgenic, require traceability and labelling.

Status of GM Maize, Soybeans and Rapeseed in selected countries

COUNTRY	SOYBEANS	MAIZE	RAPESEED	LABELLING AND TRACEABILITY
Australia	✗ ✓ - Not approved for cultivation - Import allowed	✗ ✓ - Not approved for cultivation - Import allowed	✓ ✓ - Approved for cultivation - Import allowed	Requires labelling of transgenic GMOs. Exempts New GMOs.
Nigeria	✓ ✓ - Approved for cultivation - Import allowed	✓ ✓ - Approved for cultivation - Import allowed	No clear legal framework	Requires labelling of transgenic GMOs. Exempts New GMOs.
Ghana	! ✓ - Cultivation in trials - Import allowed	! ✓ - Cultivation in trials - Import allowed	No clear legal framework	Requires labelling and traceability of all GMOs, including New GMOs.
Zambia	✗ ! ✗ - Not approved for cultivation - Trials allowed - Import not allowed	✗ ! ✗ - Not approved for cultivation - Trials allowed - Import not allowed	No clear legal framework	Requires labelling and traceability of all GMOs, including New GMOs. Exemption for New GMOs in consideration.

References: Russia 1, 2, Norway 3, Serbia 4, Moldova 5, UK 6, China 7, India 8, South Africa, 9, 10, Australia 11, 12, Nigeria 13, Ghana 14, Zambia 15, Ukraine 16, 17 Argentina 18, Paraguay 19

Detection Methods: Project Report DARWIN

‘Genetic fingerprint’: A new detection method for New GMOs

How can a New GMO — or a product made using New Genomic Techniques (NGTs) — be detected? This is the focus of DARWIN, an EU-funded research project running from 2024 to 2027. DARWIN’s first results, published in August 2025, represent a significant step forward in the development of reliable NGT detection methods. Reference

One of DARWIN’s project partners, the Belgian government research institute Sciensano, developed a new approach to create a unique ‘genetic fingerprint’ to identify a New GMO or NGT. A group led by Nancy Roosens, used methods for whole-genome sequencing, artificial intelligence and publicly available genome databases as well as a technique called high-throughput sequencing, which can examine many DNA sites simultaneously to search specifically for crucial DNA segments.

‘Genetic fingerprint’ unambiguously identifies a specific NGT

A ‘genetic fingerprint’ is a distinct combination of single nucleotide variations (SNVs) and allows a specific NGT to be unambiguously identified. As proof of concept, the Belgian researchers chose a CRISPR/Cas-9-edited rice line with a single altered DNA base pair. Comparing this specific rice genome to all others in a public database (>3000) using bio-informatic tools allowed the scientists to choose a combination of SNVs – including the altered base pair – that was unique to this single rice line. The SNVs were detected in the rice line’s genetic pattern using a high-throughput sequencing approach.

Method depends on detailed genome information

In order to detect these small modifications, access to the information about the specific SNV obtained with CRISPR/Cas is essential, as well as precise and detailed sequence information on the genomic background and a large database of known rice cultivars and varieties.

Developers of New GMOs must provide information

In a policy brief from DARWIN, therefore, the researchers stress “the need for continued public investment in genomic databases and for legal requirements that ensure developers of GMOs disclose at least a minimum level of genetic information about their NGT lines to support effective detection and monitoring”.

Although the trilogue agreement (see article on EU regulation) requires notifiers or applicants of category 1 NGTs plants to provide detection methods, this is only set out in a recital – i.e. a statement of intent – and therefore rather weak. To be effective, this should have been included in an article which carries a very different level of legal force.

DARWIN’s Policy recommendations

Detection methods for NGT products are feasible – especially when developers of these GMOs provide the necessary genetic data, as required under the current EU legislation (Directive 2001/18/EC and Regulations 1829/2003 and 1830/2003). Continued compliance with these requirements will help enforcement laboratories adapt existing PCR-based protocols for NGT detection.

It is possible to develop unique ‘genetic fingerprints’ for specific NGT crops, enabling their unambiguous identification using targeted and/or untargeted detection methods. This approach strengthens traceability and supports regulatory oversight.

Reliable detection methods are essential to complement documentation-based traceability systems, ensuring transparency in the food chain and maintaining consumer trust. Achieving this will require sustained investment in research and infrastructure.

While the costs of implementing some of these new detection technologies on a per-sample basis will be high at this early stage, continued public and private investment is crucial to refine, validate, and scale up these methods, which will likely lead to breakthroughs in multiple areas of genomic and bioinformatic sciences. As with previous advances in sequencing technologies, costs are expected to decrease significantly over time – especially for the most promising and widely adopted approaches.

Mandating that developers of NGTs disclose a minimum level of genetic information would significantly reduce the cost and complexity of detection for enforcement authorities and food and feed operators. This would also accelerate the development of robust, science-based monitoring systems.

→ DARWIN website: darwin-ngt.eu

TABLE 1 New GMOs in Cultivation

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References	Further remarks
1 Black-berry	Compact growth	CRISPR	Pairwise	USA	COL	2025: The first commercial sale of edited blackberries in the world. In Colombia, working with a Production Partner and Retailers, the berries have been sold to consumers. Each clamshell includes a QR code that links consumers to information on blackberries and the technology behind them. Field trials in USA.	https://www.pairwise.com	
2 Maize	Tolerance to glufosinate herbicide and resistance to corn rootworm pests (DP915635)	Transgenic, CRISPR	Corteva	USA	USA, CAN (2022), EU (Import Food and Feed)	Must be labelled as GMO in the EU according to current EU genetic engineering legislation. Import approval (food and feed) in the EU (see reference).	https://eur-lex.europa.eu	
3 Maize	Tolerance to glufosinate herbicide and resistance to lepidopteran insect pests (DP910521)	Transgenic, CRISPR	Corteva	USA	USA, Canada (2022), Food and Feed (EU)	Must be labelled as GMO in the EU according to current EU genetic engineering legislation. Application for import authorization (food and feed) in EU. August 2024: Positive scientific opinion (EFSA) published (see reference).	https://www.efsa.europa.eu	

As of 22 April 2026

TABLE 1 New GMOs in Cultivation

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References	Further remarks
4 Tomato	Increased GABA-content	CRISPR	Sanatech Seed	Japan	Japan	Sanatech has expanded distribution in Japan and has completed all the regulatory paperwork to introduce its tomato in the Philippines. Sanatech is also looking to bring its edited tomato to the US. Sanatech Seed Co., Ltd. (now Sanatech Life Sciences Co., Ltd.)'s genome-edited high-GABA tomato has been confirmed by the Singapore Food Agency (SFA) to be exempt from the GMO pre-market approval process (the approval process required for the sale of genetically modified crops and genome-edited crops deemed equivalent to genetically modified crops). (Notification received on October 30, 2025).	https://www.sanatech-seed.com	Genome-edited GABA tomatoes have been reported as mini-tomatoes and medium-sized tomatoes (both claimed to be "high GABA"), but only mini-tomatoes (Sicilian Rouge High Gaba) are on the market. Sicilian Rouge High GABA is marketed as fruit/vegetables and as processed products in the form of puree and dried tomatoes. Their dried High GABA tomatoes have been on the market since April 2025. All of these products have been submitted as "food with functional claims" due to their high concentration of GABA, and are being marketed as health food products. However, foods bearing health claims are subject only to a notification system and are accepted as long as all documentation is complete. There is no independent review by a government agency or any other body. Genome-edited tomatoes are sold through the online store of the sales company and over-the-counter in some supermarkets in the Kanto/Tokyo region. The tomatoes were also sold in supermarkets in the Kyushu region, but sales have been discontinued due to opposition from civil society and other factors. The product has been confirmed to be approved in the Philippines, but sales there or in the US or any other countries have not been confirmed (Martin J. Frid, Consumers Union of Japan, by mail, 2 May 2025).

* For more information see chapter "Global Hotspots 2026".

As of 22 April 2026

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
1 Alfalfa	Improved nutrient composition, better digestibility for livestock	TALEN	CIBUS Inc. (Calyxt), S&W Seeds, Alfalfa Partners	USA	USA	2025: "Cibus has successfully completed the FDA's Plant Biotechnology Consultation Program for its altered lignin alfalfa trait, developed in partnership with S&W Seed Company. The FDA confirmed it has no further questions regarding the use of this gene-edited alfalfa in food or feed applications. S&W Seed Company plans to commercialize two initial variety offerings – a fall dormancy five variety and a fall dormancy seven variety – marking the first commercial gene-edited alfalfa varieties in the United States."	https://investor.cibus.com
2 Almond	Self-Pollination Compatibility	CRISPR	Verinomics Inc.	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited almond with self-pollination compatibility. Intended activity: Conduct greenhouse and field trials followed by propagation and commercial release."	https://www.aphis.usda.gov
3 Almond	Self-fertile	CRISPR	Ohalo Genetics Inc.	USA	USA	2025: "FruitionOne is the world's first self-fertile Nonpareil almond variety. This groundbreaking innovation allows almond growers to eliminate traditional pollenizer trees when planting Nonpareil almond orchards and is estimated to double mature orchard profitability. FruitionOne trial orchard plantings are underway. FruitionOne will be available for early orders in 2025 with first commercial deliveries beginning in 2027."	https://www.ohalo.com
4 Avocado	Non-browning	CRISPR	Green Venus	USA	No information	2023: "Using CRISPR editing, GreenVenus successfully produced multiple lines of avocados with enhanced resistance to browning by "knocking out" a key gene in the browning pathway, polyphenol oxidase (PPO). Several elite commercial varieties are in the developmental pipeline; some are currently under analysis." April 2026: Company website unavailable.	https://cdn.shopify.com
5 Banana	Non-browning	CRISPR	TROPIC Bioscience	GBR	PHL, COL, HND, USA, CAN	2025: "Our non-browning banana variety is now commercially available, and will be launching to consumers in the US and Canada in 2026. With regulatory approval granted in several growing regions, Tropic are well positioned to provide delicious varieties to markets around the world."	https://tropic.bio
6 Banana	Disease resistance	CRISPR	Elo Life Systems	USA	HND	2025:" Banana varieties with resistance to the deadly fungus Tropical race 4 (TR4) are currently being developed by Elo Life Sciences using gene editing technology. These gene-edited bananas are presently grown in greenhouses and are being tested with large TR4 inoculations to validate their editing strategy. Now, farms in Latin and Central America (e.g. Honduras) are involved in conducting field trials of these edited bananas."	https://www.frontiersin.org

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
7 Barley	Higher oil content	CRISPR	Rothamsted Research	GBR	GBR	2026: A notice of commercial cultivation for a plant obtained from new genetic engineering has been filed for the first time in Europe. Rothamsted Research filed the notice as it wants to grow its 'fat barley' in England. Genetic alterations in the genome of the barley are meant to increase the oil content in plant tissues. Resulting NGT plants are intended for use in feed for livestock, e.g. cattle and sheep, to increase animal production.	https://www.rothamsted.ac.uk
8 Blackberry	Seedless Blackberry	CRISPR	Pairwise	USA	HND (field trials)	2024: "Pairwise announced to advance these berries into the next phase of product development, including outdoor field trials. They work toward scaling up and making them available to the public in a few years. Further traits in progress: thornlessness, compact growth."	https://www.pairwise.com
9 Camelina	Increased oil content	CRISPR	Nufarm	USA	USA, ARG, CHL, CAN	For the only available information on this plant, see No. 10.	https://nuseed.com
10 Camelina	Increased Omega-3	CRISPR	Nufarm	USA	USA, CHL	2025: "Last July [2024], Nufarm announced a license agreement with Yield10 Bioscience Inc., which gave us significant rights to Yield 10's Omega-3 technology. Directly after, Nufarm agreed to immediately begin negotiating the purchase of substantially all of Yield10's assets, including ownership of Yield10's camelina assets in both the omega-3 sector and most assets in the bioenergy sector. Nufarm successfully acquired substantially these assets in January 2025."	https://nuseed.com
11 Camelina	Increased Omega-3	CRISPR	Yield10 Bioscience Inc., Rothamsted Research, Nufarm US Inc., BioMar Group	USA	USA	For the only available information on this plant, see No. 10.	https://nuseed.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
12 Canola	Disease resistance	Rapid Trait Development System™ or RTDS®	CIBUS Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited canola for disease resistance." "Cibus' Sclerotinia resistance trait in canola offers multiple modes of action to provide durable resistance and enable farmers to improve yields and lower input costs by reducing reliance on fungicides otherwise required for controlling the disease. Sclerotinia sclerotiorum (also referred to as white mold) is a fungal pathogen that causes significant disease (stem rot) in oilseed crops and most legumes, including soybean, reducing canola yields by 7-15% with yield losses per infected plant being as great as 50%. The Canola Council of Canada considers it one of the most economically significant canola disease in Canada."	https://investor.cibus.com
13 Canola	Herbicide resistance	Rapid Trait Development System™ or RTDS®	CIBUS Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited canola for herbicide resistance." "We have completed editing of the second generation of our herbicide resistance trait in canola (HT2) with greenhouse trait confirmation and initial field testing validation activities completed in 2025."	https://www.cibus.com
14 Canola	Resistance against Light leaf spot	Rapid Trait Development System™ or RTDS®	CIBUS Inc., University of Herfordshire, John Innes Centre and others	GBR	No information	2026: "At the heart of the project is a newly identified plant susceptibility gene. By switching off this gene using precision breeding, researchers have shown it is possible to reduce the ability of the light leaf spot pathogen to infect the crop, offering a more durable form of protection than traditional resistance genes that pathogens can quickly overcome. A consortium of leading UK and European oilseed rape breeders is involved in developing the disease-forecasting and testing material in elite commercial backgrounds. UK Agri-Tech Centre is overseeing project delivery and integration, supporting effective collaboration across partners and ensuring outputs remain focused on adoption, scalability and real-world impact."	https://www.herts.ac.uk
15 Cassava	Resistance against bacterial blight	CRISPR	National Root Crops Research Institute (NCRI), BMGF, National Science Foundation, Donald Danforth Center	NGA	Field trials	Cassava – edited for bacterial blight disease, undertaken by the National Root Crops Research Institute (NCRI) in Nigeria in partnership with the BMGF (funder) and National Science Foundation (Rock et al., 2023), as well as the Danforth Center. Current status: In field trials.	https://acbio.org.za
16 Cherry	Cherry without pit	CRISPR	Pairwise, Sun World International	USA	No information	2025: "In September we launched a joint venture with Sun World International, where together we're working to create the world's first pitless cherry. Traditionally, breeding something like this could take a century. We believe we can achieve it in a decade."	https://www.pairwise.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
17 Cotton	Herbicide tolerance	CRISPR	Bioheuris, Gensus	ARG, USA	BRA	"Cotton is the most important fiber crop in the world and its cultivation is one of the oldest. We are developing herbicides resistant varieties to combat weeds, which, in addition to reducing yield, contaminate cotton lint, reducing its quality."	https://bioheuris.com
18 Cowpea	Made suitable for mechanized harvesting	CRISPR	BetterSeeds LTD.	ISR	USA	2023: "BetterSeeds was set to plant their enhanced Cowpea seeds in the United States in the Spring of 2023, in order to test its potential for mass scale cultivation. BetterSeeds, Israel's largest and leading plant genome editing company developed EDGE (Efficient Delivery of gene Editing) technology which solves the biggest hurdle preventing the wide adoption of CRISPR technology for crop improvement, and YIELDMAX - a proprietary trait platform intended to adapt crops to sustain the challenges arising from climate change."	https://www.prnewswire.com
19 Cucumber	Improved and altered product quality	CRISPR	Pairwise	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited cucumber with improved and altered product quality. Four different traits (CBI-deleted). Pairwise wants to conduct field trials followed by commercial product development and release."	https://www.aphis.usda.gov
20 Gray poplar	Increased biomass accumulation	CRISPR	Living Carbon	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited gray poplar with increased biomass accumulation. Intended activity: Nursury production, field testing, and environmental release."	https://www.aphis.usda.gov
21 Hemp	Resistance against powdery mildew	CRISPR	University of Wisconsin	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited hemp with resistance against powdery mildew. Intended activity: field trials."	https://www.aphis.usda.gov
22 Hemp	Cannabioid free	CRISPR	University of Wisconsin	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited hemp which is cannaboid free. Intended activity: field trials."	https://www.aphis.usda.gov
23 Lettuce	Extended shelf-life, non-browning	CRISPR	Green Venus	USA	USA, CAN	2025: A limited number of seeds were sold in small packets for home gardeners in the US from the company's website in 2025. April 2026: Company website unavailable.	https://cban.ca

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
24 Lettuce	Increased biomass, faster maturation	CRISPR	Green Venus	USA	USA	2025: "APHIS confirmation of the regulatory status of lettuce with increased biomass and faster maturation. This novel lettuce variety has been modified to enhance biomass (fresh weight) by at least 10% at harvest. Also, the modified lettuce will reach its typical fresh weight one to two weeks sooner than conventional lettuce varieties without affecting its flowering time or other agronomic attributes. Green-Venus' modified enhanced biomass lettuce seed and plants will be moved interstate, released into the environment as part of field trials and ultimately commercialized." April 2026: Company website unavailable.	https://www.aphis.usda.gov
25 Lettuce	Reduced browning	CRISPR	Green Venus	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited lettuce with reduced browning." April 2026: Company website unavailable.	https://www.aphis.usda.gov
26 Maize	Increased Agronomic Performance and Improved Ruminant Digestibility	CRISPR	University of Wisconsin	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited maize with increased agronomic performance and improved ruminant digestibility. Intended activity: movement and release."	https://www.aphis.usda.gov
27 Maize	Genome Edited Maize for Relocation of QTLs to Co-Locate Traits of Interest	CRISPR	Pioneer Hi-Bred International Inc.	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited maize for Relocation of QTLs to Co-Locate Traits of Interest. Intended activity: Interstate movemnet and release."	https://www.aphis.usda.gov
28 Maize	High Yield	CRISPR	Origin Agritech Ltd.	CHN	CHN	2024: "The commercialization of Origin's gene-editing corn is expected to begin in 1-2 years."	https://originagritech.com
29 Maize	Resistance against Maize Lethal Necrosis Disease	CRISPR	Corteva, CIMMYT	USA, MEX	Various African countries (no more information available)	2025: "Phase II Launch of Genome Editing for Resilient Crops: CIMMYT convened scientists, regulators, private sector leaders, and development partners to launch Phase II of the Genome Editing for MLN Resistance Project. The workshop marked progress in tackling Maize Lethal Necrosis, improving groundnut safety, and enhancing pearl millet shelf life through precision breeding. A field visit to Naivasha's MLN screening facility showcased promising results in MLN-resistant maize."	https://www.facebook.com/CIMMYT

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
30 Maize	Physiological trait improvement, High Yield	CRISPR	Weimi Biotechnology (Hainan) Co., Ltd.	CHN	CHN	2025: "Gene editing (in-house CRISPR) CasY7-WM01. Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2025) No. 296."	The data was provided by ProTerra, as they have contacts in China. The ProTerra Foundation is a not-for-profit organization that advances and promotes sustainability at all levels of the feed and food production system. Independent third-party assessments are central to the ProTerra Foundation which brings together stakeholders from all levels of the supply chain. ProTerra certification and verification ensure that high-quality supplies of raw materials, food, and feed, that are independently audited and produced with improved sustainability, are available in the market.
31 Maize	Physiological trait improvement	CRISPR	Weimi Biotechnology (Hainan) Co., Ltd.	CHN	CHN	2025: "Gene editing (in-house CRISPR) CasY7-WM01. Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2025) No. 295."	The data was provided by ProTerra.
32 Maize	Waxy Corn	CRISPR	Corteva	USA	USA, BRA, ARG, CHN, JPN	The Canadian Biotechnology Action Network concluded (2021) that this product is not in commercial production and not designed for immediate release (see reference). This conclusion is confirmed by research from the Consumers Union of Japan (CUJ) (2025). According to the notification to the Consumer Affairs Agency of Japan, the product has not yet been placed on the market. Corteva stated, that the waxy corn has been grown in the US for research and pre-commercial trials, but was not distributed or marketed (2023). (Martin J. Frid, Consumers Union of Japan, by mail, 2 May 2025).	https://cban.ca
33 Maize	High Yield	CRISPR	Weimi Biotechnology (Hainan) Co., Ltd., Huazhong Agricultural University	CHN	CHN	2024: Mutated ZmNL4 gene to improve corn yield traits (KN-NL4-2).	https://apps.fas.usda.gov
34 Maize	Dwarf maize	CRISPR	Inari Agriculture Inc.	USA	USA	2023: Field trials in Belgium.	https://ec.europa.eu
35 Maize	Dwarf maize	CRISPR	Corteva	USA	No information	2024: "According to the company: To be expected in 2027."	https://investors.corteva.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
36 Maize	Production of anthocyanin in response to pathogen infection	CRISPR	INSIGNIUM AGTech, Beck's	USA	USA	Field trials in the US (at least for two years). 2025: "Insignum AgTech says the technology got a boost recently when Purdue Strategic Ventures, affiliated with Purdue University, made a follow-on-investment during the company's latest round of fundraising. The company is working to bring this first product to market by partnering with cooperating seed companies. Already looking ahead, Insignum AgTech plans to expand into canola and soybeans using similar technology."	https://www.farmprogress.com
37 Maize	Multiple disease resistance	CRISPR	Corteva	USA	No information	2025: "According to the company: To be expected in 2028."	https://investors.corteva.com
38 Maize	Insect resistance	CRISPR	Inari Agriculture Inc.	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited maize with insect resistance. Intended activity: import, interstae movement and release."	https://www.aphis.usda.gov
39 Maize	Improved yield and altered plant architecture	CRISPR	Inari Agriculture Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited maize with increased yield and altered plant architecture. Inari is developing maize lines with increased yield and modified plant architecture that have been edited using a Cas enzyme system. Planned activities include, but would not be limited to seed and grain production that would require import, interstate movement, and unconfined environmental release."	https://www.aphis.usda.gov
40 Maize	Improved root architecture and ear morphology	CRISPR	BAYER Crop Science	GER	USA	2025: "APHIS confirmation of the regulatory status of genome edited maize with improved root architecture and ear morphology. Intended activity: For movement, import and release."	https://www.aphis.usda.gov
41 Maize	Maize with pericentric chromosomal inversion	CRISPR	Pioneer Hi-Bred International Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome-edited maize with a chromosomal inversion for conventional breeding. Intended activity: Interstate movement and release."	https://www.aphis.usda.gov
42 Melon	Long shelf-life	CRISPR	National Agricultural Research Organization (NARO), University of Tsukuba, Sanatech Life Sciences	JPN	No information	2026: "Genome editing technology was is used to disrupt the ethylene-producing gene CmACO1. Because the melon no longer produces ethylene, a plant hormone that ripens fruit, the melons take longer to ripen. In the final stage before shipping, the melon is ripened by exposure to a high concentration of ethylene, as is currently done for bananas. This genome-edited melon uses the "in planta particle bombardment (iPB) method," a genome-editing technology jointly developed by NARO and Kaneka Co., Ltd. The iPB method is a method in which genes are inserted into the shoot apical meristem tissue of plants using fine gold particles. This method is characterized by its ability to edit the genome of plants as they are, without the need for cell culture. It will thus become possible to edit the genome of many crops that were previously difficult to culture. (JA Shimbun Online Edition 2026/1/20)."	https://www5d.biglobe.ne.jp

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
43 Mustard	Low-pungent, pest and disease resistant	CRISPR	Delhi University's Centre for Genetic Manipulation of Crop Plants (CGMCP), Indian Council of Agricultural Research	IND	No information	2025: "The mustard was undergoing the second year of trials in 16 locations across North and Central India in the current 2025-26 crop season. If the results are good, this variety – a canola-quality low-pungent mustard that is simultaneously resistant to major fungal pathogens and pests – would be ready for release by around August 2026."	https://indianexpress.com
44 Orange	HLB-resistant	CRISPR	University of Florida	USA	USA	2026: "Three APHIS confirmations of the regulatory status of genome edited orange with resistance to HLB disease."	https://www.aphis.usda.gov
45 Orange	HLB-resistant	CRISPR	Soilcea	USA	USA	2025: "With support from the United States Department of Agriculture (USDA) and the National Science Foundation's Small Business Innovation Research Programs, Soilcea has developed a Carrizo rootstock variety – CarriCea T1 – that is resistant to Huanglongbing (HLB)." "We are starting to exponentially scale our trees to have more numbers, and so really where we're at now is field trial scale, but by the fall of next year or the spring of 2027 we're going to have full-scale production where we can start putting hundreds of thousands of trees in the ground each year," Lagos shares. "It's definitely a sequential process. We're scaling up production while growers are getting experience with these trees, so hopefully then in two years they're going to be really ready to replant the industry."	https://centralfloridaagnews.com
46 Peanut	Improved Quality	CRISPR	IngateyGen LLC	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited peanut with improved quality. Intended activity: Movement and release."	https://www.aphis.usda.gov
47 Peanut	Reduced 2S Albumin Proteins	CRISPR	BetterSeeds LTD.	ISR	USA	2025: "APHIS confirmation of the regulatory status of genome edited peanut with reduced 2S Albumin Proteins. BetterSeeds intends to move genome edited lines freely and release them into the environment, eventually as commercial products."	https://www.aphis.usda.gov
48 Pennycress (Thlaspi arvense)	Increased oil content	CRISPR	CoverCress Inc., Bayer Crop Science, Bunge, Chevron	USA	USA	Since 2024: Farm Adoption Program allows producers to test CoverCress in their operations with no economic risk. Cover Cress provides the seed free of charge, which can then be treated as a typical cover crop for a few years until a decision is made to move forward with it as a cash crop. 2025: CoverCress is still in its early stages of commerzialisation. It currently operates on 6,000 acres – double that of last season. It targets planting on 10,000 acres this fall.	https://cdn.prod.website-files.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
49 Pennycress (Thlaspi arvense)	Reduced levels of erucic acid, fiber and glucosinolates in its seeds, improved resistance to seed shatter	CRISPR	CoverCress Inc., Bayer Crop Science, Bunge, Chevron	USA	USA	2025: CoverCress is still in its early stages of commercialisation. It currently operates on 6,000 acres – double that of last season. It targets planting on 10,000 acres this fall.	https://www.agtechnavigator.com
50 Pennycress (Thlaspi arvense)	Herbicide resistance, altered seed and pod characteristics, earlier maturation, increased yield	CRISPR	CoverCress Inc., Bayer Crop Science, Bunge, Chevron	USA	USA	2025: "Multiple APHIS confirmations of the regulatory status of genome edited traits in pennycress. CCI plans to conduct field trials followed by commercial product development and release."	https://www.agtechnavigator.com/
51 Pennycress (Thlaspi arvense)	Different traits (Altered Root System Architecture, Altered Root Biomass)	CRISPR	Cquesta Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of different traits in pennycress. The company wants to conduct field trials with the pennycress." "The company just completed a $6 million funding round. It sees a lot of potential in the large acreage planted to canola in Canada. The first product the company will bring to market in two to three years is enhanced roots in cover crops. Then it plans soybeans and canola as its first large acreage crops in three to five years. Other crops like corn will follow in five to seven years."	https://www.producer.com
52 Pepper	Drought tolerance	CRISPR	ToolGen	KOR	USA	2025: "ToolGene is currently conducting field trials on their CRISPR-developed drought-tolerant bell pepper, which is estimated to be commercialised in the next 3 to 5 years." 2025: "APHIS confirmation of the regulatory status of genome-edited pepper with drought tolerance."	https://www.plantetp.eu
53 Potato	Higher tuber set	CRISPR	Simplot Plant Sciences	USA	No information	Simplot had stated (2022) that it could enter the Canadian market in fresh and processed food as early as 2024 but it is not confirmed to be in commercial production or on the market.	There is no indication that it is on the market nor commercially grown in Canada. (Lucy Sharratt, Canadian Biotechnology Action Network, by mail, 2 May 2025).
54 Potato	Reduced content of glycoalkaloids (including solanine) and resistance to black spotting ("non-browning")	CRISPR	Simplot Plant Sciences	USA	CAN	Simplot stated (2024) that it could enter the Canadian market in fresh and processed food as early as 2025 but has not confirmed release.	There is no indication that it is on the market nor commercially grown in Canada. (Lucy Sharratt, Canadian Biotechnology Action Network, by mail, 2 May 2025).
55 Potato	Non-browning	CRISPR	Instituto Nacional de Tecnología Agropecuaria (INTA)	ARG	ARG	2023: Field trials (at least for two years).	https://www.argentina.gob.ar

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
56 Potato	Seed Production, High Yield	CRISPR	Ohalo Genetics Inc.	USA	No information	2025: "Rather than replant tubers from prior harvests, farmers can directly sow true seed and benefit from varieties with unprecedented agronomic performance with Ohalo's Boosted Potato. Ohalo's approach is to supply both seeds and finished products, with commercial trials underway and a broad rollout expected in the next 1–2 years."	https://www.vantrumpreport.com
57 Potato	Improved and altered Product Quality	CRISPR	Pairwise	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited potato with improved and altered product quality. Pairwise wants to conduct field trials followed by commercial product development and release."	https://www.aphis.usda.gov
58 Potato	Starch potato with disease resistance	CRISPR	Project Oppotunity	SWE	No information	2025: "Project Oppotunity informs that they have has successfully conducted the first field trials in Sweden and Denmark with starch potatoes that have been improved via CRISPR-CAS to increase resistance to late blight infection. In parallel, seed multiplication took place to harvest more and larger seed potatoes, enabling evaluation of the effects of these improved late blight resistance events in dedicated field trials in 2026."	https://www.oppotunity.eu
59 Rice	Drought tolerance	CRISPR	La Semilla Co. Ltd.	KOR	USA	2026: "APHIS confirmation of the regulatory status of genome edited rice with drought tolerance. Intended acitivity: import, interstate movement, field trials."	https://www.aphis.usda.gov
60 Rice	Improved rice quality traits	CRISPR	Biotechnology Company Limited, Jiangsu Academy of Agricultural Sciences, Beijing Qi-Biodesign Suzhou Qi-Biodesign Biotechnology Company Limited	CHN	CHN	2024: "Mutation of Wx gene for quality trait improvement in rice 118-9-15. Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2024) No. 297."	https://apps.fas.usda.gov
61 Rice	Herbicide tolerance (HT1)	Rapid Trait Development System™ or RTDS®	CIBUS Inc., Loveland Products, Interoc	USA	ECU	2025: "These traits (HT1, HT3) are progressing on schedule toward targeted initial commercial launch in Latin America, beginning in 2027, followed by expansion to the United States in 2028, and then Asia closer to 2030." 2026: "Under the terms of the non-binding Letter of Intent (LOI), Cibus and Interoc intend to negotiate in good faith toward a definitive licensing and marketing agreement pursuant to which commercial sales would be initiated in Ecuador and Colombia in 2027. Following this anticipated initial launch, the companies are planning a phased expansion into Peru, Central America and the Caribbean, including Panama, Bolivia, Nicaragua, the Dominican Republic, Belize, and Costa Rica. The companies share a strategic objective of achieving robust market share in the regions where the HT trait is commercialized targeting trait adoption on an accelerated basis."	https://www.investing.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
62 Rice	Herbicide tolerance (HT3)	Rapid Trait Development System™ or RTDS®	CIBUS Inc., Albaugh LLC, RTDC Corporation Limited, Loveland Products, Interoc	USA	ECU	2025: "These traits (HT1, HT3) are progressing on schedule toward targeted initial commercial launch in Latin America, beginning in 2027, followed by expansion to the United States in 2028, and then Asia closer to 2030." 2026: "Under the terms of the non-binding Letter of Intent (LOI), Cibus and Interoc intend to negotiate in good faith toward a definitive licensing and marketing agreement pursuant to which commercial sales would be initiated in Ecuador and Colombia in 2027. Following this anticipated initial launch, the companies are planning a phased expansion into Peru, Central America and the Caribbean, including Panama, Bolivia, Nicaragua, the Dominican Republic, Belize, and Costa Rica. The companies share a strategic objective of achieving robust market share in the regions where the HT trait is commercialized targeting trait adoption on an accelerated basis."	https://www.investing.com
63 Rice	Herbicide tolerance	CRISPR	Bioheuris	ARG, USA	ARG, USA	"The technology is already being tested in rice and sorghum fields in Brazil and the United States. While not yet in the commercial phase, they have passed technical and regulatory challenges. The company obtained approval from CONABIA (National Advisory Commission for Agricultural Biotechnology) in Argentina and similar approvals in countries like the United States, Brazil, Chile, and Colombia. BioHeuris projects that the rice and sorghum varieties will be available in the market by 2026 or 2027." 2025: "APHIS confirmation of the regulatory status of genome edited rice with herbicide resistance. The company has planned activities including, but not limited to, seed and grain production, interstate movement, importation, and unconfined environmental release."	https://news.agropages.com
64 Rice	High-yielding (Kamala, DRR Dhan 100)	CRISPR	Indian Institute of Rice Research (ICAR-IIRR), Hyderabad	IND	No information	2025: "The variety named as DRR Dhan 100 Kamala, was developed from a popular high yielding green rice Samba Mahsuri. According to the developer the new variety can be harvested 15-20 days ahead of its original. The yield is almost 25% more, which is about eight tonnes more per hectare. The new variety delivers significantly higher yields than the original variety. The variety was formally announced in New Delhi on Sunday (May 4, 2025) by Union Agriculture Minister Shivraj Singh Chouhan."	https://www.thehindu.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
65 Rice	Salt-tolerant (Pusa DST Rice 1)	CRISPR	Indian Agricultural Research Institute (IARI), Delhi	IND	No information	2025: "The variety Pusa DST Rice 1 is from Maruteru 1010 (MTU1010), which is widely used by farmers across the country. According to the developer, the variety named as Pusa DST Rice 1 is a 'salinity tension tolerant' crop. When cultivated under areas that have national average of salinity, the new variety produced 9.66% additional yield than MTU1010. Similarly, in alkaline conditions, the new variety gave 14.66% more yield than its original and under 'salinity tension' conditions, the yield of the new variety was 30.36%. The variety was formally announced in New Delhi on Sunday (May 4, 2025) by Union Agriculture Minister Shivraj Singh Chouhan."	https://www.thehindu.com
66 Rice	Resistance against bacterial blight	CRISPR	Institut de l'Environnement et de Recherches Agricoles	BFA	Field trials	Approval was given for field testing in 2024.	https://acbio.org.za
67 Salad (Mustard) Greens	Reduced bitter compounds	CRISPR	Pairwise, Bayer Crop Science	USA	USA, CAN	In 2024, Bayer was getting ready to launch gene-edited mustard greens, engineered using CRISPR, for use in packaged salad mixes. However, in May 2025, Bayer told CBAN that it had "no specific target date for commercialization in Canada." May 2025: "At this time, they [gene-edited salad greens] are not currently being commercially grown or sold in Canada or the United States, and we have no specific target date for commercialization in Canada." (CBAN No GMO Salad Report, June 2025)	https://cban.ca
68 Sorghum	Herbicide tolerance	CRISPR	Bioheuris	ARG, USA	USA	2025: "AATF (African Agricultural Technology Foundation) and BioHeuris have announced a two-year partnership agreement aimed at raising productivity through genome-edited crops such as sorghum through research and development, regulatory approval, and uptake in Africa. The agreement will enable the two organizations to conduct trials, commercialise herbicide-tolerant sorghum products, and introduce weed-control traits to sorghum varieties cultivated in Africa. In addition, the partnership agreement will identify and develop other genome-edited crops targeting traits of importance to farmers in Africa." 2025: "APHIS confirmation of regulatory status of genome edited sorghum with herbicide resistance. The company has planned activities including, but not limited to, seed and grain production, interstate movement, importation, and unconfined environmental release."	https://www.aatf-africa.org

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
69 Sorghum	Resistance against Striga	CRISPR	Kenyatta University	KEN	Field trials	Striga-resistant sorghum, undertaken by Kenyatta University. Exempted from biosafety regulations, approved for contained research in 2023, and field trials took place at the Kenya Agricultural and Livestock Research Organisation (KALRO) in western Kenya in 2024 (AfriCentre, 2024b). In field trials.	https://acbio.org.za
70 Soybean	Improved digestibility	CRISPR	Agricultural Research Corporation (EMBRAPA), Universidade Estadual de Londrina	BRA	BRA	2025: "Researchers from the State University of Londrina (Universidade Estadual de Londrina) and partners in Brazil used CRISPR-Cas9 gene editing to inactivate the Le1 gene in soybean to improve grain digestibility for animal feed. The study sought to reduce lectin activity by targeting this gene in the soybean cultivar BRS 537 to limit nutrient absorption in monogastric animals. The study showed that the edited lines maintained key agronomic traits, showing no differences in yield or thousand-seed weight compared with the wild-type plants. The findings of the study highlight that inactivating the Le1 gene can produce soybeans with improved digestibility for monogastric animals without affecting productivity."	https://www.isaaa.org
71 Soybean	Reduced lecithin	CRISPR	Agricultural Research Corporation (EMBRAPA)	BRA	BRA		http://ctnbio.mctic.gov.br
72 Soybean	Reduced raffinose and stachyose sugar	CRISPR	GDM	ARG	BRA	2022: One of the approvals was for a low-sugar soy designed to help animal digestion that could be launched in 2024/2025.	https://www.reuters.com
73 Soybean	High-oleic	CRISPR	Shandong BellaGen Biotechnology Co.	CHN	CHN	2023: "China's first safety certificate for plant gene editing has been issued by the Ministry of Agriculture and Rural Affairs (MOA) recently, approving that gene editing in China has entered the fast lane for the sector's development and industrialization, which will further guarantee food security." "High oleic acid soybean by Shandong BellaGen Biotechnology Co received the gene editing safety certificate, valid for five years until April 2028, read a document issued by the MOA." "BellaGen is the first company in China to initiate industrial-scale plant gene editing."	https://www.globaltimes.cn
74 Soybean	Physiological trait improvement	CRISPR	Shandong Shunfeng Biotechnology Co., Ltd.	CHN	CHN	2023: "Gene-edited soybean for physiological trait improvement 25T593-1. Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2023) No. 350."	The data was provided by ProTerra.

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
75 Soybean	Quality trait improvement	CRISPR	Shandong Shunfeng Biotechnology Co., Ltd.	CHN	CHN	2023: "Mutation of gmfad2-1a and gmfad2-1b genes for quality trait improvement in soybean AE15-18-1. Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2023) No. 114."	The data was provided by ProTerra.
76 Soybean	High yield	CRISPR	Suzhou Qihe Biotechnology Co., Ltd. (Qi Biodesign)	CHN	CHN	2024: "Mutated GmLn gene to improve soybean yield traits (QH64112). Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2024) No. 294."	https://apps.fas.usda.gov
77 Soybean	Quality trait improvement	CRISPR	Suzhou Qihe Biotechnology Co., Ltd. (Qi Biodesign)	CHN	CHN	2023: "Quality trait improved soybean P16. Agricultural GMO Safety Certificate No. Nong Ji An Zheng Zi (2023) No. 351."	The data was provided by ProTerra.
78 Soybean	Improved physiological traits	CRISPR	China Seed Group Co., Ltd	CHN	CHN	2024: "Mutated GmE1 and GmE1Lb genes to improve soybeans physiological traits (E001SYFT)."	https://apps.fas.usda.gov
79 Soybean	Improved protein content	CRISPR	Amfora	USA	USA	2024: "The U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) has granted Amfora, Inc. an exemption for its gene-edited, ultra-high protein soybeans. Amfora's gene-edited soybeans are not subject to the regulations in 7 CFR Part 340 and can be marketed without undergoing further review by the USDA."*	https://www.isaaa.org
80 Soybean	High yield	CRISPR	Inari Agriculture Inc.	USA	No information	2025: "Closest to commercialisation are our first-generation high-yielding soybeans. Our customers will bulk up products for commercialisation soon, and in the meantime, their farmers can see our edited plants this summer at demo plots across the US."	https://www.agtechnavigator.com
81 Soybean	Drought tolerance	CRISPR	GDM	ARG	No information	2025: "GDM, a leading seed company in Argentina, is developing a gene-edited soybean variety that maintains growth under water stress by disabling a gene responsible for the plant's drought-response inhibition. The resulting variety is expected to show improved productivity in dry conditions, such as those experienced during 'veranicos' – short droughts with high temperatures – in southern Brazil. Commercial launch is planned for the 2027/2028 harvest, with early demand anticipated in water-stressed regions like Rio Grande do Sul."	https://www.plantetp.eu
82 Soybean	Drought tolerance	CRISPR	La Semilla Co. Ltd.	KOR	USA	2025: "APHIS confirmation of the regulatory status of genome edited soybean with drought tolerance. Intended activities for these soybean mutant plants within the United States include the importation, interstate movement, and environmental release (field trials)."	https://www.aphis.usda.gov

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
83 Soybean	Improved yield	CRISPR	The Traits Company	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited soybean with improved yield." "Launched in April 2022 with a $25 million investment from GDM, a global leader in crop genetics – The Traits Company has rapidly advanced innovation in soybean trait development. Powered by this transformative investment and unparalleled access to GDM's elite soybean germplasm, the company has made groundbreaking strides in trait discovery. Encouraged by its early successes, The Traits Company recently expanded its research and development capabilities significantly. This includes the addition of a 25,000-square-foot high-tech research facility, a 5,000-square-foot greenhouse, and collaborations with multiple field-testing centers. Building on its foundational focus on soybeans, the company's crop portfolio now includes major row crops such as corn, wheat, and sunflower."	https://www.gdmseeds.com
84 Soybean	Increased yield, modified plant architecture	CRISPR	Inari Agriculture Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited soybean for increased yield and modified plant architecture. Planned activities include import, interstate movement, and unconfined environmental release."	https://www.aphis.usda.gov
85 Soybean	Herbicide resistance	CRISPR	Inari Agriculture Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited soybean with herbicide resistance. Planned activities include, but would not be limited to seed and grain production that would require import, interstate movement, and unconfined environmental release."	https://www.aphis.usda.gov
86 Soybean	Reduced raffinose content	CRISPR	GDM	ARG	USA	2025: "APHIS confirmation of the regulatory status of genome edited soybean with reduced raffinose content. GDM wants to conduct field trials to evaluate the efficacy of genetic modification and subsequent commercial introduction."	https://www.aphis.usda.gov
87 Soybean	Improved architecture	CRISPR	BAYER Crop Science	GER	USA	2025: "APHIS confirmation of the regulatory status of genome edited soybean with improved architecture. Intended activity: Movement and release."	https://www.aphis.usda.gov
88 Strawberry	Remontant strawberry	CRISPR	Simplot Plant Sciences	USA	CAN	Simplot stated (2024) that it could enter the Canadian market in fresh and processed food as early as 2025 but has not confirmed release (May 2025).	There is no indication that it is on the market nor commercially grown in Canada. (Lucy Sharratt, Canadian Biotechnology Action Network, by mail, 2 May 2025).

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
89 Strawberry	Seed Production	CRISPR	Ohalo Genetics Inc.	USA	No information	2025: "Ohalo has partnered with industry leaders to form the Ohalo Strawberry Consortium, a groundbreaking collaboration to develop consumer-preferred, more flavorful strawberries and bring them to market as true seed. Ohalo has introduced a novel proprietary hybrid breeding system that eliminates the need for vegetative propagation by producing uniform strawberry seed. For the first time ever, truly uniform seed can be planted to quickly germinate field-ready strawberry seedlings."	https://www.ohalo.com
90 Sugar beet	Herbicide resistance	CRISPR	United Beet Seeds (UBS)	BEL	USA	2025: "APHIS confirmation of the regulatory status of genome edited sugar beet with herbicide resistance. The activity planned by UBS include, but are not limited to, importation, interstate movement and unconfined release into the environment to evaluate the efficacy of introduced mutations for herbicide tolerance in field trials, general yield performance and ultimately, sales and commercial distribution." European Company, United Beet Seeds (UBS) is a joint venture, launched in September 2024, between Groupe Florimond Desprez and DLF Seeds A/S and is specializing in all aspects of sugar beet seed research, production, processing and commercialization.	https://www.aphis.usda.gov
91 Sugar cane	Delayed or no flowering	CRISPR	University of Florida	USA	USA	2026: "APHIS confirmation of the regulatory status of genome edited suger cane with delayed or no flowering. Intended activity: commercial release, field trials."	https://www.aphis.usda.gov
92 Sugar cane	Improved digestibility (Cana flex I)	CRISPR	Agricultural Research Corporation (EMBRAPA)	BRA	BRA		https://www.embrapa.br
93 Sugar cane	Increased sucrose content (Cana flex II)	CRISPR	Agricultural Research Corporation (EMBRAPA)	BRA	BRA		https://www.embrapa.br
94 Teff	Edited to resist lodging	CRISPR	Donald Danforth Plant Science Center, Ethiopian Institute of Agricultural Research (EIAR), Corteva Agriscience	ETH	Awaiting approval for field trials	In 2024, the United States Department of Agriculture (USDA) cleared the genome-edited teff as not subject to biotechnology regulation under its SECURE Rule (Danforth Center, 2023), enabling multi-year field trials to begin in the US. The BMGF awards a US$4.9 million grant to the Donald Danforth Plant Science Center and the EIAR to refine gene-edited teff varieties in greenhouses and diverse field sites, and to train Ethiopian scientists in transformation and editing techniques (FertilizerDaily, 2024). In 2025, Ethiopian scientists received advanced training in the US on gene editing, teff transformation, and trait evaluation to support knowledge transfer (Danforth Center, 2025). Current status: Awaiting approval for field trials.	https://acbio.org.za

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
95 Tomato	Disease resistance	CRISPR	Meiogenix SAS	USA	USA	2025: "APHIS confirmation of the regulatory status of genome edited disease resistant tomato. Planned activities include interstate movement and release into the environment for R&D trials and ultimately for breeding programs and commercial cultivation."	https://www.aphis.usda.gov
96 Tomato	Improved water use efficiency	CRISPR	BetterSeeds LTD.	ISR	USA	2025: "APHIS confirmation of the regulatory status of genome edited tomato with improved water use efficiency."	https://www.aphis.usda.gov
97 Tomato	Enhanced Fruit Nutritional Content	CRISPR	GeneNeer Ltd.	ISR	USA	2025: "APHIS confirmation of the regulatory status of genome edited tomato for enhanced fruit nutritional content. The company wants to conduct field trials in the US and proceed with product commercialization."	https://www.aphis.usda.gov
98 Tomato	Altered Fruit Quality	CRISPR	KAGOME Co. Ltd.	JPN	USA	2025: "APHIS confirmation of the regulatory status of genome edited tomato with altered fruit quality. The modified tomato will be released into the environment, moved across state lines." 2026: "Two APHIS confirmations of the regulatory status of genome edited tomato with altered fruit quality. The modified tomato will be released into the environment, moved across state lines."	https://www.aphis.usda.gov
99 Tomato	Dwarf tomato	CRISPR	Phytoform Labs Ltd.	GBR	USA	2025: "APHIS confirmation of the regulatory status of genome edited tomato with decreased plant stature. The modified tomato will be imported, released into the environment, moved interstate and ultimately sold/ distributed commercially."	https://www.aphis.usda.gov
100 Tomato	Improved Heat Tolerance	CRISPR	Plantik Bioscience	FRA	USA	2025: "APHIS confirmation of the regulatory status of genome edited tomato with improved heat tolerance. The proposed activities involve importing seeds from the designated tomato lines for field trials in the USA. These trials are intended to evaluate the performance of heat-tolerant tomato varieties, and the resulting data will guide the future availability of the trait for introgression into breeding programs, with potential licensing and eventual commercialization."	https://www.aphis.usda.gov

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
101 Tomato	Increased sugar content	CRISPR	Grand Green Co.	JPN	JPN	2025: "Grand Green, a Nagoya-based company specializing in crop breeding, registered "GG-T1" tomato, which has increased sugar content through genome editing, as a food product. This brings the total number of genome-edited foods registered in Japan to 10. In addition to developing genome-edited crops in-house, the company also provides genome editing technology to seed distributors and food companies through collaborative research. For GG-T1, the company apparently deleted the function of the inhibitor gene (INVINH1) of the enzyme "invertase," which catalyzes the reaction that hydrolyzes sucrose into fructose and glucose to provide sugar to the fruit, in a medium-sized cultivar developed in-house. According to the published materials, the CRISPR/Cas9 system was introduced using a particle gun, causing a 28-base deletion. It has been confirmed that genome editing does not result in the creation of new allergens or toxic substances."	https://window-to-japan.eu
102 Watermelon	Natural sweetener	CRISPR	Elo Life Systems	USA	No information	2025: "Elo Life Sciences begins field trials to produce monk fruit molecule in watermelons with a goal to launch a new high intensity sweetener juice and powder in 2026."	https://elolife.com
103 Wheat	Powdery mildew resistance	CRISPR	Suzhou Qihe Biotechnology Co., Ltd. (Qi Biodesign), Chinese Academy of Sciences	CHN	CHN	2024: "China has approved the safety of gene-edited wheat for the first time as Beijing cautiously moves forward with commercial growing of genetically modified food crops."	https://www.reuters.com
104 Wheat	Herbicide tolerance	CRISPR	Suzhou Qihe Biotechnology Co., Ltd. (Qi Biodesign), Institute of Genetics and Developmental Biology, Chinese Academy of Sciences	CHN	CHN	2024: "Mutated TaALS gene herbicide-tolerant wheat TaALS-4."	https://apps.fas.usda.gov
105 Wheat	High Yield	CRISPR	Inari Agriculture Inc., InterGrain	USA, AUS	No information	2024: "Australian seed breeder InterGrain earlier this year imported several thousand wheat seeds created by U.S. agritech company Inari, including hundreds of new genetic variations. These seeds are now growing in a testing greenhouse in southeast Queensland. Seeds from those plants will be used to grow more plants, producing enough seeds to plant at more than 45 trial sites across the country in the 2025 growing season."	https://www.reuters.com

TABLE 2 New GMOs in Development

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
106 Wheat	High fiber	CRISPR	Neocrop Technologies	CHL	CHL, ARG	2025: "Chilean startup Neocrop Technologies has used the new CRISPR/Cas genetic engineering technique to develop wheat with fiber in white flour. According to the company's website, the Chilean regulatory authority SAG and the Argentine regulatory authority Conabia have decided that this wheat is not subject to genetic engineering legislation in their countries and may be cultivated and marketed without risk assessment. This is the first time that CRISPR wheat has been approved in the Americas. Neocrop plans to begin initial field trials this fall."	https://neocroptech.com
107 Wheat	Improved Yield and Modified Plant Architecture	CRISPR	Inari Agriculture Inc.	USA	USA	2025: "APHIS confirmation of the regulatory status of genome editied wheat with improved yield and modified plant architecture. Planned activities include import, interstate movement, and unconfined environmental release."	https://www.aphis.usda.gov
108 Wine grapes	Non-browning	CRISPR	Green Venus	USA	USA	2025: "APHIS confirmation of the regulatory status of GreenVenus' genome edited wine grapes with reduced PPO. Green Venus intends to move these GE grapes across state borders to assess field performance, release to the environment via open field trials and ultimately commercialize the grapes for broad cultivation in the United States." April 2026: Company website unavailable.	https://www.aphis.usda.gov

* For more information see chapter "Global Hotspots 2026".

Table 2: Remarks are sometimes company statements. "Cleared for market access" does not automatically mean cultivation. Company announcements about future cultivation do not mean that these plants will be cultivated/reach the market. This could be information spread to acquire money from investors. Despite intensive research and thorough examination of accessible data, the table makes no claim to completeness.

We recommend keeping a close eye on the plants marked in orange, as they may soon be cultivated.

As of 22 April 2026

TABLE 3 New GMOs withdrawn from the Market

Crop	Trait	Technique	Developer	Country (of Developer)	Cleared for market access*	Remarks	References
1 Canola	Herbicide tolerance	Rapid Trait Development System™ or RTDS® that integrates crop specific cell biology platforms with a series of gene editing technologies	Cibus Inc.	USA	USA, Canada in 2014	Cibus stated in 2020, that the SU canola varieties on the market in North America are "not gene-edited". They disappeared from the market in 2022.	https://www.greenpeace.org
2 Soybean	High-oleic	TALEN	Calyxt	USA	USA	The oil extracted from the soybeans was sold in the USA under the brand name "Calyno" from 2019 to 2021.	https://non-gmoreport.com

* For more information see chapter "Global Hot Spots 2026".

As of 22 April 2026

Poor Performance: First two New GMOs on the Market withdrawn

The first two New GMOs on the market, introduced as a scientific breakthrough, have since been withdrawn by their developers. The reason: Both, the herbicide tolerant SU canola by the US firm Cibus and the high oleic acid "Calyno" soybean by the US company Calyxt, didn't convince farmers who complained about poor harvests.

Since 2024, Cibus has been under investigation by a whole series of US law firms for deceiving investors. This follows a research report for investors that argued they had been duped by company claims for its "over-hyped" gene-editing technology. Calyxt, economically weakened, was taken over by Cibus in 2023.

→ www.gmwatch.org/en/106-news/latest-news/20434

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Editors

The **European Non-GMO Industry Association (ENGA)** is the voice of the Non-GMO food and feed sector at the EU level. ENGA, founded in 2020, secures and supports the expansion of Non-GMO production and advocates for the strict regulation of old and New GMOs in order to keep untested and unlabelled GMOs from entering the EU food and feed chains.

The Non-GMO Project, a US non-profit organization, was founded in 2007, with the aim to build and preserve the Non-GMO food supply for consumers. It offers certification for GMO avoidance. In the United States, the Non-GMO Project has verified more than 66,000 products representing more than $45 billion in annual sales, making it the fastest-growing label in the U.S. natural products industry and the most trusted Non-GMO label among consumers. The Non-GMO Project is operating in a market, where New GMOs already are in use. It excludes New GMOs in its verified products and does regular horizon scanning on which New GMOs are already on the market.

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