

US Approves GMO Wheat Grown with Neurotoxic Herbicide

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- › The U.S. Department of Agriculture (USDA) recently approved the cultivation of genetically modified (GM) wheat, raising concerns about its long-term effects on health and the environment
- › HB4, the world's first genetically modified wheat, was developed by Argentine company Bioceres. It's engineered for both drought tolerance and resistance to the herbicide glufosinate ammonium
- › Glufosinate ammonium has been banned in several countries, including the European Union. It's classified as a neurotoxin and has been linked to developmental and reproductive health issues
- › The approval of GM wheat prioritizes corporate interests over public health and environmental protection. Its initial approval in Argentina has raised concerns about conflicts of interest and lack of independent oversight
- › To protect your health, prioritize non-GMO, organic foods in your diet, and be aware of common GMO ingredients hiding in many foods. Resources are available below to help you find reputable organic and regenerative farmers for chemical-free produce

I've long warned about the dangers genetically modified organisms (GMOs) pose to human health and the environment, including the possibility of introducing new allergens into the food supply, decreasing biodiversity and increasing reliance on pesticides. Even more troubling is that the long-term health impacts of consuming GMOs remain largely unknown.

Despite these uncertainties, the biotechnology industry and Big Ag continue to push for widespread adoption of genetically modified (GM) crops, often downplaying their risks in favor of touted benefits. Now, a new threat looms over our food supply, as the U.S. Department of Agriculture (USDA) recently approved the first-ever cultivation of genetically modified wheat in the U.S.¹

While proponents described this decision as a "milestone" for the country's agriculture, it has sparked strong opposition from scientists, environmental organizations and consumer advocates, who argue that this move prioritizes corporate interests at the expense of public health and environmental protection.²

USDA Gives Green Light to Controversial GM Wheat

The world's first genetically modified wheat, HB4, was developed by the Argentine company Bioceres in collaboration with the French seed company Florimond Desprez. This strain is engineered to be drought-tolerant, and Bioceres claims it's the only genetically modified wheat variety in the world with such technology.³

HB4 wheat is marketed as a solution to food security challenges, especially in drought-prone regions, where it claims to increase yields and reduce production costs for farmers. However, its cultivation relies heavily on the herbicide glufosinate ammonium, for which it has been engineered for increased tolerance. This chemical has been banned in several countries, including those in the European Union, due to its known health and environmental effects.⁴

The United States, one of the largest wheat producers in the world,⁵ is the fourth country to permit the production of HB4 wheat, along with Brazil, Argentina and Paraguay.⁶ While the USDA has concluded that HB4 can be safely grown and bred in the U.S. without posing significant risks to agriculture or the environment,⁷ consumer advocacy groups have pointed out that these claims are unfounded.

According to a report by Sustainable Pulse,⁸ there are several compelling reasons to question the safety and efficacy of GM wheat. First, there is no publicly available

evidence demonstrating its safety for human health or the environment. The studies conducted by Bioceres are confidential, preventing independent scientists and the public from accessing or scrutinizing these findings.

Moreover, despite claims that HB4 wheat is drought-resistant, there are no independent studies to support this. In fact, Sustainable Pulse notes that available research indicates that this GM variety is less productive than conventional wheat, which means that its drawbacks could outweigh its purported benefits.

Argentina Has Become a Testing Ground for GM Wheat

While citizens in Argentina have the right to elect their leaders, they lack the ability to choose non-GMO food options because there is no labeling for genetically modified (GM) products. This allows a select group of individuals in influential positions within the government and scientific communities to make decisions that effectively force the entire population to consume GM products, leaving them with no alternative choices.

Since its approval in 2020, HB4 wheat has been widely cultivated across Argentina. Bioceres reported that by 2021, approximately 55,000 hectares of GM wheat had been harvested in the country.⁹ In the same year, the first shipment of flour made with GM wheat was exported to Brazil, the main export market for Argentinean wheat production.¹⁰

However, the process behind the approval and cultivation of GMOs in Argentina has been questionable. Sustainable Pulse's report¹¹ points out that Argentina's National Advisory Committee on Agricultural Biotechnology (CONABIA), which oversees GM approvals, is heavily influenced by the very corporations that produce GMOs.

This revolving door between government and corporate interests creates a conflict of interest, where those seeking approval are also involved in the decision-making process. Argentina's National Scientific and Technical Research Council (CONICET) has ties with Bioceres as well, with its senior researcher, Raquel Chan, being involved in the development of GM wheat.

The lack of independent oversight is further compounded by the Argentine government's reliance on confidential studies from these companies, with no independent research conducted to validate their findings. This has raised alarms in over a thousand scientists affiliated with CONICET and public universities, who have denounced the risks associated with GM wheat and its derivatives.

Widespread Opposition and Concerns Over GM Wheat Approval

There is a strong consensus against GM wheat among Argentinian farmers, indigenous groups and socio-environmental organizations.¹² The campaign "Con nuestro pan, no!" (which translates to "Not our bread!") emphasizes that GM wheat is not a solution to hunger but rather a means to enhance the profits of the agro-industrial sector.¹³

The coalition also points out that Argentina's experience with GM soy has yielded no tangible benefits for the public, questioning how GM wheat would be any different. Organizations across Latin America, Africa and Asia have also raised alarms about the dangers of GM wheat.¹⁴ Sustainable Pulse reported:¹⁵

"In a detailed 14-page document, social movements, peasants and indigenous people requested the intervention of United Nations (UN) special rapporteurs because of the risks to food, health and the environment posed by Bioceres' GMO.

They confirmed that there are no independent studies confirming its harmlessness, denounced the dangerous herbicide glufosinate ammonium and also pointed out that it is less productive than conventional wheat."

The small international nonprofit organization GRAIN has also voiced its opposition, condemning the irregular approval process for GM wheat in Argentina, Brazil and Paraguay, which, as stated, was based solely on studies provided by the manufacturer and confidential documentation.¹⁶

Health and Environmental Impacts of Glufosinate Ammonium

Glufosinate ammonium, the broad-spectrum herbicide used in the cultivation of HB4 wheat, works by inhibiting glutamine synthetase, an enzyme vital to plant growth.¹⁷ However, its impact is not limited to plants. The herbicide is classified as a neurotoxin, and long-term exposure has been linked to a variety of health issues in humans, including developmental, neurological and reproductive effects.¹⁸

Animal studies have shown that it interferes with the normal functioning of the nervous system¹⁹ and, in fetuses and infants exposed prenatally and perinatally, it has been linked to poor gut health,²⁰ behavioral abnormalities and motor function problems.²¹ This makes pregnant women and children particularly vulnerable to its harmful effects.

Beyond human health, the herbicide also poses significant risks to the environment. It contaminates soil and water sources, affecting non-target species. Aquatic organisms are especially susceptible, as runoff from fields treated with glufosinate pollutes nearby water bodies.^{22,23} Despite these concerns, glufosinate ammonium continues to be used in the U.S. for controlling weeds.

The situation is further complicated by the increasing weed resistance to herbicides like glufosinate. As resistance grows, higher quantities of the herbicide are required for cultivation, exacerbating its health and environmental risks. This vicious cycle raises important questions about the sustainability of introducing yet another herbicide-reliant crop into U.S. agriculture.

Steer Clear of GMOs to Protect Your Health

Given these concerns, many health-conscious consumers are seeking ways to minimize exposure to GMOs and associated herbicides. The most effective approach is to make strategic changes to your diet. By prioritizing non-GMO, free-range and organic foods, you will significantly reduce your exposure to these harmful chemicals.

It's important to be aware of common GMOs lurking in many processed foods without your knowledge. These include corn (often found in processed foods such as cornmeal, corn syrup, corn starch, corn flour, etc.), soy (which is sometimes listed as lecithin or

starch, among others), canola and potato. By avoiding processed foods, you also reduce your intake of some of the most common inflammatory ingredients, including gluten, processed sugar and [linoleic acid](#).

Additionally, it's important to keep in mind that GMOs and pesticides also enter your diet through animal products. Many animals in concentrated animal feeding operations (CAFOs) are fed herbicide-resistant GE grains like corn and soy. This is one of several good reasons for making sure your meats come from organically raised, grass fed animals.

A Guide to Choosing Organic Food

For a product to be labeled as organic, it must be free from genetic engineering and grown without synthetic pesticides, herbicides or fertilizers.²⁴ Not all organic labels are the same, though. The U.S. Department of Agriculture (USDA) outlines four key classifications for consumers to be aware of:²⁵

- **100% organic** – Products that have this label must be made with 100% certified organic ingredients. These items can display the USDA organic seal and make the "100% organic" claim.
- **Organic** – For a product to simply be labeled "organic," at least 95% of its ingredients must be certified organic, with up to 5% nonorganic ingredients allowed, as long as they are listed on the National List of Allowed and Prohibited Substances.
- **"Made with" organic ingredients** – These items must contain at least 70% certified organic ingredients but cannot display the USDA organic seal or represent the entire product as organic.
- **Specific organic ingredients** – Products with less than 70% organic content cannot carry the organic seal or use the word "organic" on the packaging. However, certified organic ingredients can still be listed on the product's ingredient panel.

Knowing these labels is just the first step. As the demand for organic products increases, some companies have tried to mislead consumers by falsely labeling conventionally grown products as "organic." From 2020 to 2023, several farmers faced legal consequences for selling nonorganic produce as organic, with one case involving a staggering \$71 million in fraud.²⁶

To protect yourself, it's essential to be a vigilant consumer. Look beyond the label and research the sources of your organic products. The best way to find organic, chemical-free produce is to visit the farmers themselves. Shopping at farmers markets and talking directly to vendors provide valuable insights into their farming practices. Many of these small-scale operations prioritize sustainable methods and try their best to limit chemical use.

Additionally, consider joining a community-supported agriculture (CSA) program.²⁷ This subscription service allows you to receive regular deliveries of fresh produce from local farms that utilize sustainable agricultural practices. Some CSA farmers also offer educational programs to deepen your understanding of sustainable agriculture.

If you can't join a CSA, the EWG's "Dirty Dozen" list²⁸ will guide your shopping. This regularly updated list highlights the 12 fruits and vegetables most likely to be contaminated with pesticides, helping you make informed choices. Lastly, consider growing your own food using sustainable methods. By doing so, you'll be able to ensure your food is as safe and chemical-free as possible.

Resources for Organic, Chemical-Free Produce

If you live in a dense, urban location in the U.S. that doesn't have any local farmers markets, don't worry. There are plenty of ways to connect with reputable organic farmers who employ regenerative agricultural practices so you will still be able to purchase their products. Below is a list of websites I recommend:

[American Grassfed Association](#) — The goal of the American Grassfed Association (AGA) is to promote the grass fed industry through government relations, research,

concept marketing and public education.

Their website also allows you to search for AGA-approved producers certified according to strict standards that include being raised on a diet of 100% forage; raised on pasture and never confined to a feedlot; never treated with antibiotics or hormones; born and raised on American family farms.

EatWild.com – EatWild.com provides lists of farmers known to produce raw dairy products as well as grass fed beef and other farm-fresh produce (although not all are certified organic). Here you will also find information about local farmers markets, as well as local stores and restaurants that sell grass fed products.

Weston A. Price Foundation – Weston A. Price has local chapters in most states, and many of them are connected with buying clubs in which you can easily purchase organic foods, including grass fed raw dairy products like milk and butter.

Grassfed Exchange – The Grassfed Exchange has a listing of producers selling organic and grass fed meats across the U.S.

Local Harvest – This website will help you find farmers markets, family farms and other sources of sustainably grown food in your area where you can buy produce, grass fed meats and many other goodies.

Farmers Markets – A national listing of farmers markets.

Eat Well Guide: Wholesome Food from Healthy Animals – The Eat Well Guide is a free online directory of sustainably raised meat, poultry, dairy and eggs from farms, stores, restaurants, inns, hotels and online outlets in the U.S. and Canada.

Community Involved in Sustaining Agriculture (CISA) – CISA is dedicated to sustaining agriculture and promoting the products of small farms.

The Cornucopia Institute – The Cornucopia Institute maintains web-based tools rating all certified organic brands of eggs, dairy products and other commodities,

based on their ethical sourcing and authentic farming practices separating CAFO (concentrated animal feeding operation) "organic" production from authentic organic practices.

[RealMilk.com](#) — If you're still unsure of where to find raw milk, check out [Raw-Milk-Facts.com](#) and [RealMilk.com](#). They will tell you what the status is for legality in your state, and provide a listing of raw dairy farms in your area. The Farm to Consumer Legal Defense Fund also provides a state-by-state review of raw milk laws.²⁹ California residents can also find raw milk retailers using the store locator available at [RAW FARM](#).³⁰

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