THE ORGANIC & NON-GMO REPORT

Information to ensure a safe, healthy, and regenerative food supply

Issue #219 • September / October 2024

Agroecology gaining ground in the U.S.

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CALIFORNIA FAMILY FARMER
SAYS ORGANIC AND
REGENERATIVE MOVEMENTS
SHOULD WORK TOGETHER

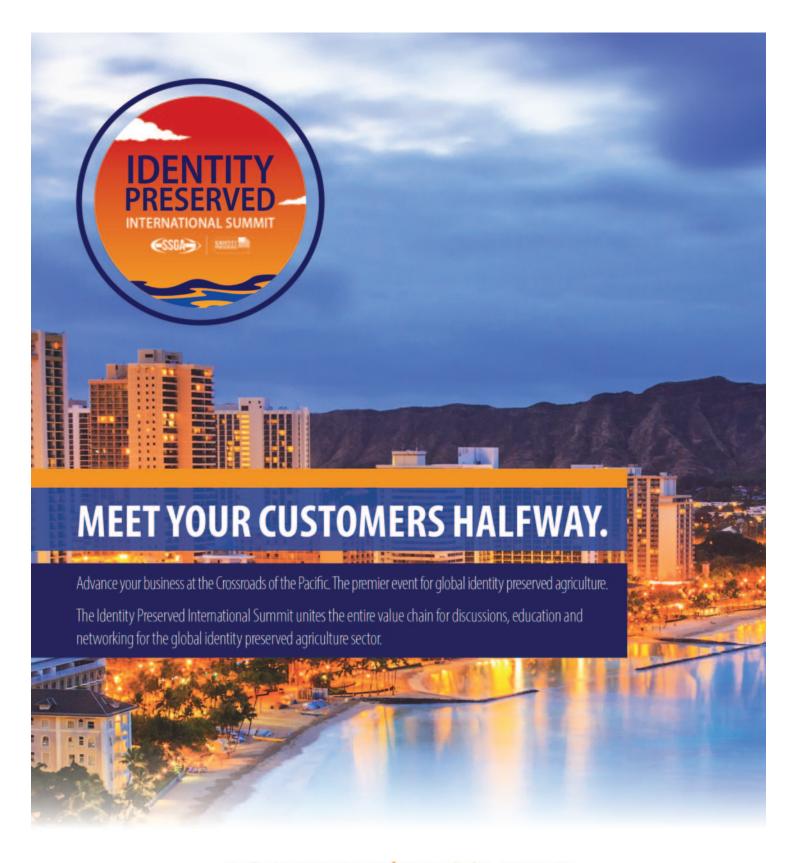
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EDITOR'S NOTE



The industrial agriculture **system**, which supplies the majority of the foods Americans consume, has to change. This system produces, for the most part, cheap unhealthy foods that cause a range of health problems such as obesity, diabetes, cancer, cardiovascular diseases, and more. Then there is the destruction to the environment with synthetic fertilizers and pesticides, which result in eroded, lifeless soils, polluted water sources, and harm

to biodiversity. And climate change on top of all that.

Fortunately, there are alternative systems of food production that can nourish people and the planet, specifically organic and regenerative. Organic farming has been producing better quality, more nutritious foods for many years without the use of harmful inputs. Regenerative agriculture, a more recent trend, has the potential to produce nutrient dense foods with its focus on building healthier soils.

Agroecology is another system (page 6) that promises to produce healthier food while nourishing the environment at the same time. Agroecology also encompasses the welfare of farmers and farm workers and supports just, local food systems that ensure food sovereignty. Agroecology has a proven track record in many parts of the world, particularly Latin America, and is now gaining recognition as another viable alternative to industrial agriculture in the U.S.

There are other initiatives to build a better food system. The Non-GMO Project recently launched the Food Integrity Collective (page 17), which aims to take a more holistic, comprehensive perspective to "nourish life at every level of the food systems."

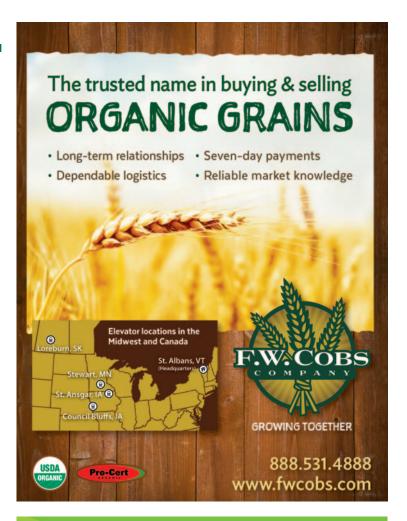
All of these "alternative" systems of food production are needed to address the health, environmental, and climate crises the world face today. With only an estimated 60 harvests left, agriculture must change to "feed the world." The corporate powersthat-be will likely resist such change, offering short-sighted GMOs instead while trying to co-opt regenerative, which is already happening.

Ultimately, it comes down to what consumers or the people want; more and more people want healthier foods and a cleaner environment, which organic, regenerative, and agroecology provide. Increasing adoption of these systems should be a global priority.

Ken Roseboro

Yen Roselvoro

Editor





Agroecology gaining ground in the U.S.

BY KEN ROSEBORO

Holistic system offers healthy, ecological, and just alternative to the damage of industrial agriculture

granic and regenerative agriculture systems are considered the best alternatives to industrial agriculture with its environmentally damaging and health threatening practices like toxic pesticides and GMOs. But another, more holistic agriculture system—agroecology—is gaining greater recognition in the U.S. after successful adoption in other parts of the world for many years.

Agroecology: science, practice, and movement

Agroecology's increased standing in the U.S. was the focus of a recent paper, "Momentum for agroecology in the USA," published in the July edition of the journal *Nature Food*.

"Agroecology is a science, a practice, and a movement with these three spheres being inseparable," says Theresa Ong, Assistant Professor of Environmental Studies, Dartmouth University, and co-author of the paper.

According to Ong, the *science* aims to understand the food system as a whole and to create more sustainability from ecological, social, and political perspectives. The *practice* is what farmers do to steward the land and sustain the planet and people. The *movement* is comprised of farmers, farm workers, advocacy groups, academics, consumers, and others trying to force change in food systems from the industrial model to more sustainable systems.

Miguel Altieri, an agronomist and entomologist who is recognized as one of the leaders in the agroecology movement and has written extensively about agroecology, says agroecology is "a science that is based on modern ecological science and agronomy, but also captures traditional knowledge that has been in place for thousands of years in developing countries."

Roots in Latin America

Agroecology has its roots in Latin America spearheaded by the work of La Via Campesina, an international organization supporting peasants and small and medium-size farmers that advocates for food sovereignty based on agroecological practices.



"A lot of important initial work from all three spheres of agroe-cology—science, practice, and movement—was done in Latin America," Ong says.

For example, Brazil has a national law on agroecology that requires 30% of food produced by smallholder farmers go to school lunch programs; the Brazilian government pays the farmers to produce that food.

"Most of this food is produced agroecologically, so the implications that has in terms of better health is huge," Altieri says.

Other agroecology initiatives have been implemented in Peru, Chile, Columbia, and Argentina.

"There are many, many, examples of agroecological initiatives dispersed throughout Latin America," Altieri says.

In Mexico, agroecological researchers are working with small scale citrus farmers to transition away from agrochemicals such as glyphosate in favor of agroecological methods.

"In terms of the practices, we can see that the best organic farms, in terms of their ecological processes, are very agroecological."

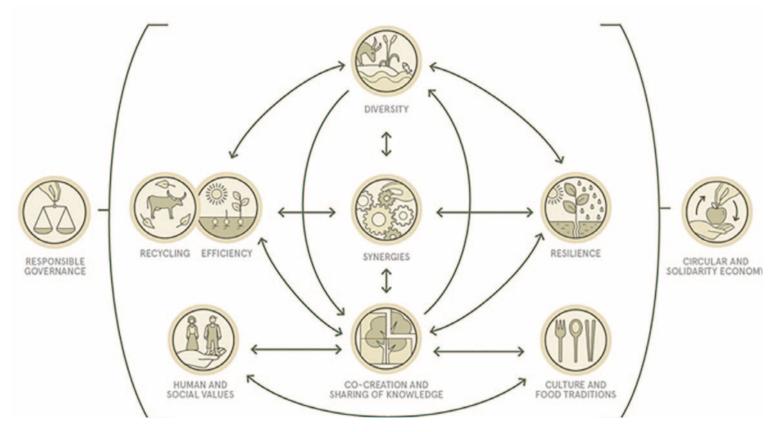
Beyond organic and regenerative

Agroecology can encompass organic and regenerative practices, such as prohibiting the use of synthetic inputs, building soil health, and supporting biodiversity.

"In terms of the practices, we can see that the best organic farms, in terms of their ecological processes, are very agroecological," says Antonio Roman-Alcala, Assistant Professor, Department of Anthropology, Geography & Environmental Studies at California State University and co-author of the *Nature Food* paper.

But agroecology's focus extends beyond the practices, "taking into account the social aspects that must be addressed for a sustainable and equitable food system," according to the United Nations Food and Agriculture Organization (FAO).

"The criticism for the organic and regenerative movements is that they've lost a lot of the initial social welfare components of their charge," Ong says. "In the U.S., organic has a very explicit definition that's primarily about production and practices. There's



Interaction of the 10 elements of agroecology

no mandate for any kind of social welfare or political change." Still, Ong sees opportunities for building coalitions with the organic and regenerative movements.

"What we talk a lot about in the paper is the centrality of coalition building in agroecology, finding ways that we can work together in creating more sustainable food systems and trying to create momentum by seeing where the visions align," she says.

Agroecology in the U.S.

In the U.S. the growing impetus for agroecology is the damage caused by industrial, corporate-driven agriculture, which dominates food production. As the *Nature Food* paper states, this system "poses a major threat to our planet's health, contributing to climate change, biodiversity loss and food insecurity, which is known as the triple threat to humanity."

As a result, there is an urgent need to transform food production in the U.S. and worldwide. Ong, Altieri, and others argue that agroecology offers a viable solution.

Agroecology's international standing increased with a 2019 report by the FAO's High-Level Panel of Experts of the Committee on World Food Security. The report recognized agroecology's potential contributions to formulating transitions towards sustainable food systems.

"We're seeing this first wave of international recognition of agroecology, and more governments actually create policies focused on agroecology in ways that we haven't seen before," Ong says. "The international recognition is forcing the hand of the U.S., which has been slower to recognize agroecology."

The U.S. agroecology movement got a boost when the U.S.

Department of Agriculture asked agroecologists to convene a U.S. Agroecology Summit in 2023. The summit brought together 100 stakeholders in the food system to discuss promoting agroecology research in the U.S.

Agroecology programs are emerging at U.S. colleges and universities. For years, the University of California at Sant Cruz's Center for Agroecology was the only program. Now there is the Agroecology Center at Florida A&M and most recently the Institute for Agroecology at the University of Vermont. There are also more than 80 academic degree programs in the U.S. with coursework on agroecology.

As a further sign of agroecology's growing standing in the U.S., the Pesticide Action Network recently changed its name to the Pesticide Action & Agroecology Network.

"The right to define, produce, and access healthy food"

Full Belly Farm, a long-established certified organic farm in California's Capay Valley, is a good example of an agroecological farm in the U.S. The farm grows more than 100 organic vegetables, fruits, and nuts on 400 acres in California's Capay Valley. The farm focuses on producing nourishing foods, building soil health, and crop diversity and caring for the environment. But Full Belly's commitment goes beyond the farm to the greater community. They provide fresh organic foods through their Community Supported Agriculture program. They help build food sovereignty by supporting the growth of other organic farms in their region. They provide jobs to people in the community and ensure their workers, some of whom have worked on the farm for 30 years,

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Full Belly Farm partners, from left: Paul Rivers, Judith Redmond (no longer active), Dru Rivers, and Amon Rivers.

have stable employment and are treated fairly.

"We love to think of ourselves as

beyond organic in a lot of ways," says Full Belly Farm co-owner Dru Rivers.

"Agroecology is not about just an isolated

farm; it's really about trying to have a healthy community."

Full Belly Farm is building food sovereignty, a critical goal of agroecology, in its region. Ong says food sovereignty is "the right to define, produce, and access healthy food that is culturally appropriate and preserves the ways of life of farmers."

Altieri contrasts food sovereignty with food security. "Iowa is food secure, but it's not food sovereign because it has to import all its food," he says. "Food sovereignty means that you produce all your food, and you satisfy the needs of your local populations with the systems that you have in place."

What is the potential of agroecology? "I hold great hope for agroecology in terms of being a leader in solutions for food systems transformation," Ong says. "Whether you're a consumer, a farmer, or a farm worker, everyone in society has some relation to food, and agroecology can show us how we are all connected in the food system, and how reliant we are on each other to make that system work for all of us."



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New USDA organic fraud rules are working, says organic rice protein supplier

Strengthening Organic Enforcement rules are eliminating fraudulent supplies of organic rice protein

The U.S. Department of Agriculture's new Strengthening Organic Enforcement (SOE) regulation, which aims to crack down on organic fraud, is working, according to a U.S. supplier of organic rice protein.

California-based Axiom Foods says that it is tripling production of its organic rice protein products due to strong demand from food and beverage manufacturers who are scrambling to find alternatives for previous rice protein sources, passed off to them as "organic" but which now cannot comply with the SOE regulations.

Fraudulent organic rice protein had been coming from China, and suppliers there have been providing fake organic certificates, according to David Janow, Axiom's founder and president.

But according to an Axiom Foods press release, "thanks to USDA's new Strengthening Organic Enforcement regulations, there is finally an end to the fake organic rice protein in the U.S. market."

"I think the Chinese suppliers are finally saying, 'we can't get you organic the way you want it with the certificate, so we can't supply you' because they'll be shut down," Janow says.

One of the telltale signs of fake organic ingredients is when they don't reflect the higher cost of growing organic crops.

"The truth is finally out there, as we have been telling food and beverage manufacturers for years that they can't trust fake organic certificates primarily from Chinese suppliers, just because the price was better," Janow says. "If a price sounds too good to be true, it probably is."

SOE rules now ensure that organic rice protein is sourced and produced from organic rice fields. The rules, which aim to enhance accountability for organic food and beverage products, requires that every part of the organic supply chain be certified and fully verifiable. This is now done through a unique QR code on each transactional certificate, linking directly to the certifying agency's website. For easy verification, certifications can now be checked on the USDA Organic Integrity Database.

"Every step has to be organic certified. So, if you're an importer, you've got to be certified, and everyone along the supply chain has to be certified," says Kay Abadee, marketing team leader at Axiom.

Axiom says it is one of a small number of verified suppliers of certified organic rice protein, and the only one recognized as GRAS (generally recognized as safe) by the U.S. Food and Drug Administration.

The quantity of authentic organic-certified products formulating with rice protein has surged, especially as sourcing organic pea protein has become more challenging due to the lack of organic pea crops. The manufacturers of these products for consumers are seeking organic rice protein to meet the USDA requirement of

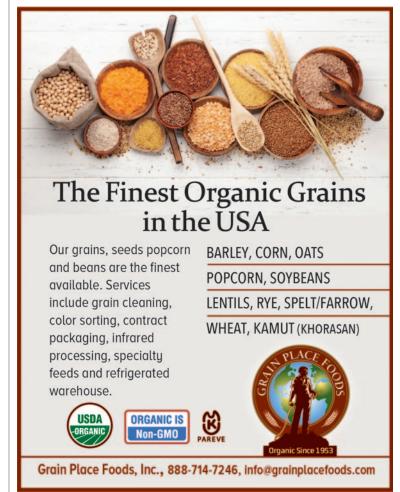


Axiom's organic rice protein.

formulating with a minimum 95% organic ingredients.

Axiom has tripled production of its Organic Oryzatein® Rice Protein to meet the increased demand, Janow says.

According to the Organic Rice Protein Market Report, recently published by InsightAce Analytic, the global market was valued at \$134.12 million in 2023.





USDA announces almost \$10 million in Organic Market Development Grants, resulting in \$85 million invested to expand markets for U.S. organic products

he U.S. Department of Agriculture's (USDA) Agricultural Marketing Service (AMS) recently awarded an additional \$9.7 million for 13 grant projects through the Organic Market Development Grant (OMDG) program, bringing the total amount awarded through the program to \$85 million. These projects will support the development of new and existing organic markets to increase the consumption of domestic organic agricultural products. The projects funded through this program are anticipated to benefit over 119 million producers, buyers, and consumers.

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This round of awards includes projects for the market development and promotion, simplified equipment-only, and processing capacity expansion project types. The funded projects will increase the availability and demand for domestically produced organic agricultural products and address the need for additional market paths.

Recipients of this funding include:

- Tuscarora Grain Co. in Mohrsville, Pa., will use grant funding to purchase a pellet mill to increase organic livestock feed supply chain capacity.
- The Spicy Organics LLC, in Frisco, Texas, will purchase equipment to streamline and increase their processing capacity of organic spices, herbs, and grains.
- The Turning Green, in Sausalito, Calif., will leverage the massive purchasing scale of the school food sector to grow the organic supply chain by bringing together school food networks, small underserved organic farmers, and local agricultural support organizations.

This grant program is part of the USDA Organic Transition Initiative (OTI), launched in fall 2022, which offers a suite of programs and resources to help existing organic farmers and those transitioning to organic production and processing.







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Study: Organic farming benefits honeybees

rganic farming and flower strips promote the health of honeybees. In their vicinity, colonies grow stronger and are generally healthier. This is most likely because the insects have a diverse and continuous food supply there and are less exposed to pesticides. These are the findings of a new study by Martin Luther University Halle-Wittenberg (MLU) and the University of Göttingen, published in the *Journal of Applied Ecology*. The team analyzed data from 32 bee colonies at 16 locations in Lower Saxony, Germany with different proportions of organic fields, flower strips, and semi-natural habitats.

Each of these locations differed in their proportion of organic fields, flower strips and perennial semi-natural habitats. The researchers placed honeybee colonies at each of the sites and observed these for around a year.

The data gathered about the bee colonies was then compared. "Organic farming had the greatest impact—the larger the proportion of these areas, the lower the parasite infestation of a colony. This improved colony growth," explains lead author Patrycja Pluta from MLU.

One reason for this could be that organic farming uses fewer pesticides and, instead, other plant protection measures. Flower strips were also advantageous to honeybees: the number of Varroa mites was lower in areas with a lot of flower strips. "This could be due to the fact that a diverse and rich food supply strengthens the honeybees' immune system," Pluta says.

Soil microbiome is harmed by chemical-intensive agriculture, helped by organic, study says

study in the journal *Biology and Fertility of Soils* confirms that organic agriculture significantly improves soil health, supporting ecological functions that are harmed by conventional, chemical-intensive farming practices.

The soil microbiome is filled with millions of living species—

kept in balance by predator-prey relationships. Protisan predators (ancient organisms containing a nucleus) feed on bacterial prey in soils, maintaining a delicate balance that keeps the bacteria population healthy and releases nutrients into the soil. The research found that chemical fertilizers disrupt this biological relationship, leading to unhealthier soil with fewer nutrients for plants.

Protist predators are sensitive to petrochemical fertilizers, possibly changing the diversity and functional composition of soil

protist communities. The Chinese researchers leading the study compared microbial communities from organic and conventional agriculture systems, noting how differences in soil properties cause changes in microbial abundance and diversity. Organic farming uses soil amendments to increase nutrients, which allows faster growth of bacteria. Protists may prey on plant pathogens, making healthier plants.

(Source: Beyond Pesticides) ■



USDA funds enable organic hummus start-up to potentially quadruple its volume

ittle Sesame, a Washington, D.C.-based hummus producer, was recently awarded a \$2.2 million, three-year grant from the United States Department of Agriculture to develop a supply chain of organic chickpea farms to grow its business.

"We've spent years making a case and building this supply chain, so it felt so rewarding to finally be acknowledged for sourcing this way and supporting good agriculture," said co-founder Nick Wiseman.

Now, quadrupling its volume and boosting sales and marketing becomes possible.

Organic chickpeas, along with lentils, alfalfa, and peas, are prime crops to mitigate climate disruption impact. They fix nitrogen in the soil and are a good rotation crop with wheat.

The funding is part of a \$75 million Organic Market Development Grant from the USDA's Department of Agricultural Marketing Services (AMS). USDA has invested \$50 million so far in 70 projects in 29 states in efforts to transform our food system. Although still a fraction of the billions spent on commodity farming, the amount signifies a new commitment to smallholder farms and domestic markets.

Little Sesame sources its organic chickpeas from one farmer, Casey Bailey, who farms 5,000 acres in Montana. Currently 500 of those acres are filled with Little Sesame's chickpeas; Bailey envisions this growing to 2,000 acres. "Without this grant creating a market, I would just stop growing chickpeas," he said.

Government funding is game-changing, Wiseman said, in today's economic environment. "It accelerates what is possible." (SOURCE: *Fast Company*)



FEATURE



From left: Benina Buroughs Montes, Rose Marie Burroughs, Ward Burroughs, Christina Burroughs Byslma

California family farmer says organic and regenerative movements should work together

Burroughs Family Farms wants to see unity and accessibility in the regenerative movement

BY KEN ROSEBORO

There is vigorous debate between those who say farms must be organic to be regenerative, and those who say conventional farms that adopt regenerative practices and build soil health are also regenerative.

A farmer in California says both camps should work together to regenerate agriculture and build a better food system. "There is so much positivity in both camps, so let's make it one camp. Let's figure out how to get more soil covered in the organic landscape and figure out how to use less synthetics in regenerative. Let's work together to make the world a better place." says Benita Montes, managing partner of California-based Burroughs Family Farms.

Pathway to regenerative is open to all

Montes, whose family farm holds dual regenerative certifications, says the two groups working together could have a major impact.

"If we could just work together, it could really create some magic and show conventional ag that it can be done without the inputs and have that diversity as it's happening on farms all across the world," she says.

Burroughs Family Farms, a fifth-generation, family-owned farm in California's Central Valley, recently received regenerative certification from Regenified, a third-party verifier. Burroughs had previously earned Regenerative Organic Certification in 2023.

Burroughs Family Farms hopes that its latest certification will demonstrate to other farmers, brands, and the industry at large that the pathway to regenerative agriculture is open to all.

Burroughs Family Farms produces almonds, almond butters, walnuts and olive oil, organic pastured eggs, lamb, and beef across 2,031 acres. Burroughs employs a whole systems approach that works in harmony with nature to mitigate the effects of climate change while restoring the health of the land. Aimed at improving soil health, enhancing biodiversity, optimizing water usage and reducing carbon emissions, their regenerative practices support on-farm operations that actively regenerate the environment.

In addition to its regenerative certifications, Burroughs Family Farms is certified organic and has Real Organic Project certification.

Montes acknowledges the farm has "a lot of certifications" but says: "I think they're all important. We have those certifications because we feel like we need to come together."

Regenerative Organic and Regenefied certifications

Over the past few years, Montes realized the potential of regenerative agriculture, so the farm decided to seek Regenerative Organic Certification in 2022.

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"We were already organic so regenerative organic made the most sense for us, and so we started that in 2022 we got that certification in 2023," she says. "For us, sustainable is not enough, because we're just kind of staying the same. We need to make the world better in everything that we do."

Montes sees regenerative organic as the ideal to strive for. "The hope and dream would be that everyone becomes regenerative organic."

Montes says her farm decided to seek Regenefied certification because of the need to adopt regenerative practices that build soil health and sequester carbon to mitigate climate change. "We have to move more farmland into regenerative practices if we're going to make a real impact for our world at scale."

Further, she wants her farm's Regenefied certification to be an example that other farms can follow in adopting regenerative practices.

"This is an urgent situation, and we want other farms to know that regardless of the status of your land, whether you're conventional, organic, or somewhere in between, there's a way to start your journey today," she says.

Montes says Regenefied certification is rigorous but doable for other farms. "We want farmers to know that Regenified's tier system meets you where you're

at. The capture of raw data at the soil level gives you what you need to create a clear path towards continuous and measured improvement on multiple levels, so you can enhance soil health and farm productivity in a very tangible way."

Salar Shemirani, CEO of Regenified, sees Burroughs Family Farm as a leader in organic and regenerative agriculture. "Their decades-long commitment as one of the leading regenerative and organic almond farms sets an example for their peers and the broader industry to follow. Their journey encourages unity within the farming community, inviting others to join in making tangible progress through regenerative agriculture."





NON-GMO NEWS



Non-GMO Project broadens scope with launch of Food Integrity Collective

New initiative aims to transform food systems by addressing the root causes of food and health crises through an interdependent approach

he Non-GMO Project recently launched the Food Integrity Collective, an initiative aimed at revolutionizing the retail food system.

Building upon its success with over 66,000 verified products representing over \$45 billion in annual sales, the Non-GMO Project is now expanding its vision to tackle a comprehensive food systems transformation.

"The Food Integrity Collective represents a paradigm shift in our approach to food and our relationship with our Earth," says Megan Westgate, CEO of the Non-GMO Project and Food Integrity Collective. "It encourages everyone, from producers to shoppers, to participate in creating a renewed food system designed to nourish life."

The Food Integrity Collective redefines conventional approaches to food system improvement by recognizing the profound interconnection between human wellbeing and the health of all living systems. This holistic perspective acknowledges humans' unique influence on global ecosystems—and the accompanying responsibility this entails. The Collective's approach encompasses eight essential 'petals'—from minimal processing and non-GMO practices to regenerative sourcing, healthy human communities, and animal wellbeing—forming a comprehensive framework that focuses on nourishing life at every level of the food system.

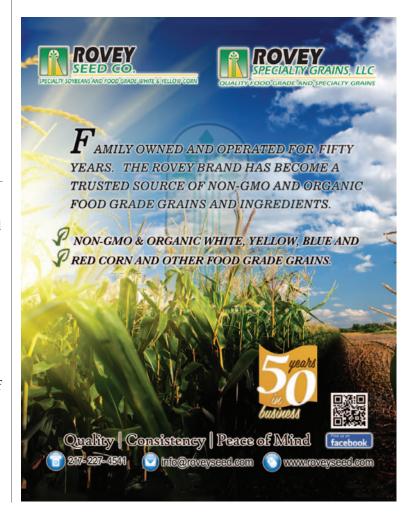
Recent studies highlight the urgency of this approach: ultraprocessed industrially produced foods, comprising over 50% of dietary energy in some Western countries, are linked to increased risks of cognitive decline and mental health issues.

Brand Cohort Launch

The Collective has adopted a co-creative approach with an initial cohort of brands that are committed to this transformative method. These brands include Atlantic Sea Farms, Califia Farms, GoodSam, Heray Spice, Honey Mama's, Levelle Nutrition, Pasturebird, Snacktivist, Spicewell, and Tree-Range Farms. Each of these brands is dedicated to collaborating on a new approach to establishing trust, transparency, and integrity in the food system.

The Collective is developing a range of innovative tools and programs designed to engage stakeholders across the food system in a co-creative process. From a dynamic framework that evolves towards reciprocal thriving to a web-based product finder launching in 2025, the Collective aims to empower all participants in reshaping the food landscape.

Joni Kindwall-Moore from Snacktivist says, "I am 100% behind Megan and the Non-GMO Project team in their big-picture vision to help align food system activities with transparency and integrity in a way that goes beyond a one-way transaction and down to the bedrock of the supply chains and corporate culture. This is the future of food!"



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International conference focuses on the future of the non-GMO industry

International Non-GMO Summit will focus on impact of new genetic engineering technologies, international market developments, and consumer expectations

he leading European industry associations of the non-GMO market sector will be hosting the International Non-GMO Summit 2024 in Frankfurt, Germany on October 8, 2024.

International experts from politics, business, and science will provide information on important topics and trends in the non-GMO markets worldwide. The focus will be on the ongoing political debate surrounding new genetic engineering technologies (NGTs) and their potential impact on the non-GMO and organic food sectors.

The importance of the non-GMO industry in Europe will be emphasized by the opening messages from the Hungarian Minister of Agriculture, István Nagy, representing the Hungarian EU Council Presidency, and from German State Secretary Silvia Bender, representing the Federal Minister of Agriculture Cem Özdemir.

Erin Auld and Pauline Lauvin from the Non-GMO Project will provide insights into almost two decades of experience with non-GMO certification in the U.S. Eric Gall from the European organization IFOAM Organics Europe will explain how the European organic sector intends to effectively keep NGTs out of its value chains.

Bertalan Kruppa (Donau Soja), Maxime Montserrat (Bunge) and Daniele Marcomin (Agribusiness di Covolato srl, Italy) will provide an overview of supply, demand and prospects for GMO-free raw materials in Europe and worldwide. Experts from market research, production and retail will discuss the diversity and prospects of the European non-GMO markets.

The full conference program and other information can be found at www.nongmosummit.com.

The International Non-GMO Summit is hosted by key industry associations in the non-GMO market: Verband Lebensmittel ohne Gentechnik (VLOG) (German non-GMO association), ARGE Gentechnik-frei (Austrian non-GMO association), Donau Soja, European Non-GMO Industry Association (ENGA), and ProTerra Foundation.

Non-GMO farmer forced to grow GMO dicamba soybeans to avoid crop damage

BY KEN ROSEBORO

dam Chappell planted non-GMO soybeans for 15 years. He appreciated the premium prices he earned growing feed-grade non-GMO soybeans.

"I was getting a little more than \$2.00 above Chicago Board of Trade prices (for soybeans)," says Chappell, who farms 2000 acres in Cotton Plant, Arkansas. "It was a really good deal, and I could do it."

The cost for non-GMO seeds is also much less than for GMO seeds.

Chappell uses regenerative farming practices such as cover crops and minimum tillage to build soil health. Such practices have helped him reduce the use of herbicides and nitrogen fertilizers.

"I can't grow anything else"

But Chappell can't grow non-GMO soybeans anymore. That's because other farmers in his area are growing GMO soybeans that are tolerant to dicamba herbicide. The controversial weedkiller is prone to drift—turning from a liquid to a gas when sprayed, drifting across other farm fields, and killing other crops including Chappell's non-GMO soybeans.

"I can't grow non-GMO soybeans anymore, and it's a shame because it's knocked me completely out of my non-GMO markets," he says.

Instead, Chappell has been forced to grow GMO dicamba tolerant soybeans—just to protect his farm. For the past four or five years, Chappell's non-GMO soybeans have been increasingly damaged by dicamba drift from neighboring farms.

"All I grow is dicamba tolerant soybeans. I can't grow anything else," he says. "Anybody that doesn't grow dicamba tolerant soybeans has that problem."

"Tantamount to extortion"

Forcing farmers like Adam Chappell to buy dicamba tolerant GMO soybeans seeds was part of Monsanto/Bayer's and BASF's marketing plan.

In 2020 the Midwest Center conducted an extensive investigation and found that Monsanto and BASF released their GMO dicamba tolerant soybeans knowing that the herbicide would cause widespread damage to soybean and cotton crops that weren't resistant to dicamba. In fact, they used "protection from your neighbors" as a way to sell their seeds.

In 2017, Arkansas farmer Tom Burnham sent a letter to the Arkansas plant board saying he estimated that half the farmers in his area who planted dicamba tolerant crops did so to prevent them from suffering damage, according to a report by the *St. Louis Post-Dispatch*. "I feel the need to plant a technology to protect your crop from off-target movement is tantamount to extortion," he wrote.



"You buy it or else"

The use of dicamba has been controversial since its use was increased starting in 2016 when Monsanto first released dicamba-tolerant GMO cotton and soybean seeds. They released the seeds even though they hadn't released their dicamba formula. Monsanto also knew that illegal off-label spraying of dicamba would be "rampant."

As acreage of GMO dicamba-tolerant cotton and soybeans have increased since then—along with applications of dicamba herbicide—so has dicamba drift damage on an unprecedented scale. Millions of acres of soybeans, orchards, vegetable crops, ornamental trees, and gardens have been damaged. Dozens of imperiled species, including pollinators like monarch butterflies and rusty patched bumblebees, are also threatened by the herbicide. A dicamba drift dispute even led one farmer to murder another in Arkansas.

Chappell says more and more farmers in his area grow dicamba tolerant soybeans to protect their farms from drift damage.

"There's not many people that grow non-dicamba beans anymore because they just can't manage the injury."

Bader Farms, the largest peach producer in Missouri, sued Monsanto over dicamba drift damage and won: in 2020, a jury in a U.S. district court ordered Monsanto/Bayer to pay Bayer \$15 million in compensatory damages and \$250 million in punitive damages. Bader's attorney Billy Randles said at the time: "This is the first product in American history that literally destroys the competition ... You buy it or else."

The devastation caused by dicamba has led to successful legal action to ban its use. In 2020, a federal court vacated the U.S. Environmental Protection Agency's dicamba registration, noting that the EPA had failed to examine how "dicamba use would tear the social fabric of farming communities." Just four months later the EPA reapproved dicamba claiming that new measure would reduce the damage. Then this past February, a federal court vacated the EPA's 2020 re-approval of dicamba. But in May, Bayer again asked the EPA to re-approve dicamba.

Chappell sees no choice in what he grows because of dicamba drift. "Yes, I'd rather plant non-GMO or whatever I want, but I just can't," he says.

Additional sources: *Investigate Midwest*, *St Louis Post-Dispatch*

REGENERATIVE AGRICULTURE

Women-owned rice brand attains Regenified™ certification

alston Family Farms, Arkansas-based women-owned rice company, is now certified by Regenified regenerative certification. The certification signifies its commitment to regenerative agriculture practices across all 6,000 acres. Regenified's 5-tier system involves practices for soil health, enhanced biodiversity, water conservation, and ecosystem resilience. Cover cropping, crop rotation, and no-till planting are examples.

"It's increasingly clear that the real impact emerges from the synergy of linking these practices, culminating in a holistic strategy. Regenerative practices not only benefit the environment, but they can also bolster the farm's economic sustainability," said Robin Ralston, co-owner. "The first step is deciding to farm regeneratively. Regenified met us where we were [giving us] confidence to move forward for certification."

The farm's soil practices minimize disturbance, fostering a network of plant roots and fungi—these improve nutrient cycling and natural pest control. The resulting nutrient-dense food benefits both consumer and environment, regenerating the land for future growers.

Additional practices include patented packaging to reduce plastic, zero-waste policy repurposing milling byproducts, and a new solar array to meet all electrical needs.

Ralston Family Farms rice varieties include Aromatic Purple, Red, Nature's Blend, Jasmine, Basmati, and Golden Light-Brown Rice, available nationwide.



CIBO Technologies and The DeLong Co., Inc. partner to scale regenerative agriculture

limate software company CIBO Technologies is working with The DeLong Co., Inc., an agricultural advisor with 38 grain, agronomy, and export locations throughout the U.S. Through this collaboration, CIBO Impact helps farmers within The DeLong Co., Inc.'s grower network enroll in regenerative agriculture incentive programs backed by the USDA and private companies with Scope 3 emissions targets.

The DeLong Co., Inc. will use the CIBO Impact Platform to incentivize opportunities for growers' sustainable and climateresilient farming practices.

"We're always looking for new ways to promote farmland resilience and sustainability across our supply chain," said President Chris DeLong. Benefits of regenerative agriculture include cutting carbon emissions, improving soil health, and harnessing financial incentives.

Together, CIBO and The DeLong Co., Inc. are able to:

- Increase sustainable ag incentive payments;
- Prequalify land and understand the potential return;
- Deliver simplified program enrollment;
- Monitor status and generate income;
- Automatically prequalify for new programs;
- Navigate the complexity of NRCS (Natural Resources Conservation Service) programs.

For more information, visit: https://www.cibotechnologies.com/grower-network-partner-usda-programs-landing-page/ ■



Frontier Co-op introduces Regenerative Organic Certified[®] spices

nowing that your spices are boosting environmental stewardship, organic farming, and social equity might add an extra bit of flavor to your dish. Iowa's Frontier Co-op—leading brand for herbs, spices, and baking flavors—now offers five products that are Regenerative Organic Certified®.

Ceylon Cinnamon, Cinnamon Sticks, Turmeric, Ginger, and Medium Grind Black Pepper spice bottles range from \$6.49 to \$9.69. The debut furthers Frontier Co-op's status as a leader in setting high standards in sustainably sourced and organic spices, herbs, and botanicals. Frontier was one of the first U.S. spice brands to offer Fair Trade spices.

The Regenerative Organic Certified label goes a step beyond organic, calling for the highest soil health standards while benefitting smallholder farmers. The certification requires organic certification as well as certification from Fairtrade America and participation in the Well Earth Impact Sourcing Program—improving smallholder farmers' long-term resilience and engagement in the



regenerative supply chain.

"Frontier Co-op's commitment to making a positive impact sets a powerful example for the spice and herb industry, and we hope this encourages other brands to follow suit," said Elizabeth Whitlow, with the Regenerative Organic Alliance.

What regenerative ag certifications are available?

he Climate Collaborative publishes a document "Regenerative Agriculture Certscape," that gives an overview of the regenerative agriculture certifications currently offered in the United States. These programs include:

- Certified Regenerative by A Greener World
- Land to Market
- Regenerative Organic Alliance's Regenerative Organic Certified
- Regenefied
- Soil Climate Initiative's Soil and Climate Health Initiative Verified
- TerraGenesis

Here are some points covered by the Certscape document:

- Consideration of aspects beyond soil health in all certification programs.
- Global applicability of certifications, including smallholder farming scenarios.
- Coverage of a wide range of crops, livestock, and operations by the certifications.
- Acreage enrollment requirements without strict minimum or maximum limits for accessibility.
- On-farm audit requirements for certification programs.
- Support provided to farmers by different certification programs.
- Unique product labeling or trademark offered by each certification program.
- Positive trend in consumer recognition and market demand for certified products.



- Focus on traceability, farm-level verification, and supporting farmers in certification programs.
- Testing requirements including soil tests, water holding capacity, and biodiversity assessments.
- Programs have certified products and farms, with some expanding globally.
- Emphasis on continuous improvement and adherence to standards for maintaining certification.

The Climate Collaborative updates the Certscape document periodically. The latest version was updated this past May.

To access this version, visit: https://www.climatecollaborative.com/regenerative_agriculture_certscape ■

MARKET NEWS



Timeless Seeds' organic lentils

Mad Markets purchases Timeless Seeds

Mad Markets plans to launch an acquisition strategy for infrastructure to build the "missing middle" across the country

ad Markets public benefit corporation (PBC) launches with the acquisition of Timeless Seeds, Inc., a renowned lentil and chickpea processing company founded in 1987, and a pioneer in the organic agriculture movement.

Over the past 80 years agricultural infrastructure and markets have become highly consolidated and focused on monoculture commodities, which has reduced the diversity of agroecosystems and the quality of food, as well as impacting the financial and ecological resilience of the food system.

Mad Markets' mission is to reverse this trend by accelerating the adoption of regenerative organic agriculture across the U.S.

The goal of Mad Markets is to become a go-to source of regenerative organic ingredients for a wide range of clients, from consumer packaged goods to wholesale buyers. The strategy aims to build the "missing middle" of regenerative supply chains by investing in legacy infrastructure companies that can directly connect communities of growers and buyers. The acquisition of Timeless Seeds is a bold step toward this vision.

According to Mad Markets CEO Alex Heilman, "The acquisition of Timeless is a major opportunity for us to strengthen our work connecting farms, brands, processors, distributors, retailers, and institutional sourcing partners. Our goal is to grow Timeless' sales fourfold over the coming years. We will support rural farm communities, and address food system related climate change

impacts, by assisting a diverse range of buyers in achieving their sustainable sourcing goals. We are excited to announce we are open for business!"

David Oien, Co-Founder and CEO of Timeless Seeds, affirms the alignment of this ownership transition, expressing, "We founded Timeless in 1987 in order to support our farmers by establishing a processing facility for these soil building crops and developing market opportunities. Mad Markets' strategic vision, exceptional market connections, and experienced team are the ideal partners to propel Timeless to new heights."

Anchoring Mad Markets is Terra Regenerative Capital, a public benefit investment vehicle catalyzing the adoption of climate smart agriculture in the United States. Builders Vision, an impact platform supporting people and organizations building a more humane and healthy planet, is anchoring the investment in Timeless Seeds. Together with Blueberry Capital Partners and twenty-four other mission-aligned investors, Mad Markets plans to launch an acquisition strategy for infrastructure across the country, starting with this purchase.



Grainwell Puffed Grains starts production at the world's largest controlled puffing facility for ancient and contemporary grains

The state-of-the-art facility produces single-ingredient, clean-label, non-GMO, gluten-free, and organic grains and legumes, enabling the creation of new better-for-you foods and snacks

rainwell Puffed Grains, previously known as Ancient Brands, recently announced that their new Dyersville, Iowa facility has begun full-scale puffed grain production.

"Our new name better reflects our unique capabilities and marketplace value," says Wolfgang Buehler, Grainwell CEO. "Better-For-You foods continue to gain market share globally. Puffed ancient and contemporary grains,

produced properly, bring huge potential to create innovative new products and improve existing ones. Our team works with brands' R&D, food science, and product marketing people to tailor puffed grain and legume solutions that open possibilities for innovative products and improve existing ones."

Grainwell provides samples and development support to food companies' R&D, product development, and food science

teams on a wide array of components for creating innovative new products and enhancing existing offerings. The company has also established a leading position in brand name, uncoated puffed grain cereals, claiming over 80% of the production in this growing category.

Puffed grains produced at the facility include spelt, amaranth, brown rice, buckwheat, millet, quinoa, Khorasan (Kamut), sorghum, and more.

Grace Farms unveils organic, sugar-free iced tea line

race Farms in New Canaan, CT has launched a new line of easy-to-brew iced teas. The five organic varieties include caffeine free herbal flavors Hibiscus Orange, Spearmint Rose, and Rooibos Chai as well as summer favorites like Classic Iced Tea and Ginger Peach. The teas are USDA organic, Fairtrade, Kosher, gluten free, and vegan.

For \$14 per pouch, you get 12 onequart brew bags, totaling three gallons of iced tea. Compostable and resealable pouches eliminate excess waste. Sales profits go 100% toward Grace Farms' mission



to end forced and child labor (Design for FREEDOM TM).

The company is a certified B Corp, pioneering a philanthropic capitalism

approach that enables the company to provide customers with the highest quality while prioritizing ethical and sustainable practices.

Nebraska farmer advocates for regenerative agriculture, preserving family farms

BY RONICA STROMBERG

raham Christensen exudes energy and determination when speaking about why he came back after college to farm his family's 800 acres near Oakland, Nebraska.

"It was the idea that we could be solutions for the world's biggest challenges that made me solidify that I wanted to be a part of that," the 44-year-old said. "It's made farming really exciting for me, and it feels better, too, both health wise but also, I think, mental health wise, and that's challenging because farming's a tough, tough profession to be in."

Aim to diversify the farm, meet environmental goals, stop soil erosion

With pressures to compete with large, industrial farms, Christensen said his family, like other small and mid-size family farmers, had experienced the downfalls of trying to buy more land and "play in the high-debt game." They ended up selling their cattle in the 1980s and focused on crops, mainly corn and soybeans, to maintain profits.

Over time, he said they saw erosion eat away at their soil and carry it off in waterways. They saw more people dealing with cancer and neurological issues and wondered if chemicals tolerated by genetically modified organisms might be causing such health problems. They saw legislative protections stripped away from family farmers.

The Christensen family had farmed near Oakland since 1867, but his parents saw the hardships facing family farms and encouraged Christensen and his brother, Max, to build other job skills. Christensen used communication skills learned at Midland Lutheran College to start GC ReVOLT, a solar and alternative energy company. His brother became an electrician. Both work at these jobs while continuing to farm.



Graham Christensen

Looking at modern-day farming with its thin profit margins and sometimes harmful effects on the environment, Christensen said he and his brother recognized they needed to make a profit yet not deplete resources for the next generation. He said they wanted to keep their farm in the family.

They have made their product decisions primarily around how they can better steward the soil while still clearing a profit, he said. Recently, they have been experimenting with agroforestry and hazelnuts, pecans, and cherries.

"We're just trying to figure out ways we can diversify our farm and add income while meeting more of our environmental goals and halting that soil erosion problem," he said.

Practice regenerative farming

He listed six principles of regenerative farming they try to follow. They avoid tilling, usually only tilling areas compacted by trucks or tractors and for light maintenance. This helps keep soil in place instead of having it blow away in the wind or wash away with rain.

They keep roots in the ground, using cover crops between plantings. They have planted rye, triticale, wheat, vetch, clovers, turnips, radishes, and various kinds of camelina.

The cover crops also help with the third regenerative farming principle of creating a soil armor to keep the topsoil layer cool for microorganisms and protect from erosion.

Christensen and his brother have increased biodiversity with what they plant, which gives pollinators like bees and other insects a place to live and ward off harmful pests. Biodiverse operations require more help and, so, also have the potential to create jobs and revitalize rural areas, he said.

The brothers are bringing animals back on their farm, allowing cattle to graze on the cover crops and fertilize the soil naturally. This fifth principle is the one their farm is weakest on, Christensen said.

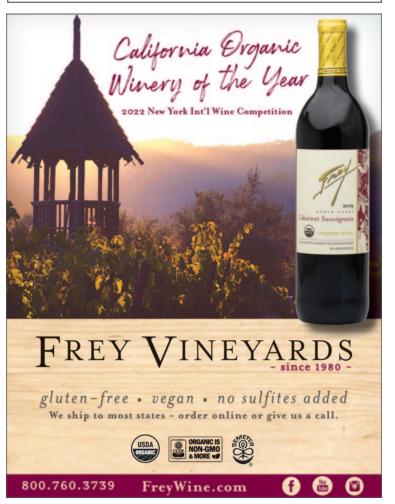
CONTINUED ON PAGE 26 >



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In the sixth regenerative principle, they try to respect the context of their ecosystem by keeping livestock patterns and crops suitable to the local geography, weather and environment.

"Ecosystem context is not reengineering the ecosystem through new, unproven biotechnologies, using machines that replace all the humans or trying to plant corn in places where corn is not supposed to grow," he said. "We need to be able to figure out what is the natural method, and then we need to tool up farmers."

Inching toward organic

He said he and his brother avoid genetically modified organisms as much as they can and seeds coated with chemicals. They no longer use fungicides or insecticides. They still spray herbicides twice a year but are exploring weed-cutting robots for future use.

They are looking at how their ancestors and the indigenous people who preceded them took care of the land and what they did right or wrong. Christensen said they use natural biological products like seaweed, kelp, or compost teas to feed the microbes in the soil but don't want to use biotechnologies like gene-edited microbes. They are inching toward organic, he said, but aren't there yet.

He said he would like the government to incentivize environmentally friendly *practices* rather than incentivizing farmers to buy biotech *products*. Christensen is trying technologies like using drones to sow cover crops, alternative energy like solar, probes to limit water use in irrigation, and robots to remove weeds.

He also said he would like state government to reenact legislation, like bans on meatpacker feeding, that allowed family farms to compete with industrial ones.

"We need young people, the next generation, on the farm, and our nation has no plan for this," he said. "That presents national security issues as there are fewer of us with the ability to manage and watch over the land as more foreign multinational influence and investment come into it."

The average Nebraska farmer is 57 years old, so many could leave farming in the next 20 years. With land prices beyond what most young people can afford, Christensen asks who these farmers will sell to

"People are afraid to discuss it," he said. "These discussions have to take place now, and we owe it to the next generation to allow them the chance to be the next generation of American farmers, not multinationals with ties from countries that we don't have great diplomatic relations with."

He finds other national discussions on farming more encouraging.

"I'm glad that farmers, to some extent, are starting to be looked at as the solution again to a lot of our biggest environmental issues and good nutrition," he said. "I'm concerned that our perception has lagged, and that influences by the larger industry have put farmers in somewhat of a no-win game. But I'm seeing that through regenerative agriculture, there are more farmers on the ground informing more of industry partners, and it seems like there is some effort to really tackle the soil loss and these water issues through good agricultural practice."

SOURCE: University of Nebraska, Institute of Agriculture and Natural Resources News ■

Non-GMO Project's GMO high-risk list: Potatoes

BY MELISSA WADDELL

any people are familiar with the most common GMO crops—corn, soy and canola—but did you know that some potatoes are also GMOs? GMO potatoes are so common that potatoes have been added to the Non-GMO Project's High-Risk List.

The High-Risk List identifies crops most likely to come from GMO sources. Non-GMO Project researchers look at criteria such as how a crop is used, how many acres are planted with it, and its potential to contaminate other crops to determine which crops are at a high risk of coming from GMOs.

The varieties of GMO potatoes which are currently available entered the market in 2015. By 2018, these spuds had sufficient presence in the US supply chain and were added to the Non-GMO Project's High-Risk List.

In 2015, the FDA approved J.R. Simplot's "Innate" White Russet GMO potato. The White Russet was engineered to reduce discoloration and to produce less acrylamide when cooked. The following year, the company added the Simplot "Innate" 2G Russet Burbank, which carried the same traits as the White Russet, plus protection from potato blight.

The White Russet and Russet Burbank were created through a genetic engineering technique called RNA interference, or RNAi. RNAi artificially interrupts genetic instructions from reaching their destination inside the cell, effectively "silencing" the expression of specific genes. The gene that causes discoloration when the potato is damaged has been silenced in GMO potatoes.

GMO potatoes are part of the U.S. food supply. Many grocery stores carry them in the produce section, bagged whole and raw. They might also be processed into other products, such as frozen foods and prepared products that contain potato or potato derivatives (e.g., potato starch, potato flour, dextrose, or potato alcohol).

Whole potatoes sold in grocery stores carry the name "White Russet" with language such as "reduced bruising" and "fewer black spots" displayed on their packaging. Because the USDA's List of Bioengineered (BE) Foods includes GMO potatoes, the bags must carry a disclosure, such as text, a website or phone number, or the BE logo.

J.R. Simplot has several more GMO potato varieties in development that are not yet available. At the same time, other biotechnology companies are pushing the boundaries of genetic engineering techniques—and potatoes. For example, Finally Foods is a start-up working on genetically modified potatoes that express dairy proteins.

SOURCE: The Non-GMO Project





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USDA greenlights plantings of GMO wheat but U.S. wheat buyers still don't want it

genetically engineered wheat developed by Argentina biotech company Bioceres Crop Solutions has been approved to be grown in the United States, according to the U.S. Department of Agriculture.

The approval clears the U.S. market for production of HB4 wheat, which is manipulated to tolerate drought. The approval may find support from some farmers but risks pushback from consumers and importers.

The U.S. is the world's fourth leading wheat producer and is the fourth country to allow production of the GMO HB4 wheat following Argentina, Brazil, and Paraguay.

Despite the approval, it will take years for Bioceres to complete additional steps, such as field trials, before the GMO wheat can be grown commercially in the U.S.

Many consumer groups oppose GMO wheat because, unlike GMO corn and soybeans, which are mostly processed into ingredients, it is used to make foods such as pasta and breads that consumers eat directly. There are health concerns about consuming GMO wheat.

Then there are concerns from international markets that buy U.S. wheat. Twenty years ago, Monsanto planned to introduce





GMO wheat that tolerates sprays of the controversial Roundup weed killer. But the reaction from wheat buyers in Asia and Europe was overwhelmingly negative, and Monsanto ditched their plans.

There are also concerns expressed by grain traders that GMO wheat could contaminate non-GMO wheat in bulk shipments.

"The GMO issue has declined into a sort of quiet stalemate in recent years," a German trader told Reuters. "But the refusal to accept GMOs in many importing regions, especially Europe and Asia, has not weakened."

SOURCE: Reuters

Pakistan shipment of organic rice reveals contaminated by GMOs

n late July, a shipment of organic basmati rice imported from Pakistan through the Netherlands was found to contain genetically modified rice. On August 2, the EU Rapid Alert System for Food and Feed (RASFF) issued a notification; the source of contamination was traced to government labs in Germany and Luxembourg.

The EU is a major export client for Pakistan's rice. The country has a zero-tolerance policy for GM rice, in line with EU regulations.

In June 2021, 500 tons of GM rice from India was discovered, causing Pakistan to ramp up its checks on rice shipments. After EU's rejection of rice shipments, it enforced strict rules on inbound and outbound rice consignments to appease the Rice Exporters Association of Pakistan (REAP). As early as 2018, GM rice concerns were reported by the Punjab government—leading to Pakistan blocking a shipment of Chinese rice seed. China noted that a 2,000-ton shipment of rice was rejected in Karachi due to GM presence.

(Source: Profit by Pakistan Today)

Robot weedkillers could help farmers reduce need for pesticides

The unassuming yellow (4 ft. x 2 ft.) battery-powered locomotive is a welcome sight to Clint Brauer, whose Kansas company Greenfield builds and programs the robots. The mobile chopper slices the weeds as it putters down rows of crops.

For Brauer, a former tech executive who returned home following his father's illness, the robots are problem solvers. They eliminate both weeds and agricultural dependence on dangerous chemicals harmful to the environment and human health. This season, 20 farmers are enrolled in the robotic service—the company's goal is to weed 5,000 acres this year.

Weeds, a perennial bane, steal moisture from crops and sometimes sunlight. Reliance on pesticides to kill them brings dangers: glyphosate has been linked to cancer and paraquat to Parkinson's disease, and atrazine is harmful to reproductive health.

Investment money is pouring in—Chipotle Mexican Grill invested in Greenfield, which has raised \$12 million. Aigen Robotics of North Dakota used part of its \$19 million investment to build robots powered by solar panels and operating autonomously. Fifty Aigen robots are currently battling sugar beet field weeds in the Midwest. Bayer is also showing an interest in robots.

But are robots a practical solution? Regenerative agriculture proponents say soil health, crop planting with ground cover, and non-disturbance of soil will work just as well for weed suppression. Wisconsin farmer Ryan Erisman says, "It's not our tools, our techniques that needs reworking. It is our failure to understand the system we are working in and our relationship to it."

SOURCE: The Guardian, Carey Gillam, U.S. Right to Know







Herbicide drift destroying organic crops on Central Illinois farms

ohn Williams, manager of the Urbana, IL organic farm Sola Gratia, noticed a reduction in yields this summer. On the twelve acres of vegetables surrounded by a neighborhood, he saw plant leaves that were deformed, producing unexpectedly low yields.

His director Traci Barkley reached out to other growers and university specialists and discovered the problem: weed-killer residue was drifting onto crop fields, damaging leaves and impacting crop outputs. "We're talking about, likely, an event where a product was applied a quarter-mile away or half-a-mile away," Barkley said.

The two primary chemicals responsible for the damage are 2,4-D and dicamba, which can transform from liquid to gas and drift for long distances. Other than planting trees around the farm to protect from drift, not much can be done.

"When you talk about specialty crop

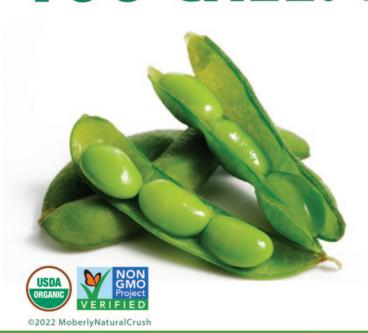


producers, you know, we don't even have crop insurance that applies to us right now," Barkley said. "So, we're hit pretty hard by things like this. And it's not just us—it's

orchards and other growers as well."

Sola Gratia expects to lose \$10,000 on their pepper crop alone this year. (SOURCE: *WCIA.com*) ■

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Pesticides are wiping out wild bee populations

ew research adds solid evidence to the suspicion that steep declines in America's wild bee populations stem in large part from pesticide use. Saving the crucial pollinators requires new approaches to managing pesky insects, say researchers at the University of Southern California Dornsife.

Native wild bees play a crucial ecological role, ensuring the survival and reproduction of countless plant species—including many agricultural crops—by spreading pollen as they forage for food. Unfortunately, their numbers seem to be declining, and despite experts suggesting multiple causes, the exact reason remains a mystery.

A new study published in *Nature Sustainability* sheds light on one potential cause: pesticide use. The research reveals a stark decline in the number of wild bee sightings, with appearances of some species dropping as much as 56% in areas of high pesticide use compared to areas with no pesticide use.

The study points to pesticides as a significant factor in wild bee decline and suggests that alternative pest control methods, such as those proposed by the U.S. Environmental Protection Agency, could reduce the damage.

Loss of wild bees could disrupt entire ecosystems, affecting not just plants but also the wildlife that depend on those plants for food and habitat. The multibillion-dollar agricultural industry could also suffer; wild bees, alongside honeybees, play a crucial role in pollinating three-quarters of food crops and nearly 90% of flowering plant species.

The researchers view their findings as compelling evidence that alternative pest control strategies, such as integrated pest management, are essential for conserving these crucial pollinators.

Integrated pest management involves controlling pests by using natural predators, modifying practices to reduce pest establishment, and using traps, barriers and other physical means, with pesticide use reserved as a last resort.

Center for Food Safety demands EPA ban PFAS chemicals

FAS (per- and polyfluoroalkyl substances) present in pesticides have been linked to severe harm to public health, wildlife, and pollinators. The Center for Food Safety submitted an "urgent" groundbreaking petition to the Environmental Protection Agency (EPA) to reverse course and contain the proliferation of PFAS.

While acknowledging PFAS as an urgent issue, the EPA has upheld hundreds of registrations of pesticide ingredients containing them. Moreover, it has continued to allow use of pesticide containers that leach PFAS chemicals into pesticide products.

PFAS are "forever chemicals"—persisting for years in the environment—that act as endocrine disruptors linked to cancers and

developmental issues. Not only are we exposed to them from crops uptaking PFAS from soil, they also can leach into ground-water, causing contamination of drinking water. The EPA did establish the first enforceable drinking water standard to protect communities from two PFAS chemicals.

Center for Food Safety attorney Sylvia Wu slammed the EPA for allowing "these forever chemicals to be used on our crops, public spaces, and backyard gardens."

The petition calls on the EPA to 1) ban PFAS in pesticides; 2) adopt a broad definition of PFAS reflecting current scientific understanding; 3) prohibit PFAS-containing containers for pesticide storage; 4) mandate reporting of PFAS contamination; and 5) prevent future contamination by mandating that pesticide manufacturers submit data prior to registration.

Endorsers of the petition include American Bird Conservancy, Beyond Pesticides, Maine Organic Farmers and Gardeners Association, Pesticide Action Network, and Northeast Organic Farming Association.



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