





FROM THE GROUND UP

SUMMER 2022



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Building Soil Productivity with TerraNu® Fertilizers Can Reduce Nitrogen Fertilizer Demands by 20% or More

With today's high fertilizer prices, the increased yield from TerraNu fertilizers delivers a return on investment of 2x above nutrient value through enhanced soil productivity. Farmers can realize the benefits of adopting regenerative farming practices through existing equipment.

Soil respiration research has shown that TerraNu's carbon matrix enhances biological activity which drives greater yields. Increased biological activity improves nutrient use efficiency through mineralization, making nutrients more plant available. 86% of multi-year, on-farm, and contracted research trials reported TerraNu Nutrient Technology™ increased yields on average 5-10 bushel/acre. Grain testing results confirm twice as much nitrogen is captured by the crop when applied through TerraNu.

TerraNu is a closed-loop fertilizer derived from excess dairy manure. The diversified carbon sources provide the ideal substrate for soil microbes while also adding organic matter. The end result is improved nutrient uptake and water efficiency in all conditions, but especially with sandier soils.

Midwestern BioAg's Director of Agronomy, Chris Kniffen, says, "TerraNu allows for more efficient recovery of nutrients and improved soil health, which are crucial with historically high input prices." "For decades, carbon management has been a core part of Midwestern BioAg's approach, enabling a 20%+ reduction in nitrogen applications for corn vs conventional practices. With TerraNu, we can enable the same approach for farmers across the country."

"Midwestern BioAg was founded 40 years ago to promote soil health as the path to better farming," says Gaji Balakaneshan, Chief Operating Officer of Midwestern BioAg. "TerraNu provides first-year returns to farmers while accelerating the soil building process in a way immediately accessible to farmers across the country."

TerraNu provides farmers with Soil Health in Every Granule™ in three convenient and easy-to-apply homogenized formulations. These formulations were designed to work as standalone fertilizer products or ways to improve other bulk blends or dry fertilizer products.

[TerraNu Calcium](#) is a drop-in replacement for pelletized gypsum, particularly effective for potatoes

[TerraNu Ignite](#) is designed to be placed in the rootzone as a starter fertilizer, such as in-furrow for corn and wheat or strip-tilled

[TerraNu MicroPack](#) is the best micronutrient program on the market, providing improved dispersion through homogenized granules

Climate-smart TerraNu fertilizers are sold domestically by Midwestern BioAg and its authorized dealers. Midwestern BioAg provides solutions for farmers to effectively and profitably transition to more sustainable, regenerative farming operations.

Learn more by visiting [TerraNu.info](https://www.terranu.info).





ENRICH YOUR SOIL HEALTH AND BOTTOM LINE

Don't miss your window to earn income with carbon credits!

- Have you added cover crops in the last 2 years or are you considering adding cover crops?
- Have you reduced tillage in the last 2 years or are you considering reducing tillage?

If yes, learn how you can get paid for these soil-enhancing practice changes.

Email Monica Gray to learn more (Monica.Gray@MidwesternBioAg.com).

Why Carbon, Why now?

Carbon markets are projected to be a \$43 billion industry. We want growers to take home more than \$30 billion of that value.

Carbon programs started in the early 2000s, and agricultural carbon markets have gained increasing support over time. Now, the demand is skyrocketing with more and more companies making pledges to reduce global carbon emissions.

Join Carbon By Indigo today and unlock the profitability that comes from carbon farming practices. The time to act is now.

How do you generate carbon credits?

You can generate carbon credits by adopting new regenerative farming practices, intensifying current regenerative practices, or both. Our agronomic experts can help you develop a carbon farming plan tailored to your operation free of charge.

Qualifying practices include:

- Adding cover crops
- Diversifying crop rotation
- Reducing tillage
- Improving nitrogen management

How much can farmers earn?

Growers receive 75% or more of the credit sale price* and participated in market upside as the price increase. When we win, you win. We also provide a minimum price floor of \$15 per credit to give even more peace of mind.

Prices have been increasing rapidly for Indigo's high-quality, registry-issued carbon credits, and we expect growers to receive significantly more than this minimum. Based on market projections, you could earn as much as \$30 or more per credit with the 2022 carbon crop. By starting now, you can maximize your carbon credit production when prices are even higher.

FROM THE DESK OF GARY ZIMMER

Dear farmer or agribusiness person,

So far so good this season at least for us in our area. Having recently been dry and now getting rain, this is an ideal spring into summer for me. Plant in dust and in the fall the bins will bust. Wet springs and dry summers just don't work! But you have no control right... I'm not so sure about that. You can build soil resilience, improve soil biology, and change soil structure. You can provide plant diversity and mineral balance. You can use better quality fertilizers (that's where Midwestern BioAg comes in), and make sure every year you supply soluble calcium, sulfur, and boron. Providing carbon with your fertilizers and adding compost is also a good idea. Add biology or use biology stimulants to feed the biology and keep living roots in the soil. These are all good practices.

Using all, or some, of these practices, will take you a long way in dealing with our extreme weather. Adding Rye to your rotation can certainly do that too. What else can you plant after corn/soybean harvest in the upper Midwest? When adding a practice like rye, you have to learn how to manage it. Change always requires knowledge if you want success.

I'm involved with a group called [Rye Revival](#) - it's the plant that's here to save the planet. It can be used for feed. It has some real benefits for livestock production and health when adding 15% to their grain diet. Food for us is another great use for rye. At 15% of our grain diets, it not only adds flavor but has many of the same health benefits. Cover crops are another great

use for rye. It's easy to grow, has massive root systems, provides living roots in the soil over winter, sequesters carbon and greatly improves soil structure. Rye also works great for the distilleries as they are making better, healthier products. The trouble is there aren't enough markets yet, it's not insurable and there is no profit in growing it to harvest. I just heard a new crop in the Dakotas was selling for \$8.50 a bushel conventional.

Our farm is organic and its one-year rye with clover blend underseeded (frost seeding clovers early spring) and one-year corn, we are lucky to get 50 bushels of rye. We are limited on nitrogen following corn and yet our rye is over 5 feet tall and lodging this year. We want the clover more than the rye so we plant thin so our soils start building organic matter and nitrogen from all the clover but still can't stop the rye from growing and lodging. We sure could use something to keep it shorter, planting late like the end of November and thinner does help but doesn't give you 100 bushels of rye to harvest.

If you grow rye (what else can you plant in late November?): harvest the grain flail mow the straw and early clover growth, let the clover grow again, mow early September, spread manure/compost if available, deep rip if needed, let it go winter dormant, let it regrow in the spring and when it's about a foot tall shallow incorporate and plant corn. That's three clover crops from one planting, plus all the straw residues the soils will change, we have measured 300 units of nitrogen just from the above-ground clover.



If you want to grow 200+ bushels of corn organically, you have to feed it. They say only 40% of the nitrogen is available that first year but that depends upon digestibility. Young succulent clover has over 50% soluble N and the other 60% is not lost. That's why our rye is so dark green, tall, and lodging. You do have to learn how to manage this system and have the right tools. This is not just an organic way of farming but a low-input profitable way. If you do this, do you still need to buy all the technology to protect your crop? Do you need to buy all the fungicides, herbicides, insecticides, the nitrogen? Just remember you have to earn the right not to buy all those inputs and those inputs never improve your soil or build more resilience.

One-year corn and one-year rye cover crops also allow you to take on more acres as the rye and corn don't compete for work and spread-out risk. My son, Nick, and another worker are now farming 1600 acres and believe they can handle 2000. We want to show you our system and the economics of farming this way. So, on Wednesday, August 24th we are hosting a field day with the [OGrain](#) group from UW. They would like you to register as they are providing lunch.

Field Day | Wednesday, August 24th

9:30 am to 3:00 pm

6679 State Hwy 23, Spring Green, WI

Register: <https://ograin.cals.wisc.edu/ograin-events/2022-ograin-field-days/>

Or contact Marketing@MidwesternBioAg.com for details.

Stations will be set up for small group learning. The topics consist of UW Research; Designer Compost/Midwestern BioAg carbon-based fertilizers; Testing both the soil and the plant with guest, David Knaus, of Apical Labs in Oregon; The Savanna Institute demonstrating permanent agriculture (they have purchased four farms in our area, and we have elderberries and blueberries growing on our farm); Cover crops and growing corn and growing soils - the cost and profits of our farming system; and Rye Revival and all its future potential.

If you want more training and in-depth learning on biological farming on Monday and Tuesday, August 22-23, join us for this intensive training hosted by [ACRES USA](#). The focus will be on utilizing testing to make management decisions along with our in-field studies.

Learn more about the ACRES On-Farm Intensive [here](#).

I hope you can attend one or both events. Have a great summer.

GFZ

LET THE COWS DECIDE - FREE CHOICE MINERAL PROGRAM

Bailey Farrell, Nutrition Specialist

Getting the perfectly balanced diet for all your herds' needs is not an easy thing to do. They need the right amount of forages, grains, proteins, minerals and salts. One part of the diet that might get overlooked due to its small size is minerals. Trace minerals are essential to the diet. They play a critical role in livestock's metabolic functions which include supporting growth and development, immunity and reproductive performance. Balancing these minerals is vital for livestock's well-being.

How much mineral does each cow need? Just let the animal tell you. Cattle are great self-regulators and they usually know about how much to consume in order to balance the minerals in their body. That's why I suggest our free choice program. Our program allows the livestock to choose the nutrients they need and replenish what might be lacking in their feeds. Our [free choice minerals](#) are essential to keeping a balanced diet for all of the stages in the livestock's life.

Choose between the six free choice blends that Midwestern BioAg offers.

- **"O" Free Choice Buffer:** a buffer source as an alternative or an addition to sodium carbonate
- **"O" SK Blend:** a free choice package designed to provide supplemental salt and kelp to livestock
- **"O" Free Choice Mineral:** a mineral package designed to supplement the nutritional needs of livestock on a free choice basis
- **"O" Grazing Special:** a free choice mineral package designed to supplement the nutritional need of grazing dairy cattle
- **Redmond Salt with Garlic:** A natural trace mineral salt with garlic for natural fly control
- **Thorvin Kelp:** Icelandic kelp with high levels of naturally chelated, bio-available nutrients.

ABOUT BAILEY

Bailey graduated from the University of Wisconsin - River Falls with a Bachelor's Degree in Animal Science. As a Nutrition Specialist, she considers the varied nutritional needs of different species and then formulates a balanced diet. She also formulates custom mineral blends by supplementing minerals that are deficient in the feedstuffs. Please reach out if you have any nutrition questions or if you need a formulated ration and/or a custom mineral blend for your herd. Bailey will work with you to ensure your livestock feeding program is balanced and complete.

Contact Bailey at nutrition@midwesternbioag.com.



Get Social with us this summer!

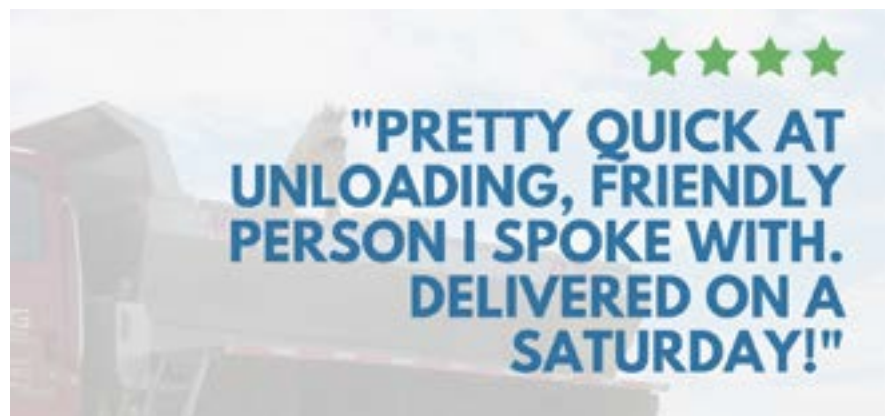
Let us know how your fields are doing. Post a picture on Facebook, Twitter or LinkedIn. Be sure to tag us @MidwesternBioAg and use #BioAgWay.



How are we doing?

Leave us a review!

Find us on Facebook and Google and let us know about your experience.



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