PrairieFood

PrairieFood vs. Synthetics

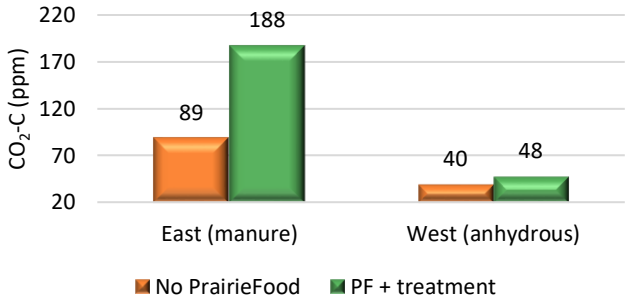
THE SCIENCE IS IN

PrairieFood Works With Nature

PrairieFood feeds a buffet of microcarbons to all 55,000 species of soil organisms. When well fed, microbes in the soil become more active and reproduce. The connection between the plant and soil is repaired. Plants produce more carbon compounds through photosynthesis to feed soil biology and soil microbes reciprocate by liberating soil nutrients for plants. This symbiotic relationship between plants and soil continues, building soil organic matter.

Synthetic fertilizers are designed to feed plants directly, bypassing natural nutrient cycles. Synthetics have shown to deplete soil organic matter and decrease microbial activity. Continued use damages soil, creating systems that become reliant on chemicals and synthetic fertilizers.

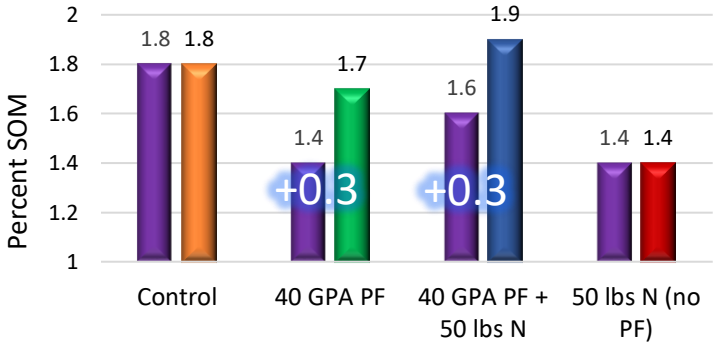
Microbial Activity



Microbial activity (i.e., soil respiration) is an indicator of soil ecosystem function; higher values typically equate to superior soil function. PrairieFood enhanced microbial activity in both the East and West fields of this SW Kansas triticale field, but anhydrous ammonia applied on the West field suppressed microbial activity, indicating a toxic effect.

Data Source: Regen Ag Lab

1-Month Change in Soil Organic Matter



A 2021 greenhouse study demonstrates how PrairieFood increases SOM in a short period of rapid corn growth (V2, left bar to V5, right bar) compared to the untreated control (far left set) and synthetic N alone (far right set).

Data Source: Regen Ag Lab

PrairieFood Builds Soil Organic Matter

PrairieFood restores the connection between soil and plants, enhancing photosynthesis. As a result, plants supply more carbon-rich liquid food to soil microbes and soil microbes liberate more nutrients to plants. As this atmosphere-to-soil carbon pump intensifies, soil organic matter accumulates.

Synthetic fertilizers take a short cut through nutrient cycles to feed plants more directly. Synthetics depress microbial activity and cause depletion of organic carbon. Continued use damages the soil ecosystem, creating systems reliant on chemicals and synthetic fertilizers.

PrairieFood is Good for Our Water

PrairieFood builds soil organic matter, which is full of organic carbon – a big sponge for water. High SOM, healthy soils have better soil aggregation, providing the right mix of pore spaces and channels to deliver enhanced infiltration for greater water storage. These factors provide an ideal home for soil flora and fauna and the plants we grow.

Overuse of synthetic fertilizers and chemicals causes depletion of SOM, reducing soil's capacity to capture and store water and hold on to nutrients. This loss of organic glues that hold soil aggregates together leads to greater rates of erosion, declines in fertility, and a substantial loss in a soil's water holding capacity. To make matters worse, these factors provide imperfect living conditions for biology.

For every 1% increase in SOM, growers can capture about an extra inch of rainfall! Healthy soil also stores water longer rather than allowing it to evaporate rapidly, translating into higher yields and lower irrigation costs.

Image Source: USDA

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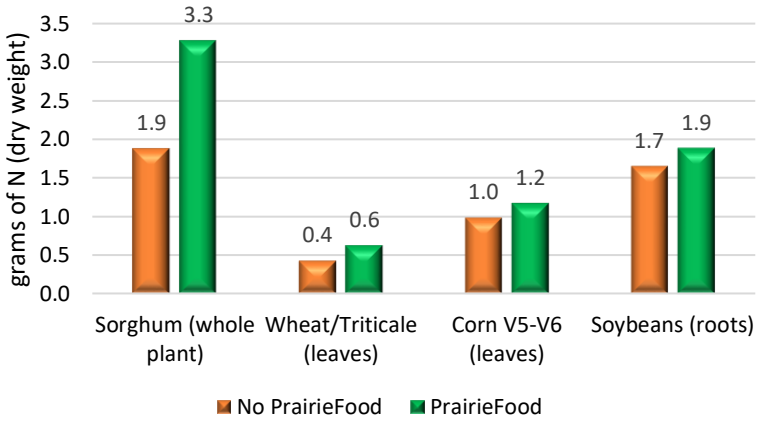
PrairieFood Enhances Nutrient Density

PrairieFood feeds soil microbes, which transform nutrients into plant-available forms. Plants can signal soil for nutrients; a well-functioning soil responds by liberating and transporting requested nutrients to the plant's roots, resulting in more nutrient-dense crops.

If soil ecology is unbalanced or depleted through use of synthetics or other harmful practices, nutrient deficiencies in plants often occur since the soils are missing microbes necessary for transforming or transporting soil nutrients. So farmers then must purchase more inputs to try to solve this issue.

Nitrogen content in biomass



2021 Summary data of several crop types show that use of PrairieFood resulted in higher nutrient density, a reflection of improved soil function. Nitrogen is highlighted here, since it is a principle component of protein. Higher protein is desirable among producers, as it provides higher feed quality. Data Source: Regen Ag Lab

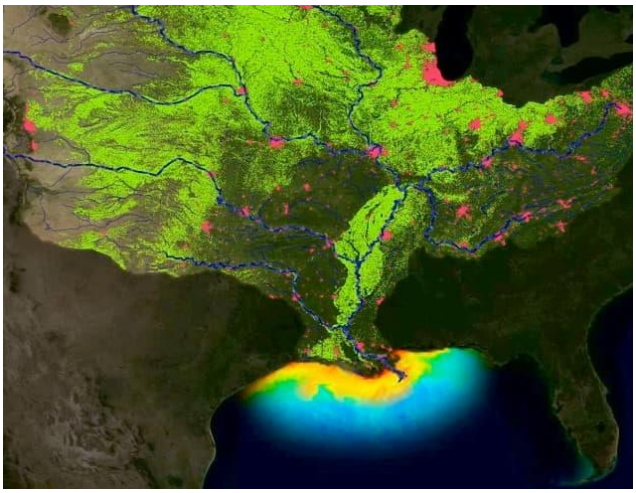


Image Source: NOAA

PrairieFood is Environmentally Prudent

Our microcarbon-rich slurry is comprised of waste biomasses such as feedlot manure and spent distillers grains. PrairieFood is not volatile, and it isn't mobile in water, so it stays with the soil that it is meant to feed. PrairieFood only has positive impacts on plant and soil – never harmful.

Synthetic chemicals are mined and processed or produced using energy-intensive methods. These substances must then be transported to US farms from far away places such as China and Russia. Many synthetic fertilizers evaporate into the atmosphere or are mobilized in water, polluting both surface waters and ground water as evidenced by the Dead Zone in the Gulf of Mexico caused by fertilizer runoff.

PrairieFood Has Stable, Affordable Pricing

Since our first sale in 2019, PrairieFood has not changed its price. In contrast to synthetics, PrairieFood is not tied to crude oil. PrairieFood is comprised of readily available feedstocks of manure and other biomasses, keeping our supply chains stable and our prices affordable.

Besides N fertilizer price volatility and recent surging, phosphate fertilizers are also at a record or near-record price, partly because about one-third of phosphates come from China, which has essentially banned P exports through 2022.

Price volatility related to crude oil prices and supply issues have created a perfect storm to raise the prices of synthetic fertilizers to historic highs. Data Source: DTN via Farm Policy News – U of IL

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