

*Healthy soil means
Healthy growth*



Regenerate the Soil

Harvest Healthy Crops

**Maximize Results &
Increase Biomass**

Reduce Toxins & Fertilizer

**Increase Crop Growth
& Quality**



BACK TO NATURE
btn-global.com

Maximizing and sustaining farm yields using

Manna-Gro



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MANNA-GRO

Providing a Helping Hand in Sustainable Agriculture



Back To Nature®

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THE CHALLENGES

WHAT WE ARE DOING IS NOT WORKING

For many agricultural producers, the solution to declining crop production has been to increase the use of fertilizer. Unfortunately, according to the USDA, food quality and quantity have declined despite this increase in nutrient application through fertilizers. Instead, what has risen sharply are the documented cascading and harmful effects of over-fertilization: nutrient runoff pollutes waterways and groundwater and degrades farmland.

But organic producers already know this and understand that the foundation for any successful and nutrient rich crop is healthy, fertile soil. Customers are also catching on. The organic sector grew to \$47 billion in 2016 and continues to grow about 2.5 percent annually, demonstrating an increased demand for organic products as well as opportunities for growth.

However, as demand increases so must supply. In USDA organic surveys, producers report that achieving higher yields is one of the most difficult aspects of organic production. Production challenges can be grouped into two major categories:

1. Barriers to transition for those interested in entering this dynamic industry and production constraints for those who are already certified. Barriers to transition include but are not limited to the lack of effective tools to manage diseases, pests, weeds, and nutrients; the development of new markets; and

2. Availability of certified organic feedstuffs. Certified organic farmers have identified soil health, nutrients, diseases, pests and weeds management as their top challenges.

Add in the additional labor costs, higher costs of organic inputs, increased crop losses, and longer waits for harvest and growing organically can be a challenge.

We understand these unique challenges that producers who grow organically face and have developed our products to address these challenges and allow the organic producer to maximize yields, reduce inputs and reduce losses.

Facing these formidable challenges, more and more communities across the world are talking about sustainable agriculture and where we can put it into practice. Implementing methods and ways to meet the world's present food and textile needs, without

compromising the ability for current or future generations is crucial. Many dialogues involve topics such as [topsoil regeneration](#), increasing [biodiversity](#), improving the [water cycle](#), enhancing [ecosystem services](#), supporting [biosequestration](#), increasing [resilience to climate change](#), and strengthening the health and vitality of farm soil.

SOIL, NOT DIRT

Fertile soil is thriving with living organisms and depends upon a sustainable management system to keep this fertility in balance. Thanks to advances in technology, we know that there can be 100 million to 1 billion bacteria in a single teaspoon of soil and several to several hundred yards of fungi.

These microorganisms are the foundation and are fundamental to any productive crop. We now understand, like never before, why they are there and the role that they play. They just might save the world.

We are continuing to develop solutions to address the growing challenges in agriculture through the science of microorganisms.

OUR SOLUTION

THERE IS A BETTER WAY

Product

Manna-Gro contains pH-balanced humate and four (4) strains of Bacillus microbes proven for complementary interaction to facilitate environmentally safe and organic biological, nutrient, and physical functions for optimal soil conditioning, maximum health of roots system, and increased quality and yield of all crops and plants while reducing reliance on petrochemical fertilizers.

Simply put, BTN seeks to deliver US-manufactured product and services that will help many of our farmers, ranchers, growers, and anyone in the business of growing and maintaining plants whether they are food crops, fruit trees, forage grass and all things with roots that depend on healthier and robust soil and ecosystem. Our products are eco-friendly because we are replenishing what is lacking in the soil for optimal soil health and balance to create a soil-environment that plants simply love to thrive in.

Additionally, Manna-Gro has demonstrated the ability to bio-remediate many soil contaminants. The microorganisms contained in Manna-Gro® products are capable of

using chemical contaminants as a metabolic energy source, rendering many contaminants harmless or less toxic.

Manna-Gro is currently used in Eastern, Midwestern, Southern, and Western regions of the United States including Hawaii as well in several countries including Vietnam, Canada, Mexico, and South Korea for crop production, land reclamation, and research and development. Overwhelmingly, the results have demonstrated how the technology of Manna-Gro benefits the user, the plant, the soil, and the environment.

Managed Services

Agriculture as a practice is teamwork. BTN has been organized to provide a set of services. BTN Managed Services – product improvement, data, best practice, training, and consulting. We want to ensure that BTN is with you all the way from start to harvest and do it all over again with cutting edge technology and constant innovation.

HOW IT WORKS

Crops will not grow without microorganisms.

There are billions to hundreds of billions of soil micro-organisms in a handful of a healthy soil. These bacteria and fungi form symbiotic relationships with plant roots and cycle nutrients and water to plants. Reintroducing and maintaining the right bacteria and fungi in problem and depleted soils increases soil fertility and crop productivity while reducing the environmental impact of overfertilization.

Manna-Gro is a blend of soil-borne microorganisms selected for their abilities to achieve higher yielding, higher quality plants and grasses by restoring and maintaining soil health and fertility. Products containing Manna-Gro® work within the root zone of the plant. Products containing Manna-Gro® are all natural, organically based, free from genetically modified organisms, and have some of the highest microbial concentrations on the market. The microorganisms are suspended in liquid humates and have been functionally characterized, identified, and tested using a broad spectrum of crops.

By improving soil health, Manna-Gro has demonstrated the ability to significantly reduce agricultural inputs while simultaneously improving crop quality and yield.

INNOVATION IN ACTION

While the idea of microbial inoculants for stimulating crop production is not new, the careful and deliberate design of a formulation that contains multiple, naturally occurring phylogenetic groups of organisms with complementary functionalities is significant. Putting these microorganisms together in a manner in which they retain viability over a long period of time at ambient temperature is innovation at its best.

BENEFITS OF MANNA-GRO

INCREASES YIELDS AND REDUCES FERTILIZER DEMANDS

Products containing Manna-Gro can help overcome the dependency on expensive organically-based fertilizers while maximizing crop production. Over fertilization destroys the health of the soil, damaging its ability to hold water, and encourages the run-off of nutrient rich top soil and applied fertilizers. Even organic fertilizers, such as chicken manure, are prone to wash off in heavy rains and can negatively impact the environment.

Products containing Manna-Gro have demonstrated the ability to significantly reduce a standard fertilizer program from 15 to 60 percent, depending on the crop, soil condition and farm management program, while still achieving maximum crop yields. In many trials involving forage grasses, fertilizer rates have been reduced dramatically, often with better results than 100 percent fertilizer.

INCREASES WATER EFFICIENCY BY CREATING HEALTHIER SOIL

Soil compaction is a worldwide problem that is responsible for 25 to 50 percent yield reductions in some regions of the United States and Europe. According to the United States Department of Agriculture, Natural Resources Conservation Service (NRCS), "On-farm losses through land compaction in the USA have been estimated at 1.2 billion dollars."

Good soil structure or tilth is fundamental for the soil's ability to "hold" water. Heavily compacted soils have a reduced ability for water infiltration and drainage and contributes to land degradation, the eutrophication of surface water, and the contamination of ground water. Compacted soil forces the roots to exert more energy or force to penetrate the compacted layer to reach the vital nutrients and minerals, leading to reduced crop production and increased crop losses.

Farmers understand that water challenges will continue to increase and that irrigating crops will become more regulated and expensive on both ends of production—as an

input and run-off.

REDUCES CROP LOSSES BY PRODUCING HEALTHIER PLANTS

The best defense is a good offense. Healthier plants are naturally more resistant to many environmental stresses like extreme temperatures, transplant, disease, and drought. When growing organically, eliminating chemical inputs is a must, and reducing expensive organic inputs is always the goal. Many times however, it takes multiple applications of organic inputs to protect the crop—costing valuable time and money. Often, crop losses are still high.

Products containing Manna-Gro have demonstrated the ability to improve the health of a plant or grass as measured by its brix, increasing the plants ability to survive. High brix is commonly associated with higher sugar content. Sugar is the fundamental building block plants combine with soil minerals to make amino acids, proteins, hormones, and other plant necessities. High brix crops supply more trace minerals such as copper, iron, and manganese. High brix also reduces plants' appeal to pests that feed on them. Due to greater mineral density and the inclusion of heavier trace minerals, high brix crops weigh more per unit than lower quality, low brix food. This adds up to a sweeter tasting, more mineral nutritious feed with lower nitrates and water content, and better storage attributes.