Stop Treating Your Soil Like Dirt!



Pro-Soil Ag Solutions P.O. Box 1537 Hawkins, TX 75765

The Benefits of Foliar Feeding with Vital Boost

There is little doubt that foliar feeding has of foliar feeding, we at Pro-Soil believe gained popularity in agriculture over the past decade. Tissue and petiole sampling has given us a better understanding of nutrient deficiencies at various stages of plant growth. But, are we indeed doing everything we can to insure the highest energy output and uptake of nutrients for the alleged deficit by just adding some fertility and trace minerals?

that by adding our energy sources and enzymatic processes that our VITAL BOOST foliar feed enters an elite status. By applying our program you can enhance not only the crop vigor at the time of foliar feeding, but can also benefit the vital processes that occur below ground, providing stress reduction benefits with our High Energy, bio-stimulant at a crucial growth stage of a plants development. Our VITAL BOOST foliar

feed product is comprised of over 80 individual ingredients, these components combined are designed to create a synergistic effect that positively impact the soil and the plant. No single ingredient alone can comprise of a complete biological program. Together they all work in harmony to insure the greatest maximum benefits to provide your farm with a complete biological foundation. Add Vital Boost to your crop program in 2014 and watch the results.

While we certainly believe in the benefits

2013 Crop results using—Vital Boost Foliar Feed









Our Most Important Asset—The Soil

n order to classify anything as an asset it must have value and contribute to your overall success. Your SOIL is scientifically proven to be the most valuable asset that you posses on your farm. Without productive soil to raise a crop, your farm value diminishes greatly and your operating cost increase dramatically making it more difficult to stay profitable.

With an asset this important, proper management is essential. Just like all living things, however, Soil can degrade and even die in extreme cases, losing the biological properties that sustain life, due to pollution, acidification or the absence of humus, which is the top layer that sustains fertility. In the recent Furrow Magazine they shared some interesting facts about soils.

Every acre of soil contains microorganisms or "underground Livestock" by the billions. The total weight of these underground animals could reach a couple of tons per acre. Each of these are responsible for

Soil Fertility Facts:

"We're also finding that applied phosphorus contributes to decline of Mycorrhizal fungi. Only about 20% of what's applied as fertilizer ends up in the plant-the rest is bound up in the soil..."

-Wendy Taheri, USDA Microbiologist

"Sugars made by plants are released from their roots into the soil and traded to soil microbes for nutrients to support plant growth. There is a proven symbiotic relationship between microbes and plants."

Health

Products -2013.

Soi Matters



Soybeans treated with Pro-Soil

vital processes that occur in healthy soils.

The world under the soil surface maybe unfamiliar, but many farmers are beginning to harness the power of these underground livestock. Agriculture is facing economic and environmental challenges," says Francis Yeatman, " We are entering a new era where we have to farm smart, and the changes we're making are based mainly on soil

biology. We have found that working with soil ecology, if we make sure that we provide a food source, we can affect the number of bacteria and fungi. All they are waiting for is the right food source, and the number of bacteria and beneficial fungi such as mycorrhizae just take off.'

"Soil organisms affect soil fertility and productivity. Biological processes in the soil are responsible for about 75% of the available nitrogen and 65% of the available phosphorus in the soil. In fact soil fertility is largely dependent on the processing of various organic residues or soil organic matter through the soil food web". Says Jill Claperton, a soil health consultant and scientist.

"Biology in the soil may have been widely ignored for years, but we are finding ways to mineralize vast amounts of phosphorus that are locked up in soils". Says Yeatman. "When you see farmers around the world cutting costs by boosting their soil biology, it gets very exciting. —Furrow Magazine—2013

-NRCS - Farming in the 21st century, A practical approach to improve Soil

"Phosphorus is an element that is never found in a free state. Soil microbes and fungi are responsible for making phosphate available to plants. Even with great phosphate reserves if the soil is not biologically active there will be little or no phosphate available to plants."

-The Ideal Soil: A handbook for the New Agriculture

"It is scientifically proven fact that mychorrizal fungi form a symbiotic relationship with plants to convert and bring nutrients to the root zone."







Soil Tests—More than just Fertility **Recommendations?**

Taking and understanding your soil tests is crucial to building a balanced program that will maximize results and give success on your farm. Because soil components play such a crucial role to conversion of applied nutrients, if we look only at the fertility recommendations we miss valuable information that is so important to identify limiting factors for our crops. With so many variables that go into raising a successful crop, anything we can do to remove the guesswork in such a complex program the better. Consistent Soil testing is a start. Soil tests should be taken at least every 3 yrs. Petiole tests are recommended to determine nutrient deficiencies throughout the growing season.

Key Components in a Soil Test:

• C.E.C— is a measure of soil holding capacity

Montrose Bean Variety – Treated yielded +5.81 sacks better than Control.

- pH-measure of acidity or alkalinity in your soil-6.3-7.3 is ideal
- Organic Matter—higher the better. O.M. will contribute to overall soil health and biological activity in soil.
- % Base Saturation—shows balance of Cation elements. Ca to Mg ratio is very important.
- Micro Nutrients—these Trace elements are required in smaller amounts Our programs function to stimulate and but crucial for crops overall health.

The Mighty Earthworm

Of all the members of the soil food web, earthworms need the least introduction.

Earthworms dramatically alter soil structure, water movement, nutrient dynamics and plant growth. Their presence is usually an indicator of a healthy system. Earthworms need. Microbes face an uphill battle perform several beneficial functions:

- Stimulate microbial activity
- Mix and Aggregate soil
- Naturally aerate soils
- Improve water-holding capacity
- Provide channels for root growth
- Bury and shed plant residue
- Earthworm castings contain increased amounts of all plant nutrients.

Earthworm populations are highly variable 10,000 to 70,000 per 1000 sq\ ft. Microbes and Earthworms produce their weight in Humus everyday. Due to microbes high pH tolerance, they begin working to help stabilize pH so that the earthworm population may thrive. This balance in pH also increases uptake of soil nutrients by roots. The most nutritionally charged soils in the world are produced by microbes and earthworms.

Our Approach to Native Soil Biology

Our proprietary biological products create the greatest impact on soil microbes and Earthworms. Many Farm practices disrupt soil balance and as such Fungi and earthworms are effected and are diminished in numbers. Balance in soil organisms are as critical to productive soil as balance of Macro and Micronutrients are to plant health.

feed NATIVE soil microbes rather than using live cultures. Science has shown this to be the most effective and natural approach. By properly stimulating that which is already in your soil, and more importantly adapted to your soil conditions, faster transformation can occur. Combined with a high energy food source, Microbial populations increase in both numbers and activity level dramatically. Higher populations and increased activity levels of those populations are the driving force we and require proper management just as our crops do. Doesn't it make sense, understanding the vital processes soil biology are responsible for, that we do something pro-biotic to create and foster a relationship that allows our microorganisms to flourish in our soils. Just as plants require food (N,P,K) Soil Microbes require a food source also.

What the Experts are Saying about the Important Roles of Biologicals:

s a Company, we believe that every Acre of farmed ground will benefit by incorporating a biological program into its fertility Program. This due to the fact that the microbial life in the soil is necessary to convert applied fertilizers and other forms of nutrients into available plant food that the crops can use. We have taught growers for years how to incorporate these programs onto their farms, with tremendous success. As the industry continues to see the benefits, many experts are dedicating more and more study to this subject. Over the past couple years, you are seeing entire editions of magazines dedicated to discussing the benefits of biologicals. The following are just a few excerpts from major publications on the importance of addressing your soil biology and soil health, and what independent experts are sharing:

"Most growers think they apply fertilizer to feed the crop, but 60% of fertilizer never reaches the plant. It is the complex interactions between soil microbes and the crop that feed the plant."

-Building Better Soils, The Furrow, February 2013

"Soil quality pays off in many ways, but perhaps none impacts the bottom line more dramatically than the reduction in input costs. In healthy soil, nutrients are cycled more efficiently by the enhanced biological activity, and because of increased root growth and moisture availability, plants are healthier and better able to compete with weeds, pests, and diseases." -Manage Nutrients Efficiently. Successful Farming Magazine, September 2011

and health of the soil."

yielding plants"



"In the top 6 inches of soil, every 1% organic matter contains 25 lbs Nitrogen, 10-12 lbs Phosphorus and Pottasium."

"There are various types of microbes in the soil that have different roles and functions. Bacteria, Fungi, and Algae supply nutrients to roots through symbiotic processes. Put them together with earthworms and their underground activities determine the organic matter

-Microbial Mysteries, The Progressive Farmer, February 2011

"Root systems that are more robust can more efficiently utilize moisture and nutrients to produce healthier and higher

-Roots: The Key to Unlocking Future Crop Productivity, Ag Weekly, May 2011

"Soil Microbes release crop nutrients that are strongly locked up. Without microbes, vital soil nutrients like phosphorus remain present but unavailable to your crop."

-Profit from Soil Organisms, Corn and Soybean Digest, January 2013

"Emphasizing soil health is one of the easiest and most effective ways for farmers to increase crop productivity and profitability."

-Healthy Soils Have Positive Impact on Crop Productivity, Ag Weekly, October 2013

"Most growers only focus on the physical and chemical aspects of farming, but until they include the biological component, yields and profitability will be limited." —On the Mend, Farm Journal, March 2013

▼ 24 earthworms pulled from single Corn Root. 4th yr.w treated with Pro-Soil.

