

Stop Treating Your Soil Like Dirt!



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online (articles, literature,
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The Soil is farmings “New Frontier”. Science and Technology are allowing us to develop Scientifically Engineered Nutrition that increases soil energy and creates an environment where microbes can feed and reproduce on a more rapid basis.

▼ **Southern Idaho—Pro-Soil treated side had much better root mass and considerably less tip back on ears.**



▼ **Treated soybeans with over 30 inch roots**



▼ **Central Indiana, massive nitrogen nodules on soybeans.**



Soil Matters

GROUND BREAKING NEWS ON BELOW GROUND MANAGEMENT

SPRING 2015

Pro-Soil to be featured on RFD-TV

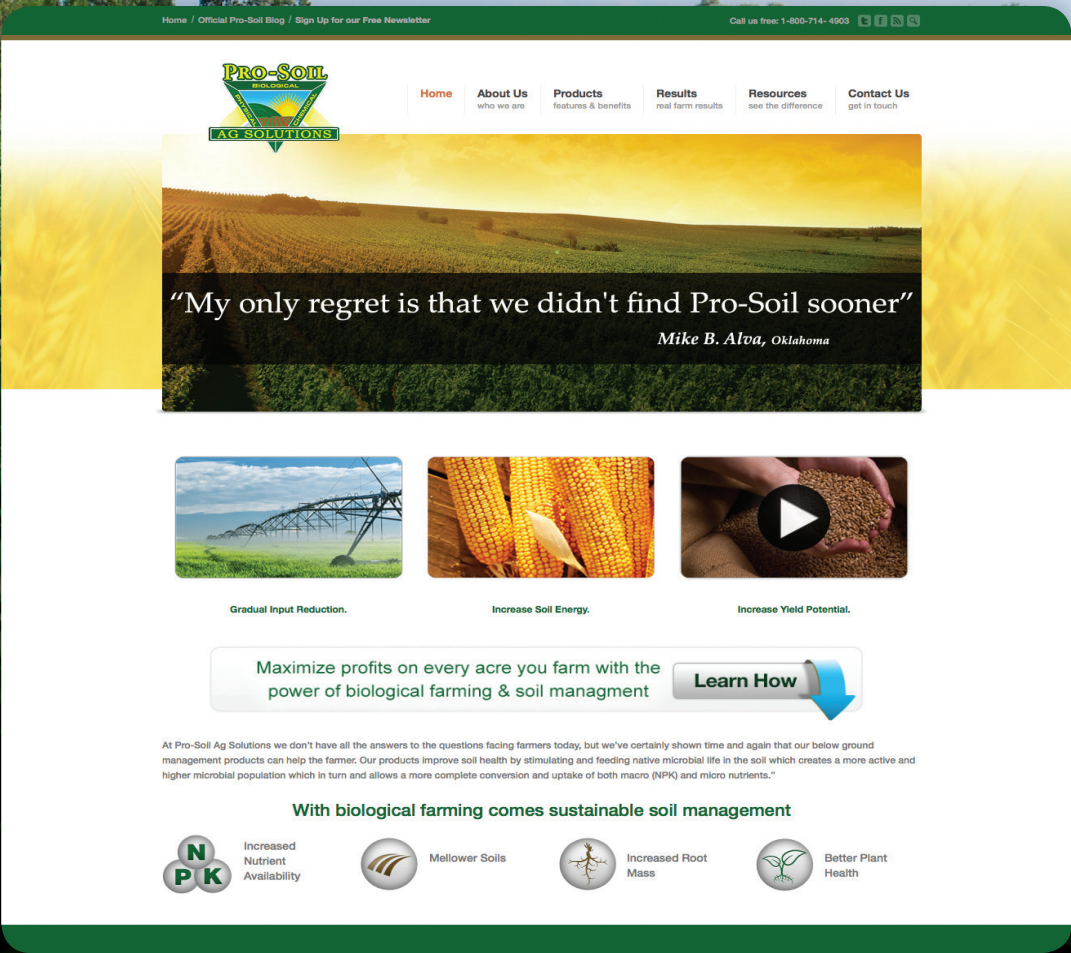


The “American Farmer” with host Charlie Cowan will be airing a special 8 minute segment on Pro-Soil. This will be a very informative and educational piece you don’t want to miss.

RFD-TV “The American Farmer”
Date and Time: Tuesday,
April 21st at 8:30 a.m. EST,
7:30 a.m. CST.

Pro-Soil website updates

Pro-Soil will be updating and adding quite a bit of new information to the website which will be fully updated around May 15th. You'll see many articles and information about Below Ground Management, as well as photos and videos from out in the field. At Pro-Soil we are committed to education and providing the latest info on soil biology as it pertains to agriculture





▲ Mager Bros. Farm in central Indiana. Excellent top fill on soybeans.



▲ Carlisle, PA. massive soybean roots at Triple L Farms. 5th year on Pro Soil



▲ James Walden in So. Indiana with over 200 pods



▲ Josh Collins in So. Indiana with treated plants averaging over 100 pods



▲ Carlisle, PA. Prolific earthworm castings on treated ground



▲ Treated ears 18-20 round by 52 long

PSM's (Phosphate Solubilizing Microbes)—The Key to your Phosphate Availability

Soil Biological activity, including soil enzymatic actions, is related to various soil factors, including pH, organic matter, and soil texture (C.E.C.). Enzymes from soil microorganisms are crucial, and despite their relatively low amounts, play an essential role in the cycling and availability of nutrients, with regards to C, N, P and S. Nutrient cycling is fundamental not only for crop production, but for the long term functioning of soil ecosystems as well. In addition, soil microbial activities, including soil respiration and microbial populations, have been proven to be a powerful indicator of overall soil quality and health.

Increased biological activity and soil microbial action have shown to have a positive correlation with improved soil

fertility levels as indicated by higher crop yields and quality. A higher concentration of soil available nutrients allows improved plant nutrient uptake and the opportunity to maximize yields.

There are a couple of strains of Heterotrophic (require food for energy) Bacteria and Fungi that are known to have the ability to solubilize currently unavailable phosphate to plant available phosphorus. Some of these bacterial strains of microbes are: Pseudomonas Striata, Bacillus Polymyxa, and Enterobacter, and some of the fungal strains are: Aspergillus Awamori and Penicillium Digitatum. These microbes have been identified and classified as Phosphate Solubilizing Microbes, also known as PSM's.

These microbes living in the rhizosphere secrete and release low molecular weight organic and inorganic acids, through which their groups chelate the cations (calcium, magnesium, etc..) bound to phosphate, thereby converting it into soluble forms that plants can then take up.

By using our complete biological products, you are able to stimulate and feed these and many other beneficial microbes in your soil. By increasing populations and activity levels of these microbes, you can utilize more of the applied fertilizer, including phosphorus, that you apply not only this year, but have applied in years past.

What are you doing on your farm to maximize your nutrient programs potential?

Why can't Plants obtain all of the Nutrients they need from Synthetic Fertilizers?

Plants feed at the second table. The plant feeds on what the soil microbes provide. Plants are poor foragers and scavengers of nutrients in fertilizers compared to microbes. Microbes have the capacity of "mining" or releasing nutrients from soil particles that are unavailable or "tied-up". Since microbes need carbon, nitrogen, phosphates,

potassium and trace minerals, they digest these nutrients and change them to a chelated or carbon based form for the plants. The microbes rely on the plants to provide complex sugars released from plant roots to support the microbes ability to provide nutrition for the plants. Plants rely on the microbes to digest Organic Matter into Humus that

contains the nutrients in stable humic compounds. The plant then uses these stored and stable nutrients through the symbiotic relationship with the soil microbes. The balance of the carbon/nitrogen relationship is vital to the microbes and important to maintaining a healthy, productive soil.

10 Interesting Facts about Your Soil

1 Soils are alive and contain more weight below the ground in microbes than they do above the ground in normal livestock grazing rates.

2 There are more living organisms in one square yard of soil than there are people on the entire planet.

3 Microorganisms require food and energy just as plants require food and energy.

4 All nutrients must first go through a microbial digestion process to release and become available to the plant.

5 Bacteria and Fungi solubilize tied up phosphate to plant available phosphate.

6 Limited Pore space and lack of air & water balance in the soil is where most nutrient tie-up and absorption deficiencies start.

7 Root health and Earthworm populations are usually good indicators of Soil Health.

8 No-Till and Cover cropping still need high levels of balanced microbial activity.

9 Residue decomposition is almost entirely a Biological/Microbial process.

10 Many conventional Farming practices are antibiotic and do very little for the soil.