



# The Approach of "Other" Products TO SOIL MICROBIAL ISSUES

## **What Makes Healthy Soil?** Increased Microbial Numbers & Activity

*Bacteria* produce oxygen and enzymes for nutrient conversion

*Mycorrhizae* help improve root efficiency

*Actenomyces* aid residue composting

*Other Microbes* have specific functions in Soil Health

**The Problem:** Man's cultivation of soils uses pesticides, fertilizers and plowing, all of which destroy microbial activity. The result is an unhealthy soil with poor crop production. Below are some current and past approaches to resolving this Soil Health issue.

Add **Live Bacteria** to soils to increase numbers.

*Problem:* Grown in artificial-perfect environment. . . survival in farmed soils with pesticides - fertilizers - plowing - minimal at best.

Add **Humic Acid** to increase the carbon to feed the bacteria.

*Problems:* Application volume is usually very low and not enough to be effective. Temporarily soluble in alkaline pH solutions only and stains equipment and skin.

Add **Fermentation Broth** to furnish enzymes to increase microbial activity.

*Problem:* sourced from lysing specific bacteria causing inconsistent content and very thick syrup viscosity. It is very difficult to work with.

Grow **Microscopic Algae** on the soil surface to add polysaccharides (carbon).

*Problem:* Works fairly well if we get the correct conditions of 45° F for 45 days with 0.5 inch rain weekly.

Change **Electrical Charges** of soil particles to loosen soil to improve aeration. (Ammonium Laurel Sulfonate)

*Problem:* Strictly temporary and if tank-mixed with anything other than water, rendered ineffective.

Add **Seaweed Extract** to claim the presence of vitamins, enzymes, hormones, amino acids.

*Problem:* Would work great, but application rates are very low and content of claimed ingredients is very inconsistent from batch to batch. Also, issues with EPA if not EPA registered.

Add **Gypsum** to immediately improve friability and improve aeration.

*Problem:* Works great, but bulky handling issues, availability and expensive.

**None of the above** have shown **long-term benefits**. . . But all have merit.

Over the course of time from 1983 through recent years, **DeltAg** has tried them all. We continually search for new methodology for improving microbial activity.

In comparisons, none have out-performed **DeltAg Soil Solution**, which contains none of the above. Why not take advantage of the tons and tons of crop residue remaining in crop fields? A healthy soil cycle has healthy growth, activity and reproduction of the existing microbes in our soils that have survived our many cultural practices. Increasing the numbers of these "Survival of the Fittest" microbes, increases residue digestion, oxygen levels, nutrient availability, water holding capacity and overall root system and crop health. All of this results in healthier crops for the growing conditions of a given year. The focus and function of **Soil Solution** is to aid these microbes.