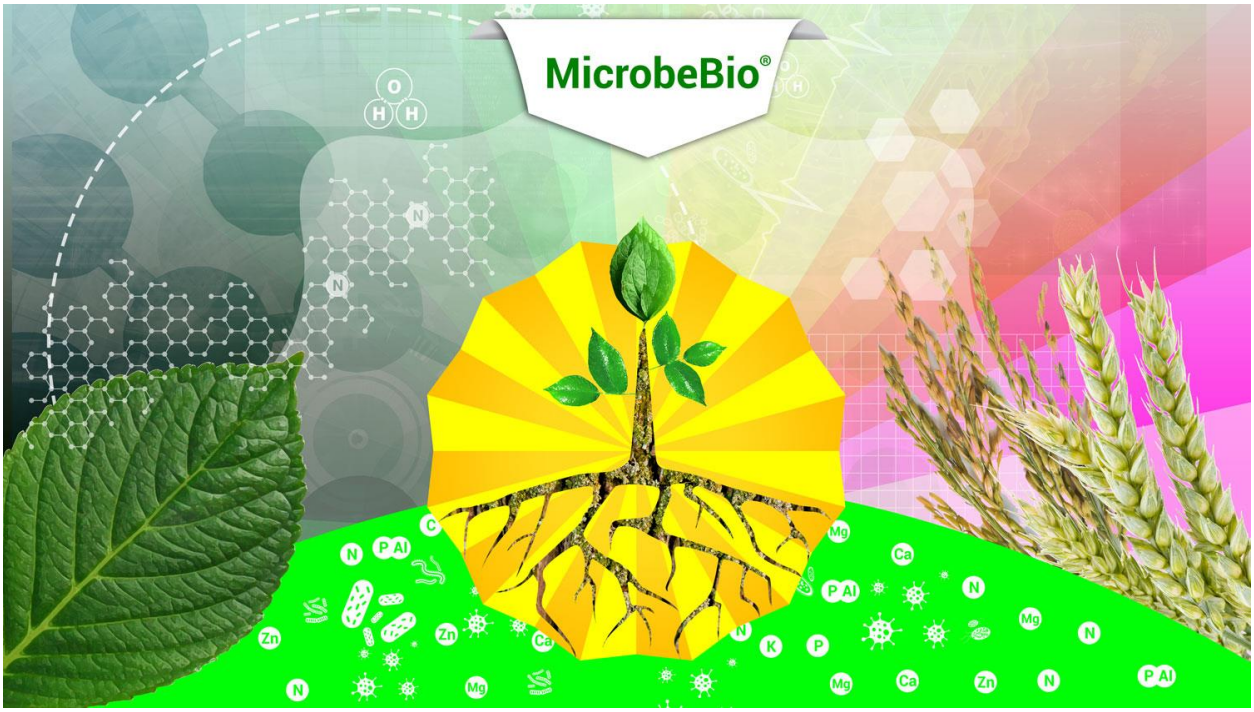

Life Giving Microbes

Life-Giving Microbes – The Next Wave in Agriculture

We Harness the Power of Nature with Our Granular and Liquid Microbial Soil Amendment

As the population of the earth continues to grow at an astounding rate, farmers are extremely busy looking for new and better ways to feed everyone. When you consider that, by the year 2050, there will be 9 *billion* people living on the planet, and that agricultural yields will have to *increase by 70 to 100%* in order to feed them all, you instantly realize just how big a task it is that these farmers have before them.

Interestingly, while they look for ways to make crops bigger (and crop yields bigger, as well), the great scientific minds at MicrobeBio have turned to the smallest creatures on earth for help; *microbes*.

In the past, most scientists focused on plants themselves when looking for ways to increase yields. The team at MicrobeBio has turned their attention to the environment around the plant, namely the soil.

The reason is microbial communities in the soil are what truly make a difference for plant health. When beneficial microbes are abundant and doing their job, root systems are stronger allowing plants to grow bigger, which in turn results in healthier, larger crops, naturally. More importantly, when the soil is microbially diverse and healthy, the need for chemicals to fertilize crops and control pests is reduced dramatically.

With a better understanding of the relationship between plants and microbes and how they interact, MicrobeBio has proven to successfully increase crop yields in the next 20 years while, at the same time, reducing the use of chemical fertilizers, as well.

Trillions of Microbes

The fact is, there are many different kinds of microbes and they do many different things in the soil to help plants.

One thing is certain; plants grown in soil that has a diverse and thriving microbe community are healthier, more nutritious, and taste better than plants grown in soil that is less diverse.

Microbes perform a wide variety of tasks in the soil, all of which help plants in one way or another. For example, some enable plants to better tolerate extreme fluctuations in temperature, while others help to control the spread of bacteria and viruses. Some microbes help improve resistance to drought and pests, while others increase a plant's ability to absorb necessary nutrients. Some microbes even break-down other elements in the soil, allowing their vitamins and minerals to be more easily absorbed by crops.

The simple fact is this; microbes have been helping plants to thrive since the very dawn of time itself here on earth. Indeed, when a seed begins to germinate in the soil, the call goes out immediately to the microbial 'community', and the dance of life begins. Scientists have even discovered that some microbes help other microbes to do their job, ultimately leading to healthier, more nutritious plants.

There is one more essential element required for this process to be completely successful…bacteria. Most of think of bacteria as bad, but simply put they are single-celled microscopic organisms that rapidly grow as colonies and produce beneficial by-products. Beneficial bacteria are imperative to life through the restoration of problem soils, improvement of crop production, and the bioremediation of environmental pollutants.

Bacteria in the soil are necessary in the conversion of unusable plant nutrients into forms that plants can use. While many soil bacteria are bound to the surface of soil particles and are found in soil aggregates, many more bacteria are concentrated at the roots of the plants. In fact, bacteria found within the rhizosphere of plants are much greater than the concentration that is found in the rest of the soil. The development team at MicrobeBio understand the symbiotic relationships between microbes, bacteria, and plants is absolutely essential in promoting plant and soil health.

The Green Revolution is Now!

Now, truth be told, this isn't the first time that scientists have looked to microbes as a source for help in the agricultural industry. The truth is, there are millions of microorganisms in every cup of soil and, since about the mid-20th century, scientists have been looking closely at them to determine what their use could be in increasing crop health and yields.

The most sought after microbes are those that can 'fix' nitrogen in the presence of oxygen, something that a mid-century process can achieve but, unfortunately, with wildly inefficient results. In fact, 2% of the earth's *total annual energy supply* is used every year in order to convert nitrogen for plant use, which is the true definition of the term 'grossly inefficient'.

If the right microbes could be found, and used, to fix nitrogen naturally, the decrease in energy use could be astounding.

At the MicrobeBio Laboratory, we are doing just that. Led by top industry researchers, we aim to catalog the wide range of microbes and microbial life on the planet, as well as determine all of the complex relationships between microbes and plants.

When you consider that there are 30,000 species of microbes in the area surrounding the roots of plants (the rhizosphere) you begin to see what a challenging task our team of researchers have before them.

Feeding the World a Billion Microbes at a Time

As the human population continues to increase the need for food solutions increases with it, and the importance of harnessing microbes becomes increasingly apparent.

Natural, organic and masters of helping plants to thrive, microbes are the best bet for a world that desperately needs agricultural solutions.

They may be some of the smallest creatures on earth, but microbes hold the biggest key to the survival of mankind. There's simply no doubt about it; microbes feed the world.

The 6 functions of MicrobeBio microbial soil amendments:

1. Biological Nitrogen Fixation
2. Phosphate Solubilization
3. Mobilization and Mineralization of Available Plant Nutrients
4. Phytohormone Production
5. Saprophytic Competence
6. Soil pH

MicrobeBio Product Benefits:

- Significantly increase crop yields
- Reduce fertilizer usage
- Reduce pesticide usage
- Reduce water usage
- Maximizes Nitrogen fixation
- Easy to apply
- Increases Cat-ion Exchange Capacity
- Reduces pest infestations of insects, harmful microbes and nematodes
- Reduce adverse environmental impact
- Improves crop health
- Increases photosynthesis function
- Increases healthy decomposition of organic matter
- Deeper, better developed root systems
- Increases food production to feed the ever-growing population