

Select the Right Soil Microbe Additives

Leimone Waite, Master Gardener, May 25, 2018

Q: Is it worth my money to buy the soil microbe additives that are advertised to make your plants grow bigger, faster and disease free?

A: There has been quite a bit of research that shows certain soil microbes can improve plant health and soil quality. All of these are naturally occurring in the soil but may not be present in your garden soil. A few of the common ones that are easily available to the home gardener and do have proven results are:

Soil inoculants, such as Burpee Bean and Pea Booster, are bacteria that are mixed with the seed of peas and beans at planting time to encourage the formation of nitrogen producing bacteria that grow as nodules on the plant roots. These bacteria, Rhizobium, can help produce a richer soil, bigger plants, and better yields for your beans and pea crops. If you've not recently grown a legumes crop such as peas, clover or beans in your garden, these bacteria are usually not naturally present in large enough numbers to benefit the crop so you will want to add a soil inoculant.

Another commonly available soil microbe additive is mycorrhizae. These soil additives come as either endomycorrhiza or ectomycorrhiza or a mix of both. They have names such as Xtream Mykos, Vital Roots, Endo Boost Pro or Wild Roots. Most garden plants respond well to an endomycorrhiza mix while only about 10 percent of the plant species, mostly woody plants including those of the Rose family, responding to the ectomycorrhiza. Mycorrhizal symbiosis in plants is believed to have played a crucial role in the initial colonization of land by plants and in the evolution of vascular plants in general. According to the Sustainable Agriculture Research and Education website "Roots that have lots of mycorrhizae are better able to resist fungal diseases, parasitic nematodes, drought, salinity, and aluminum toxicity. Mycorrhizal associations have been shown to stimulate the free-living nitrogen-fixing bacteria azotobacter, which in turn also produce plant growth-stimulating chemicals."

Commercial growers are using more of these soil additive as they are finding that they get better plant growth and do not have to use as many pesticides and soil fumigants. Since Methyl Bromide has been phased out strawberry farmers have been using more non-chemical controls for soil borne disease such as soil oxygen deprivation, bio-fumigants, and beneficial microbes that improve soil biology and plant health.

For many years Monrovia Nursery has used mycorrhizae in their soil mix. They grow 22 million plant per year and add mycorrhizae to all the plants they grow. On their website they give their reason for using Mycorrhizae as "these are beneficial organisms that grow along the roots of host plants, enlarging the roots' naturally-occurring surface-absorbing capacity by as much as 100 times, making the plant much more efficient in the uptake of nutrients and water. Mycorrhizae help to reduce transplant shock, stress from drought, soil-borne diseases, water usage and the reliance on fertilizers."

The Shasta Master Gardeners Program can be reached by phone at 242-2219 or email mastergardener@shastacollege.edu. The gardener office is staffed by volunteers trained by the University of California to answer gardeners' questions using information based on scientific research.