FACT SHEET

Southern Oregon Bokashi offers the highest quality locally made microbial inoculants for Southern Oregon area.

Southern Oregon Bokashi was founded in the Applegate valley in 2010 by Evan Short as a way of fostering the next evolution in organic agricultural practices. He has had great success with the product lines with applications in both commercial and hobbyist farmers and horticulturalists. After his initial introduction of the Southern Oregon Bokashi product line it became evident that production needed to be increased in order to keep up with the growing demand for the multi-use products. The Southern Oregon Bokashi line continues to grow with the demands of today's horticulturalist.

Southern Oregon Bokashi is a composed of symbiotic microorganisms (Lactic Acid Bacteria, Yeasts, and Photosynthetic Bacteria) grown onto a grain substrate that when utilized has been shown to:

- Breakdown nutrients from the soil therefore making the nutrients more available to plants
- Reduces the amount of fertilizer needed to achieve healthy productive plants
- Increase soil microbial activity in soils and, as a foliar spray, on leaves
- Improves soil structure, stable aggregates, and water holding capacity therefore reducing runoff and soil erosion
- Increase photosynthetic capacity of plants
- Suppress soil borne disease and pests
- Improve plant growth and fosters the formation of larger flowering sets
- Dramatically speeds up composting of manures and organic waste
- Can be used in conjunction with organic, synthetic fertilizers, and other mycorrhizal products
- Provides high levels of polysaccharides, micro-nutrients, beneficial enzymes, and organic acids
- The bio-available nutrients for the microbial populations aid in the increased aggregate stability and prevention of the pore space from collapsing during heavy irrigation or rains

Notes on the usage and difference between Wet and Dry Southern Oregon Bokashi:

Both of Southern Oregon Wet Bokashi and Dry Bokashi products contain the same microbial diversity and similar populations. The main differences between the two products are price and stability. The Dry Bokashi has microorganisms that are placed into a dormant state by controlled drying of the product. This allows for the Dry Bokashi to be reactivated at a later point for up to 2 years after the production date and is quite useful in kitchen composting to absorb some of the excess moisture.

The Wet Bokashi has been cultured and kept in an optimum state and will remain in good condition for up to 2 months from the date of production. However, when using the Wet Bokashi it is advised to use up the whole amount within 2 weeks of opening the bag for best results. This product is often sold in the spring and fall time to mix integrate into the soil. Sometimes there is white "mold" that appears on the Wet Bokashi. This is not harmful material to plants, but rather is the sign of the healthy beneficial microbial populations growing on the medium.

Application suggestions:

Mix either Southern Oregon Wet or Dry Bokashi into your soil medium, as a top dressing throughout the season, or in a water soluble tea (such as compost tea).

For best results use in your feeding schedule at least every two weeks at the suggested usage rates for teas or topdressing. If made into a tea solution for foliar feeding, for best results apply at least once a week. Avoid applying foliar tea sprays during the hottest parts of the day and on flowers.

In making compost tea, add Southern Oregon Bokashi at the rate of 1 ounce per gallon into your tea bags with your compost. This will boost the microbial portions of the tea dramatically and extend the length of time that the tea is stable as well. It is beneficial to add a tablespoon of oil to help break the foam formed from the protein breakdown. Fish hydrolysate or emulsion will help to also break head retention.

A special note for those who utilize synthetic fertilizers and pesticides:

If one is planning on utilizing Southern Oregon Bokashi in conjunction with synthetic fertilizers do not apply at the same time. Allow for a couple of days between application of Bokashi and fertilizers. Apply the fertilizers initially and the bokashi secondarily. This will therefore not stress the beneficial microorganisms as much with the detrimental osmotic effects of the salts from the fertilizers. It is advantageous to increase the rate of inoculation of Southern Oregon Bokashi to offset the detrimental effects.

If utilizing petroleum based pesticides refrain from applying the two in combination. The microorganisms in Southern Oregon Bokashi will tend to neutralize the compounds.

Microbial content of in Southern Oregon Bokashi products:

A minimum of 1 million colony forming units per gram (CFU/gram) of the following: Lactobacillus plantarum, Lactobacillus casei, Lactobacillus fermentum, Lactobacillus delbrueckii, Bacillus subtilis, Saccharomyces cerevisiae, Rhodopseudomonas palustris.

A special note on the microbial species in Southern Oregon Bokashi:

1. Photosynthetic Bacteria (Rhodopseudomonas palustris)

The photosynthetic or phototropic bacteria are a group of independent, self supporting microbes. These bacteria synthesize useful substances from secretions of roots, organic matter and/or harmful gases (eg. hydrogen sulphide), by using sunlight and the heat of soil as sources of energy. Useful substances developed by these microbes include amino acids, nucleic acids, bioactive substances and sugars, all of which promote plant growth and development. The metabolites developed by these microorganisms are absorbed directly into plants and act as substrates for increasing beneficial populations. R. palustris in particular has been acknowledged by microbiologists to be one of the most metabolically versatile bacteria ever described with the ability to utilize four distinct trophic feeding elements.

2. Lactic acid bacteria (Lactobacillus plantarum, Lactobacillus casei, Lactobacillus fermentum, Lactobacillus delbrueckii)

Lactic acid bacteria produce lactic acid from sugars and other carbohydrates, developed by photosynthetic bacteria and yeast. Therefore, some foods and drinks such as yogurt and pickles have been made with lactic acid bacteria for decades. However, lactic acid is a strong sterilizing compound, and suppresses harmful microorganisms and enhances decomposition of organic matter. Moreover, lactic acid bacteria promote the decomposition of material such as lignin and cellulose and ferments these materials, thereby removing undesirable effects of non-decomposed organic matter. Lactic acid bacteria have the ability to suppress disease-inducing microorganisms such as Fusarium, which occur in continuous cropping programs. Under normal circumstances, species such as Fusarium weaken crop plants, thereby exposing plants to diseases and increased pest populations such as root-feeding nematodes. The use of lactic acid bacteria reduces root-feeding nematode populations and controls propagation and spread of Fusarium, thereby inducing a better environment for crop growth.

3. Yeast (Saccharomyces cerevisiae)

Yeasts synthesis antimicrobial and other useful substances required for plant growth from amino acids and sugars secreted by photosynthetic bacteria, organic matter and plant roots. The bio-active substances such as hormones and enzymes produced by yeasts promote active cell and root division. These secretions are also useful substrates for microorganisms such as lactic acid bacteria and actinomycetes. When yeast lyse occurs they release the complete B vitamins into the soils aiding in recovery of plants from stresses.

4. Bacilli (Bacillus subtilis)

Bacillus work in the soil by forming bio-films composed of a multitude of microorganisms. These tend to be formed at the interface between the air and water and interacts with the plant's root system. These bio-films are beneficial because for many reasons. Bio-films are typically formed through the microbes use of quorum sensing. Beneficial microorganisms are able to inhibit pathogenic microorganisms to gain dominance in the bio-films. This ability aids in the control of pathogenic infections of plants. Many of the Bacillus microbes can degrade polymers such as protein, starch, and pectin, therefore, they are considered to be an important contributor to the carbon and nitrogen cycles. When the nutrient availability falls too low for Bacillus subtilis they will form endospores and hibernate until conditions return to more optimum levels. Bacillus subtilis has been found useful in foliar application to combat primary stages of powdery mildew infestation.