

## **Foliar Blend and IgniteS2 - Beyond Fertilizer Nutrients**

### **Non-Plant Food Components and Modes of Action in the Plant-Soil-Microbe Environment**

Agri-Gro Foliar Blend and IgniteS2 are agricultural inputs that take advantage of many aspects of plant nutrition, biochemistry, and microbiology. Agricultural inputs are normally registered as fertilizers, pesticides or microbial inoculum. Agri-Gro Foliar Blend and IgniteS2 are not, nor do they claim in any manner to be pesticides. These products do help reduce plant disease problems, but do so by making the plant stronger and more able to defend itself. This similar to animals (including humans) having less health problems when they are provided a balanced diet and healthy living environment. Also, disease problems in crops occur when pathogens run rampant and microbial populations become out of balance, favoring pathogens. These products promote a balance microbial community in the plant and soil environment, which help to reduce the severity disease problems.

Also, while some of components of these products are derived as byproducts of microorganisms, they are not designed nor contain sufficient microorganisms to be classified as inoculum. These products meet the guidelines of American Association of Plant Food Control Officials (AAPFCO) to be classified a plant food (fertilizer) product. These guidelines are accepted in the United States and Canada, and the products are registered in virtually all states in the United States that have significant agricultural production. They also comply with existing Canadian laws related to their sales in Canada. Being a registered fertilizer product, the product is required to provide on the label a "Guaranteed Analysis" of the nutrients contains in each product and sources the nutrients were derived. This information is provided on the products respective labels, and again the labels follow the American Association of Plant Food Control Officials (AAPFCO) guidelines. Supplemental ingredients are not required to be listed on the label that do not pose health or environmental risks beyond what the fertilizer nutrients themselves do.

The biostimulants and nutrients in these products are designed to promote healthy growth of all crops. In addition to the plant nutrients listed on the label, the products also contains naturally derived ingredients that stimulate beneficial plant and soil microbes. Below are some of the components of this product that are beneficial to crop production.

- Organic and growth promoting compounds are derived from 30+ naturally occurring microorganisms. These include low levels of naturally occurring growth regulators (e.g. indoleacetic acid (IAA), gibberlins (GA), auxins, etc.), vitamins, and organic acids (including naturally occurring salicylic acid). These compounds have been shown to stimulate the growth of the microbiology in the plant-soil environment. The benefits of enhanced and balanced microbial populations include improved nutrient availability and uptake, improved tilth of soil resulting in better drainage, aeration, root penetration, larger root systems, better drought tolerance, speeds germination, etc.

- Carbohydrate sources (sugars) to help to provide energy to the microorganisms and stimulate microbial growth.
- A proprietary formulation that reacts once in the soil to release oxygen, thus helping with microbial growth, seed germination, nutrient uptake and plant growth.
- Naturally occurring mycorrhizae, which are part of the manufacturing process, help with nutrient uptake and growth promotion of crops. Eight different strains have been identified in the products, which work with a wide variety of crops. The products are formulated so that more of these naturally occurring organisms are in IgniteS2 than Foliar Blend since it is primarily applied to the soil.

The product has a normal shelf life of four (4) years when protected from freezing, high temperature, and other harsh conditions. The pH of the product is made low, approximately pH 3, which makes the nutrients more available and also helps to stabilize the various organic and chemical components of the product, and also keeps any living components in a dormant state.

AgriGro has been in business for over 30 years producing biostimulants and plant nutrient products. The company's products are currently sold in over 40 countries around the world, and have been used with virtually every crop imaginable. The products have proven themselves safe when used according to label instructions, and no crop or soil damage has ever been asserted against any of the AgriGro products.