

Introducing biostimulants  
to the real world of production  
agriculture and horticulture ... since 1978

Plant nutrients ... since 1982



ISP Technologies, Inc. is a Kansas (US) based company dedicated to the goals of improving both the economical potential and the environmental impact stemming from agricultural/horticultural operations. We believe strongly that the increased usage of an array of biostimulants will provide one avenue for achieving those goals.

Reading recent industry reports and literature, biostimulants fall into one or more of several categories; humic acids, bioferments, or substrates of either sea plants or animals. The European BioStimulant Coalition even defines silicate as a biostimulant group, due to how silicate impacts a wide range of physiological activities within the plant. Some of these base materials, such as the bioferments and humic acids may then be further refined to concentrate specific growth compounds stemming from their processing or manufacturing. ISP is active in all of the biostimulant groups.

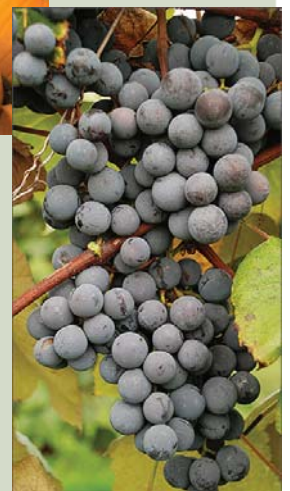
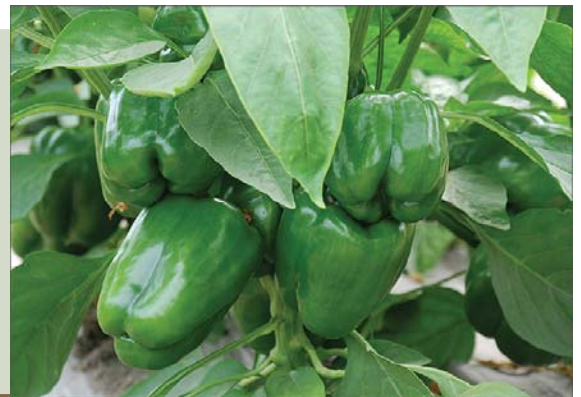
We provide an assortment of bio's ranging from microbial fermentation extracts with specific plant growth regulator additives; humic and fulvic acids; sea plant and animal compounds and several silicate based products. In addition to bio-stimulants, we are also active in the area of assorted plant oils, as well as a wide variety of plant foods and overall plant nutrition. Several of our products also qualify for organic production.

Our decades of experience, and working with more than 130 different crops, has given us the opportunity to work with a huge variety of soil types ranging from the Pacific Northwest to the east coast, as well as several foreign countries such as Chile, Argentina and Italy. This experience has also given us the opportunity to learn from an actual hands-on basis what biostimulants offer as to potential growth benefits. In addition, we have learned a number of limitations as to what to expect, and how soil health; environment, individual management and plant nutrition interact to provide eventual crop response.

We welcome the opportunity to work with you and both recommend and discover how the exciting world of biostimulants may be best used for your specific challenges and benefits.

## **Benefits:**

- Improved nutrient efficiency*
- Larger, more effective rooting*
- Reduction from abiotic stress*
- Enhanced plant metabolism*
- Improved flavor in produce*
- Higher nutrient in grains, forage*
- Higher yields*





## A Sampling of our Biostimulants -

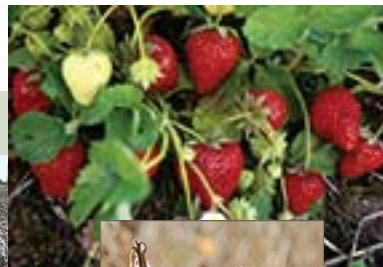
### MetaboliK Seed Boost (SB)

A unique blend of organic plant sugars, bio ferments, specific root stimulants and vitamins ... combined with a selected nutrient package, MetaboliK Seed Boost has consistently shown to be a highly beneficial additive at seeding or transplanting seedlings. Below is data from a 2017 project (Pennsylvania State University Southwest Research Station, Manheim, PA) illustrating seedling emergence on several plant species. Both the percentage of emergence and the uniformity of emergence was improved on most all species. Subsequent plant development was also improved, with the SB treated seedlings showing both enhanced rooting, especially of the smaller feeder roots, and more rapid vegetative growth.

Name & Treatment	3/16	3/17	3/20	3/21	3/22	3/23
Red Morning Tomato (H <sub>2</sub> O)	1	16	30	32	32	32
Red Morning Tomato (SB)	0	1	26	30	33	35
Scarlet Red Tomato (H <sub>2</sub> O)	0	17	33	34	34	34
Scarlet Red Tomato (SB)	0	0	23	34	34	34
Revolution Pepper (H <sub>2</sub> O)	1	1	14	32	34	34
Revolution Pepper (SB)	0	0	6	20	28	30
Green Gold Broccoli (H <sub>2</sub> O)	34	34	35	36	36	36
Green Gold Broccoli (SB)	31	31	34	34	34	35
Whirlygig Zinnia (H <sub>2</sub> O)	30	31	32	32	32	32
Whirlygig Zinnia (SB)	22	26	29	29	29	29
Number of emerged seedlings by date						



Red Morning Tomato



### MetaboliK HV-1

Originally formulated to enhance the activities of beneficial soil organisms, HV-1 is a highly effective product resulting from the fermentation of multiple species of yeast coupled with a variety of selected soil organisms. The resulting metabolic and cellular waste, or by-products, provides a rich assortment of unidentified growth factors. To this fermentation concentrate a selection of plant growth regulators is added, including multiple auxins, kinetins and gibberellic acids.

As a result, MetaboliK HV-1 is also a highly effective foliar additive; enhancing plant growth, immune responses, and other metabolic activities, thus aiding the plant to withstand both abiotic and biotic stress factors. In addition, HV-1 encourages the genetic expression of all varieties to manifest themselves to a greater degree. Although important in all crops, this aspect of the product can be especially beneficial in fruits and vegetables. Effects in the soil can vary based upon management and environmental differences, but at times the results can be quite dramatic. Research has shown that HV-1 can provide greater benefits than one ton of composted chicken litter when applied to leveled ground. It may also have a significant impact on soil physical structure, with a resulting reduction in overall compaction and drainage. In many instances, it has shown to provide greater resistance to drought conditions.

## PhytoGroXtra [humic acid(s)]

Humates, or compounds derived from the extraction of either humic or fulvic acids from carbon rich materials have a long history in agriculture. Recent studies have shown that although there is still much yet to learn as to how they provide benefits to plant growth and development, there is little question that possible benefits exist.

Again, with decades of experience in producing humic extracts, we offer both exceptional quality and ease of use. Our humic products can be applied in a variety of situations, including drip irrigation without the danger of plugging filters or drip lines.

If looking for humic compounds, either humic acid(s) or fulvic acid, ISP truly offers the premium option.

## OTHER AVAILABLE BIOSTIMULANT BLENDS:

**Pow'r Pak** - Especially designed as an additive to a row place starter solution, Pow'r Pak is a blend of bio-ferments, fulvic acid and selected trace minerals. Effective on corn, cotton, and other row crops.

**ReStore 3G** - Formulated to encourage biodegradation, or to reduce potential disease issues in areas of monoculture such as tomatoes grown in a greenhouse, ReStore 3G includes bio-ferments, plant sugars, and humic acids(s).

**MicroZorb** - A blend of trace minerals combined with bio-ferments and enzymatic "biozorb" technology, MicroZorb is designed to reduce plant shock from applied chemistries such as glyphosate and other herbicides.

**ReStoreXtra** - Similar to MetaboliK HV-1, without the plant growth regulators, ReStoreXtra is approved for most organic farming operations.

**SiGuard** - 84% potassium silicate.

**SiMag 58** - A blend of 5% chelated magnesium with 8% potassium silicate.

**SiMan 911** - A blend of 9% chelated magnesium with 11% potassium silicate.



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