



bontera[®]
Richer earth. Better harvest.

Life Sciences
Review

**TOP AGRICULTURAL
BIOTECH SOLUTIONS
PROVIDER**

2024
COMPANY OF THE YEAR

Agri
Review

**TOP AGRI
BIOTECH SOLUTIONS
PROVIDER**

2023
COMPANY OF THE YEAR

**Biological Products for Sustainable,
Regenerative Agriculture**

About Bontera

Our mission:

We serve the soil to empower sustainable agriculture that meets the nutritional needs of society.

Our products:

We develop products based on naturally-occurring soil microbes selected for their superior performance and functionality. These specialized microbes are the catalysts for achieving optimal soil health and fertility and increasing crop yield.



What's different about Bontera products?

- Each product has a cocktail of multiple high-performing microbes to improve biodiversity in the soil and to ensure the product is multi-functional. Many of our competitors have just one microbe.
- All products are in a powder form which ensures a much longer shelf life - two to three years.
- One 2.2lb (1kg) bag is sufficient for between a 10-40-acre application, which also reduces shipping & handling costs.





How Microbes Carry out Beneficial Functions in the soil?

- Microbes produce a wide variety of organic compounds in the soil. These compounds are also referred to as metabolites which include organic acids, enzymes, natural hormones, and antibiotics.
- Organic acids, which are just one class of compounds produced by microbes, lower the pH of the rhizosphere (root zone) and break down the complex organic matter into simpler forms, thus helping build soil's organic matter (SOM).

These organic acids also make nutrients available to plants and help make soil permeable to water, fertilizers, and other nutrients.



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How Microbes Solubilize P & K?

- Enzymes are another class of compounds produced by microbes. They help breakdown chemical bonds between the nutrients, such as phosphate, potassium and many other minerals, in rock or soil particles, thereby releasing or freeing the nutrients for plant uptake.
- Enzymes are also needed for plant growth and development to help synthesize proteins, glycoproteins, polysaccharides, and lipids.

WHY MICROBES MATTER

ENHANCED NUTRIENT AVAILABILITY

INCREASED WATER & NUTRIENT ABSORPTION

SUPPORTS PLANT IMMUNE SYSTEM



How Microbes Fix N?

- Many microbes are capable of fixing nitrogen in plants. Microbes use free or atmospheric nitrogen and transform it into ammonia then further convert it into inorganic compounds that are usable by plants. Nitrogen is an essential part of proteins and nucleic acid molecules.

How Microbes Protect Plants from Diseases?

- Many microbes produce a variety of organic compounds to protect plants from invading diseases. For example, *Bacillus thuringiensis* produce Cry Protein crystals that are toxic to many harmful insects and their larvae.

SA-10

Microbial Soil Enhancer Water-Soluble Powder Concentrate



Soil heath is fundamental to profitable and sustainable agriculture. Our **Bontera SA-10** Microbial Soil Enhancer is a scientifically formulated proprietary blend of microbes selected for their ability to enhance soil fertility and plant health through seed treatment, in-furrow and foliar applications. **Bontera SA-10** increases the efficiency of fertilizers, improves the microbial balance in the soil, and enhances soil fertility.

Key Benefits of SA-10:

- Enhances plant health
- Increases fertilizer efficiency
- Increases soil organic matter
- Improves germination and root development
- Improves plant's resistance to stresses

Beneficial Microbes in SA-10 Include:

- *Bacillus amyloliquefaciens*
- *Bacillus pumilus*
- *Bacillus subtilis*
- *Bacillus licheniformis*
- *Bacillus megaterium*
- *Trichoderma harzianum*
- *Trichoderma koningii*
- Mycorrhizae

Crops: All crop types.

Tank Compatibility: Can be co-applied with other fertilizers. Should not be mixed with pesticides.

SEED-COAT

Wettable Powder



Bontera Seed-Coat is a highly concentrated, organic formulation consisting of a broad-spectrum microbial consortium that is specially designed to stimulate seed germination and emerging roots and shoots.

Key Benefits of Seed-Coat:

- Helps create optimal soil conditions for seed germination
- Maintains acidic pH in soil for seed germination and root development
- Improves availability and uptake of nutrients
- Enhances overall health of seeds and roots
- Helps fix atmospheric nitrogen

Beneficial Microbes in Seed-Coat Include:

- *Bacillus pumilus*
- *Bacillus megaterium*
- *Bacillus amyloliquefaciens*
- *Bacillus licheniformis*
- *Bacillus subtilis*
- *Azospirillum brasilense*
- *Azotobacter chroococcum*
- Mycorrhizae, including several of *Glomus* and *Rhizopogon* species,

Crops: Can be used to coat corn and all kinds of legume, grain, fruit, and herbaceous crop seeds and a wide variety of grass seeds.

Application: Can be added to planter box or mixed with carbon.

DEL MAR

Water-Soluble Micronutrient Seaweed Extract



Nutrient availability is a vital aspect of improving soil fertility, root development, and crop production. **Bontera Del Mar** is an organically rich, water-soluble powder product which contains an extract of brown seaweed. This marine algae is an abundant source of polysaccharides, polyunsaturated fatty acids, enzymes, bioactive peptides, and over 70 vitamins and minerals.

Bontera Del Mar is shown to be effective in stimulating plant growth, improving nutrient uptake efficiency, and providing tolerance against abiotic stresses. **Bontera Del Mar** is most effective when used with products containing beneficial soil microbes.

Key Benefits of Impact:

- Enhances plant health
- Stimulates plant growth
- Improves nutrient availability
- Enhances nutrient uptake
- Provides better tolerance against stresses

Source of Algae:

- *Ascophyllum nodosum*

Crops: All crop types.

Tank Compatibility: Can be co-applied with other fertilizers and pesticides.

TRICHO-POWER



High Performing Trichoderma Species Water-Soluble Powder Concentrate



Bontera Tricho-Power is a highly effective and powerful blend of all-naturally occurring beneficial soil fungi, designed to stimulate the plant's rhizosphere.

The Trichoderma strains were selected specifically for their aggressive growth and plant growth promoting capabilities. Some of these strains have also been shown to exhibit disease suppression properties and have been reported as mycoparasites of various plant pathogenic fungi.

Key Benefits of Tricho-Power:

- Stimulates root development
- Improves plant's resistance to stresses
- Improves overall plant health
- Improves crop quality
- Improves soil biological condition

Beneficial Microbes in Tricho-Power include:

- *Trichoderma asperellum*
- *Trichoderma hamatum*
- *Trichoderma harzianum*
- *Trichoderma koningii*
- *Trichoderma viride*

Crops: All crop types.

Tank Compatibility: Can be co-applied with other fertilizers. Should not be mixed with pesticides.

NITROFIX

High Performing Nitrogen Fixing Microbes Water-Soluble Powder Concentrate



Nitrogen fixation in the soil is a key process in making nitrogen containing nutrients available to the plant. **Bontera NitroFix**, is a powder product containing a broad spectrum of beneficial microbes with a strong emphasis on efficient nitrogen fixation, seed germination, and root development. **Bontera Nitrofix** is best used as an in-furrow soil application and can also be used as a seed coating.

Key Benefits of Nitrofix:

- Promotes efficient nitrogen fixation
- Improves nitrogen availability
- Helps seed germination
- Helps early-stage root development
- Stimulates plant growth
- Enhances plant health

Beneficial Microbes in Nitrofix include:

- *Rhizobium spp.*
- *Bradyrhizobium spp.*
- *Azosprillum spp.*
- *Azotobacter spp.*
- *Paenibacillus spp.*
- *Gluconacetobacter spp.*

Crops: Legume crops and all other bean crops as well as corn.

Tank Compatibility: Can be co-applied with other fertilizers and pesticides.

NT-10

Biological Soil Improvement Water-Soluble Powder Concentrate



Nematode damage in crops is mainly due to biological imbalances in the soil. Essentially, there are too many root-feeding nematodes and too few beneficial organisms to keep nematode population in check. **Bontera NT-10** contains naturally occurring and versatile soil microbes that helps to restore the balance in the soil food web and grow stronger healthier plants.

Key Benefits of NT-10:

- Control nematode population
- Protect root system
- Improve root development
- Promotes plant growth

Beneficial Microbes in NT-10 Include:

- *Bacillus firmus*
- *Bacillus cereus*
- *Streptomyces lydicus*

Crops: All crop types.

Tank Compatibility: Can be co-applied with other fertilizers. Should not be mixed with pesticides.

PC-10

Microbial Enhancer Water-Soluble Powder Concentrate



Bontera PC-10 contains a powerful blend of naturally occurring biocontrol agents that are very effective against a wide variety of foliar, stem and root diseases, root knots and several predominant insects that serve as disease carriers. The product is able to enhance the microbiome of the soil and plant, which effectively provides protection against insect pest damage.

Key Benefits of PC-10:

- Helps to restore the microbial balance
- Provides protection against a range of diseases
- Protects the foliar and leafage of the plant

Beneficial Microbes in PC-10 Include:

- *Bacillus thuringiensis*
- *Metarhizium anisopliae*
- *Streptomyces griseoviridis*

Crops: All crop types.

Tank Compatibility: Can be co-applied with other fertilizers. Should not be mixed with pesticides.

BONTERA APPLICATION GUIDELINES

| Product | Bag Size | Soil Application | | Foliar Application | | Seed Application |
|---------------------|--------------|---|-------------------------------------|-----------------------------|------------------------------------|--|
| | | Range per Bag | Frequency | Range per Bag | Frequency | Range per Bag |
| SA-10 | 1kg / 2.2lbs | 20 acres per application | In furrow at time of planting | 40 acres per application | One time per month | One bag per 880lb (400kg) of seed |
| Seed-Coat | 40lb pail | Not for soil use | Not for soil use | Not for foliar use | Not for foliar use | One 40lb pail will coat approximately 25,000lb of seed |
| Del Mar | 1kg / 2.2lbs | 20 acres first application, 40 acres after that | In furrow at time of planting | 20-40 acres per application | One time per month | |
| Tricho-Power | 1kg / 2.2lbs | 10 acres first application, 20 acres after that | In furrow at time of planting | 40 acres per application | Every other week (or as necessary) | |
| Nitrofix | 1kg / 2.2lbs | 20 acres per application | In furrow at time of planting | Not for foliar use | Not for foliar use | One bag per 880lb (400kg) of seed |
| NT-10 | 1kg / 2.2lbs | 10 acres first application, 20 acres after that | At time of planting + 4 weeks after | 40 acres per application | As necessary | |
| PC-10 | 100g / 3.5oz | 10 acres per application | In furrow at time of planting | 10 acres per application | Apply weekly | |

Storage & Handling: Store product in a cool dry place until ready to use. Once mixed with water, use within 12-24 hours. All powders are good for 3 years. Nitrofix – 18 months.



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