

Dry
Technology



BioNUTRIENTS™ TOTAL-PAK

WITH MYCORRHIZAL TECHNOLOGY

- **Contains Endo & Ectomycorrhizae**
- **Promotes Soil Fertility**
- **Solubilizes Minerals & Cycles Nutrients**

GUARANTEED ANALYSIS:

Total Nitrogen (N)	3%
3% Slowly Available Nitrogen*	
Soluble Potash (K ₂ O)	3%
Boron (B)02%
Copper (Cu)05%
Iron (Fe)	0.5%
Manganese (Mn)	0.5%
Magnesium (Mg)	0.5%
Molybdenum (Mo)	0.0005%
Zinc (Zn)	0.05%

Derived From: Ferrous Sulfate, Condensed Plant Proteins, Fish Protein Hydrolysate, Potassium Humate, Sodium Molybdate, Boric Acid, Copper EDTA, Manganese EDTA, Zinc EDTA, Chelating Agent: EDTA

*3% Slowly Available Nitrogen from Plant Protein

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS:

Bacillus subtilis	1.5 x 10 ⁶ CFU per gram
Bacillus licheniformis	5 x 10 ⁵ CFU per gram
Bacillus amyloliquefaciens	1.5 x 10 ⁶ CFU per gram
Bacillus pumilus	1.5 x 10 ⁶ CFU per gram
Pseudomonas putida	1 x 10 ⁵ CFU per gram
Pseudomonas fluorescens	1 x 10 ⁵ CFU per gram
Yeast (Saccharomyces cerevisiae)	4.5 x 10 ¹⁰ per gram
Endomycorrhizal spores	71.4 spores per gram
Glomus intraradices	1.76 x 10 ¹ spores per gram
Glomus mosseae	1.81 x 10 ¹ spores per gram
Glomus aggregatum	1.81 x 10 ¹ spores per gram
Glomus etunicatum	1.76 x 10 ¹ spores per gram
Ectomycorrhizal spores	4.14 million per gram
Pisolithus tinctorius	2.65 x 10 ⁵ spores per gram
Rhizopogon villosulus	4.85 x 10 ⁵ spores per gram
Rhizopogon amylopogon	5.29 x 10 ⁵ spores per gram
Rhizopogon fulvigleba	4.85 x 10 ⁵ spores per gram
Rhizopogon luteolus	4.85 x 10 ⁵ spores per gram
Scleroderma cepa	9.7 x 10 ⁵ spores per gram
Scleroderma citrinum	9.26 x 10 ⁵ spores per gram

CFU = Colony Forming Units

SOIL AMENDING INGREDIENTS:

17%	Humic Acid (derived from Leonardite)
10%	Kelp Extract (Ascophyllum)
1.5%	Natural Wetting Agent (Yucca schidigera)

- **Protects Root Surface Areas**
- **Improves Poor Soil Conditions**
- **Aids in Resistance to Abiotic Stress**

PRODUCT DESCRIPTION:

BioNutrients Total-Pak contains the top performing Endo and Ecto Mycorrhizae that are able to propagate in a broad range of soil temperatures, including northern climates and in a pH of 7 and above. With a total of eleven strains of both Endo & Ectomycorrhizae, BioNutrients Total-Pak ensures that a broad spectrum of fungi is present for all types of climates and that they will be viable in the broadest possible range of soils. The Mycorrhizae will improve the uptake of water, nutrients and minerals, as they are directly involved in plant mineral nutrition. With the benefit of improved nutritional uptake (making the nutrients more "mobile") of macronutrients like phosphorus (P) and micronutrients like zinc (Zn) and copper (Cu), the potential of symbiosis between the fungi and host plant increases. Increased absorption of water also results from the symbiosis of the fungi and host plant, and improves osmotic adjustment under drought and salinity stresses. Mycorrhiza also raise the potential of transplanting success with faster establishment and resistance to pests and soil borne diseases, which in turn produces a better survival rate and healthier plants throughout the plant life cycle, increasing horticultural production and growth.

In addition, BioNutrients Total-Pak also contains a micronutrient package, soil conditioners, natural wetting agent and rich organic supplements. These additional, specially selected ingredients enhance fertilization of the crop, provide added nutrition for both the mycorrhizae and plant, regulate CEC and pH of the soil, and allow for increased water uptake.

The powerful combination of Mycorrhizal technology and macro and micronutrient enhancement makes BioNutrients Total-Pak a vital part of fertilization for increasing yield, plant health protection, and improving soil conditions.

Storage & Handling: BioNutrients can be stored in normal dry warehouse areas. Freezing will not affect BioNutrients. When using larger E-Z pails, be sure to close container lid tightly after use. It contains 100% natural ingredients and is safe to handle.

Seed & Transplant Treatment Recommendations		
Banded or Mixed with Seeds		Frequency / Notes
Rate per acre	Rate per Ha	Rates vary by crop and seed planting density
3 Pounds	3.3 Kg	

Transplanting Plugs or Side Dressing		
Application	Rate	Frequency / Notes
Transplanting Plugs	Mix 1/3 - 1/2 ounce per gallon water (2 - 3 g per Liter water)	Drench plant at time of transplant
Side Dressing	1/2 lb per acre (1/2 Kg per Ha)	Apply after transplanting 2" out and 2" down and at 2 nd true leaf stage along with nitrogen.

Vegetable, Herb - Field & Permanent Crops		
Application	Rate	Frequency / Notes
Vegetable, Herb & Field Crops Including (but not limited to): Berries, Brassica, Bulb Vegetables, Cole Crops, Cucurbits, Fruiting Vegetables, Grains, Herbs and Spices, Leafy Vegetables, Legumes, Rice, Root, Tuber and Corm Vegetables,	Rate Per Acre: Mix 1 - 2 packs per 40 - 100 gallons of water and apply per acre. For smaller applications mix 1/3 - 1/2 oz (1 tbs.) per gallon of water.	Apply after transplanting, thinning or at 2 nd true leaf stage. Apply 1 - 2 subsequent applications at 10 - 15 day intervals. Use as needed to supplement nutritional requirements.
Permanent Crops Including (but not limited to): Vines & Caneberries, Citrus, Grapes, Nut Crops, Pome Fruit	Metric: Rate per Hectare: Mix 2 - 5 packs in 100 - 200 Liters water. For smaller applications mix 2 - 3 grams per Liter of water.	Apply first application prebloom. Apply subsequent applications at mid-crop, and 3 - 4 weeks prior to harvest or as needed to supplement nutritional requirements.
Tropical and Sub Tropical Fruit (but not limited to): Banana, pineapple, mango, papaya, coffee		Can be used as a dip or drench at the time of planting. Apply as a side drench 3 to 4 times per year.

For Bulk Soil Blending	
Bulk Soil	BioNutrients Injectable
1 cubic yard (1 m ³)	1/2 - 1 lb. (300 - 600 grams)
50 cubic yards (38 m ³)	25 - 50 lbs. (11.4 - 22.8 kg)
80 cubic yards (61 m ³)	40 - 80 lbs. (18.3 - 36.6 kg)
100 cubic yards (76 m ³)	50 - 100 lbs. (22.8 - 45.6 kg)

CAUTION: Keep out of reach of children. In case of contact with eyes, flush immediately with copious amounts of water. Contact a physician. Do not take internally.

Condition of Sale and Warranty: Growth Products, Ltd. warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on the label only when used in accordance with label directions under normal conditions of use. Handling, storage and use of the product by Buyer or User are beyond the control of Growth Products, Ltd. and Seller. Risks such as crop injury or other unintended consequences resulting from, but not limited to, weather or soil conditions, presence of other materials, disease, pests, drift to other crops or property, or failure to follow label directions will be assumed by Buyer or User. IN NO CASE WILL GROWTH PRODUCTS, LTD. OR SELLER BE HELD LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT.

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