



TURF & ORNAMENTAL

BioNutrients[®] Total-Pak 1-0-4

- Contains a diverse mix of beneficial soil bacteria as well as Endo and Ecto Mycorrhizae
- Added nutrition supports beneficial soil microbes and plant vigor
- Improves plant nutrient uptake and stress tolerance

Net Weight:

■ 8 oz (226 g) ■ 5 lb (2.2 kg) ■ 20 lb (9 kg) ■ 40 lb (18 kg) ■ 200 lbs (88 kg)

BioNutrients Total-Pak 1-0-4

FOR NON-FOOD USE
SOIL APPLIED ONLY

F002873

Guaranteed Analysis:

Total Nitrogen (N)	1%
1% Water Soluble Nitrogen	
Soluble Potash (K ₂ O)	4%
Magnesium (Mg)	0.5%
0.5% Water Soluble Magnesium	
Copper (Cu)	0.05%
0.05% Chelated Copper	
Iron (Fe)	0.5%
Manganese (Mn)	0.2%
0.2% Chelated Manganese	
Molybdenum (Mo)	0.005%
Zinc (Zn)	0.05%
0.05% Chelated Zinc (Zn)	

Derived From: Ferrous Sulfate, Fish Protein Hydrolysate, Kelp Extract (*Ascophyllum nodosum*)* and Potassium Hydroxide, Potassium Carbonate, Copper EDTA, Manganese EDTA, Zinc EDTA, Magnesium Sulfate, Sodium Molybdate

*Where Potassium Hydroxide is the extraction agent

Guaranteed Analysis

Soil Amending Ingredients:

Active Ingredients

Humic Acid (derived from Leonardite)	10%
Wetting Agent (<i>Yucca schidigera</i>)	3%
<i>Bacillus subtilis</i>	1.75 x 10 ⁶ CFU* per gram
<i>Bacillus amyloliquefaciens</i>	1.25 x 10 ⁶ CFU* per gram
<i>Bacillus pumilus</i>	1.75 x 10 ⁶ CFU* per gram
<i>Pseudomonas putida</i>	11.00 x 10 ³ CFU* per gram
Yeast (<i>Saccharomyces cerevisiae</i>)	6 x 10 ⁶ CFU* per gram

Endomycorrhizae

<i>Glomus intraradices</i>	2.9 propagules per gram
<i>Glomus mosseae</i>	3 propagules per gram
<i>Glomus aggregatum</i>	3 propagules per gram
<i>Glomus etunicatum</i>	2.9 propagules per gram
<i>Ectomycorrhizae</i>	
<i>Rhizopogon villosulus</i>	8.1 x 10 ² propagules per gram
<i>Rhizopogon luteolus</i>	8.1 x 10 ² propagules per gram
<i>Rhizopogon amyloporogon</i>	8.8 x 10 ² propagules per gram
<i>Rhizopogon fulvilegiba</i>	8.1 x 10 ² propagules per gram

<i>Pisolithus tinctorius</i>	4.4 x 10 ⁴ propagules per gram
<i>Sclerotinia citrinum</i>	11.5 x 10 ³ propagules per gram
Total Other Inert Ingredients	67.9%

*Colony Forming Units

Expiration Date: Microbe Count may begin to decline 2 years after Manufacturing Date printed on container

BioNutrients Total Pak contains molybdenum (Mo). The application of fertilizing materials containing molybdenum (Mo) may result in forage crops containing levels of molybdenum (Mo) which are toxic to ruminant animals.

Information regarding the contents and levels of metals in this product is available on the internet at <http://www.aapfco.org/metals.html>

Information about the components of this lot of fertilizer may be obtained by writing to Douglas Plant Health, 1550 E. Old 210 Highway, Liberty, MO 64068 and giving the lot number which is printed on the front of the container.

FIRST AID	
IF SWALLOWED:	Rinse mouth. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a poison center or doctor if you feel unwell
IF IN EYES:	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, call a physician
IF ON SKIN:	Wash off immediately with plenty of soap and water while removing all contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
IF INHALED:	Remove exposed individual(s) to fresh air for 20 minutes. Consult a physician/poison control center if individual's condition declines or symptoms persist.

You may also contact 1-352-323-3500 day or night for emergency treatment information. If medical advice is needed, have product container or label at hand (P101). Keep out of reach of children (P102), Read label before use (P103).

STORAGE: Keep container tightly closed. May be stored in unheated area, but keep from freezing. Store in areas inaccessible to children and pets.

DISPOSAL: Dispose of contents/container in accordance with local/regional/national/international regulations. Do not reuse container.

Wash face, hands, and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

The following precautionary statements and pictograms are based on the Globally harmonized system of classification and labeling of chemicals (GHS) and are mandated by the Occupational Safety and Health Administration (OSHA).



Warning

Causes skin irritation
Causes serious eye irritation

Condition of Sale and Warranty: Douglas Plant Health 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 Douglas Plant Health 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 DOUGLAS PLANT HEALTH, LTD OR SELLER BE HELD LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT.

Douglas Plant Health
1550 E. Old 210 Highway
Liberty, MO 64068
(800) 648-7626
www.DouglasPlantHealth.com



Product Description:

BioNutrients 1-0-4 Total-Pak contains a diverse mix of beneficial soil bacteria as well as Endo and Ecto Mycorrhizae. Additionally, BioNutrients 1-0-4 Total Pak contains a natural wetting agent, targeted micronutrient package, soil conditioners, and microbe food. Easy to apply on new and existing trees and landscaped areas.

For Professional Use Only. For Non-Food Use Only.

Application Recommendations:

Trees (Including Inedible and non-bearing Fruit & Nut), Ornamentals and other landscape area plants: Mix 1 lb. packages of Total-Pak in 100 gallons of water.

Total-Pak is ideal for soil injection, drench for deciduous and evergreen trees and all other landscape area plants. For ground area drench method, measure area to be treated (trees, area within drip line) and apply the amount to appropriately penetrate the soil profile.

Root Injection Rates:

Start application of fertilizer approximately 3-4 feet from tree trunk and extend the same distance beyond the drip line. A grid pattern should be laid out, and injection holes should be spaced every 4 feet to a depth of 4"-8". The valve should be held open long enough to inject 1/2 gallon of fertilizer solution at each point. The goal is to apply 2 - 3 gallons of fertilizer mix per inch of tree diameter (DBH). The grid pattern should exceed the dripline (canopy edge) by one-two holes in every direction.

Greenhouse, Nursery & Landscape Rates

Application	Rate	Frequency / Notes
Tree and Shrub Care, Non-fruit bearing trees	Initial Application: 1 pound per 100 gal water. Maintenance: 1/2 pound per 100 gal water. Metric: 226-454 grams per 400 liters	Soil inject, drench or spray at appropriate rates to insure proper soil penetration. 2 inch DBH Caliper Tree requires 1.5 gallon solution within the tree drip line area and 1 foot from the flare of the tree. Either with tree soil injection or soil drench techniques
New Field Plantings and Landscape Transplants	Mix 1/1 to 1 pound material per 100 gallons. Metric: 226-454 grams per 400 liters	Drench or sprench at appropriate rates to insure proper soil penetration
Greenhouse Plants, Injection systems Greenhouse Plants, Injection systems	Initial planting: Mix 1/4-1/2 pound, per gallon stock tank at 1:100. Metric: Mix 113-226 grams per 4 liter stock tank at 1:100.	Drench or sprench at appropriate rates to insure proper soil penetration
Annual Flower and Perennial Beds	Mix 1/2 -1 pound of material per 100 gallons. Metric: 226-454 grams per 400 liters	Drench or sprench at appropriate rates to insure proper soil penetration. All screens should be removed from solution delivery system
Granular Fertilizer Addition	Mix is 1-5 pounds per 2000 pounds of fertilizer. Metric: mix 1-5 kilograms per ton.	Mix last into blender

Turf Application Rates

Application	Rate	Frequency / Notes
Regular Turf Maintenance	Mix 1/2-1 pound of pre-dissolved material in 160-200 gallons of water per acre. Metric: Rate per Hectare: Mix 226 (1 pack)-454 grams in 600-750 Liters water.	Apply Spring and/or Fall with minimum of 160-200 gallons solution per acre. Take all screen out of solution delivery system.
Overseeding, Aeration, Newly Seeded Areas, Sod	Apply 1/4 to 1 pound material per 5,000 sq. ft. Metric: apply 113-454 grams, per 465 sq meters.	Apply at time of aeration, sodding or seeding in the seed hopper or with starter fertilizer.
Hydroseeding	Mix 1/4 -1 pound material per 5,000-8000 sq.ft per 500-800 gallons of slurry. Metric, mix 113-454, per 465-745 sq. meters, per 1.8-3.0 kiloliters.	Add to tank before seed and mulch.
Sand Topping or Divot & Ball Mark repair	Mix 1/2 to 1 pound material per cubic yard. Hand Repair: Lightly sprinkle into divot hole prior to replacement of turf. Metric: 226-454 grams per metric yard	Mix thoroughly with sand just prior to use.
Granular Fertilizer Addition	Mix is 1-5 pounds per 2000 pounds of fertilizer. Metric: mix 1-5 kilograms per tonn.	Mix last into blender

NOTE: Do not apply near water, storm drains or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn/garden and sweep any product that lands on the driveway, sidewalk or street back onto your lawn/garden.