PHC® *Naturally Better*

LANDSCAPE & ARBOR

PRODUCT REFERENCE GUIDE

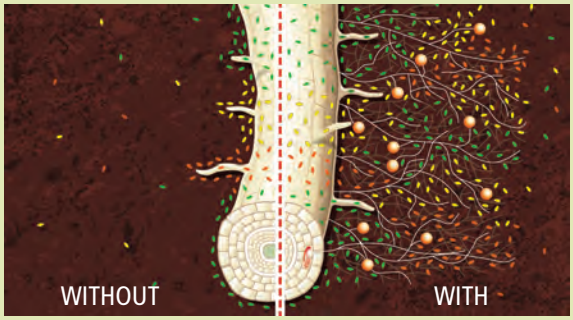
PLANT HEALTH CARE, INC.

PHC® *Naturally Better*

BEFORE AFTER

Mycorrhizal fungi are beneficial fungi that act as a secondary root system for trees, plants and shrubs. This secondary root system provides up to a 700% increase in the plant's ability to absorb important nutrients and water. You can see the dramatic difference in the two photos above.

Mycorrhizal fungi and rhizosphere bacteria improve soil fertility and plant growth:



In nature, certain species of beneficial bacteria promote healthy plant growth and soil fertility. These "good" bacteria are called rhizobacteria. While common in natural settings, their populations are often very low in our urban landscapes, nursery potting soils, and man-made landscapes. Adding natural-based products containing mycorrhizal fungi and beneficial bacteria as a part of a regular maintenance program will **improve your soil fertility** and **improve your plants' health!**

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To view products by common application, see inside back cover.

MYCORRHIZAL PRODUCTS

SOIL NUTRIENT PRODUCTS

WATER MANAGEMENT PRODUCTS

AQUATIC PRODUCTS

PLANT HEALTH CARE PROGRAMS

CONTAINS myconate

Products exhibiting this logo contain Myconate, Plant Health Care's proprietary, patented stimulant of VA mycorrhizal fungi. No other mycorrhizal products contain this unique compound that stimulates both introduced and native mycorrhizal fungi to rapidly colonize plant roots.

PHC Tree Saver

PHC Tree Saver is specifically designed to reduce transplant stress while improving soil hydration and fertility. It's applied to the root zone of trees and shrubs at planting. Five species of mycorrhizal fungi and six species of beneficial bacteria are packed into this formula to improve plant nutrition and provide sustainable soil fertility.

Key product benefits of PHC Tree Saver:

- Helps plants mitigate adverse environmental stresses such as drought, salinity and extremes of soil pH
- Improves absorption of water and minerals from the soil
- Stimulates native and inoculated VAM fungal growth and colonization of roots
- Contains Terra-Sorb planting gel

9910813	**30 x 3 oz Bag**
9910805	**150 x 3 oz Pail**
9910801	**600 oz Pail**

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

ECTOMYCORRHIZAL FUNGI 95 Million spores/Lb

95 Million spores/Lb *Pisolithus tinctorius*

VA ENDOMYCORRHIZAL (VAM) FUNGI 5300 spores/Lb

1325 spores/Lb *Entrophospora columbiana*
1325 spores/Lb *Glomus clarum*
1325 spores/Lb *Glomus etunicatum*
1325 spores/Lb *Glomus intraradices*

MICROBIAL CONTENT 324 Million cfu/Lb

54 Million cfu/Lb *Bacillus licheniformis*
54 Million cfu/Lb *Bacillus megaterium*
54 Million cfu/Lb *Bacillus polymyxa*
54 Million cfu/Lb *Bacillus subtilis*
54 Million cfu/Lb *Bacillus thuringiensis*
54 Million cfu/Lb *Paenibacillus azotofixans*
Potassium Polyacrylamide 33.3%
Formononetin 0.007%

MICROBIAL NUTRIENTS 39.4%

23.6%	Kelp Meal *(Ascophyllum nodosum)*
10.5%	Humic Acids
3.7%	Maltodextrin
1.6%	Soluble Yucca Extract *(Yucca schidigera)*

INERT INGREDIENTS 27.293%

17.6%	Greensand
5.8%	Leonardite (other than humic acids)
1%	Kaolin Clay
0.023%	Talc
2.87%	USP Mineral Oil

APPLICATION RATES

Use 1 packet per inch caliper or per 1 foot of root ball diameter.

Installation Program for Trees and Shrubs

Mix recommended amount of PHC Tree Saver into top 8 inches of backfill at installation. Apply the recommended number of Healthy Start Macro Tablets 12-8-8 two inches deep, 2 inches from rootball, then water to soil saturation. For more information about Healthy Start Macro Tablets 12-8-8 ,see Page 14.

Program rates per caliper inch	PHC Tree Saver # of 3-ounce bags	Healthy Start 12-8-8 # of 21-gram tablets
1	1	4
2	2	8
3	3	12
4	4	16
5	5	20
6	6	24
7	7	28

PHC Plant Saver 4-7-4

PHC Plant Saver is a combination product used for establishing or maintaining most plants. PHC Plant Saver contains a blend of ecto- and VA mycorrhizal fungal spores, beneficial rhizosphere bacteria, 4-7-4 fertilizer, organic amendments, and a selection of slowly available micronutrients. PHC Plant Saver is designed to restore soil fertility and address the long-term mineral requirements common to many plants.

Key product benefits of PHC Plant Saver 4-7-4:

- Increases absorption of water and soluble nutrients
- Beneficial bacteria and mycorrhizal fungi promote sustainable soil fertility
- Provides basic fertilizers and micronutrients necessary for continuing active plant development

9911926	**10# Bag**
9911906	**22# Box**
9911914	**42# Pail**

GUARANTEED ANALYSIS 4-7-4

NUTRIENT	% By Weight
Total Nitrogen (N)	4%
Available Phosphate (P_2O_5)	7%
Soluble Potash (K_2O)	4%
Magnesium (Mg)	3%
Boron(B)	0.02%
Iron (Fe)	3%
Manganese (Mn)	0.7%
Zinc (Zn)	0.4%

*Slowly Available Nitrogen from Ureaformaldehyde

Derived from: Ureaformaldehyde, Calcium Phosphate, Bone Meal, Blood Meal, Fish Meal, Feather Meal, Sulfate of Potash, Iron Sucrate, Magnesium Sucrate, Manganese Sucrate, Zinc Sucrate, Magnesium Sulfate and Sodium Tetraborate.

ECTOMYCORRHIZAL FUNGI 15 Million spores/Lb

13.5 Million spores/Lb *Pisolithus tinctorius*
1.5 Million spores/Lb *Scleroderma citrinum*

VA ENDOMYCORRHIZAL (VAM) FUNGI 1024 spores/Lb

256 spores/Lb *Entrophospora columbiana*
256 spores/Lb *Glomus etunicatum*
256 spores/Lb *Glomus clarum*
256 spores/Lb *Glomus intraradices*

MICROBIAL CONTENT 84 Million cfu/Lb

14 Million cfu/Lb *Bacillus licheniformis*
14 Million cfu/Lb *Bacillus megaterium*
14 Million cfu/Lb *Bacillus polymyxa*
14 Million cfu/Lb *Bacillus subtilis*
14 Million cfu/Lb *Bacillus thuringiensis*
14 Million cfu/Lb *Paenibacillus azotofixans*

Humic acids derived from Leonardite	11%
Formononetin	0.002%
Fertilizer Ingredients	73.308%
INERT INGREDIENTS	15.69%

DIRECTIONS FOR USE

New Plantings: Thoroughly mix product into backfill at a rate of 8 ounces (1 cup) of Plant Saver per caliper inch or each foot diameter of root ball. Use 4 ounces (1/2 cup) for 1-2 gallon plant.
Established Trees and Shrubs: Apply as a vertimulch using an earth auger with a width of 2.5 inches. Mix 4 ounces of product with soil in each hole drilled to a depth of 8 to 10 inches. Drill numerous holes in a grid pattern with 2.5 foot spacing to cover the entire area beneath the canopy. Avoid damaging large roots.
Small Plants or Bulbs: Add 1 tablespoon (1/2 ounce) per plant, and mix thoroughly with soil in the planting hole.

PHC Palm Saver 6-3-6

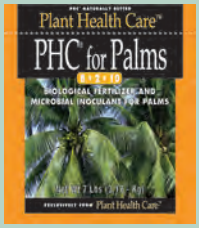
PHC Palm Saver 6-3-6 is used in establishing or maintaining palms and tropical plants. It contains a blend of VA endomycorrhizal fungal spores, beneficial rhizosphere bacteria, 6-3-6 biofertilizer, organic amendments and a comprehensive selection of micronutrients. PHC Palm Saver is designed to restore soil fertility and address the mineral requirements common to tropical plants.

Key product Benefits of PHC Palm Saver 6-3-6:

- Provides a sustainable supply of nitrogen, phosphorus and other basic minerals necessary for continuing active plant development
- Increases absorption and transfer of water and mineral nutrients from the soil
- Helps plants mitigate adverse environmental conditions, such as drought, soil salinity and extremes of soil pH

9911968	**8# Bag**
9911966	**22# Box**
9911961	**42# Pail**
9911976	**50 x 6 oz Pail**

PHC offers a range of "Naturally Better" products for palms and tropicals, including PHC® for Palms 8-2-10. See page 17 for more information.



GUARANTEED ANALYSIS 6-3-6

NUTRIENT	% by Weight
Total Nitrogen (N)	6%
5% Water-Insoluble Nitrogen (WIN)	
1% Water-Soluble Nitrogen	
Available Phosphate (P_2O_5)	3%
Soluble Potash (K_2O)	6%
Iron (Fe)	5%
0.05% Water-Soluble Iron	
Magnesium (Mg)	2%
1% Water-Soluble Magnesium	
Manganese (Mn)	4%
0.05% Water-Soluble Manganese	
Zinc (Zn)	1.5%
0.01% Water-Soluble Zinc	

Derived from: Ureaform, Blood Meal, Feather Meal, Hydrolyzed Fish Meal, Natural Sulphate of Potash, Calcium Phosphate, Iron Sucrate, Magnesium Sulfate, Magnesium Sucrate, Manganese Sucrate, Zinc Sucrate

VA Endomycorrhizal (VAM) Fungi	748 spores/Lb
187 spores/Lb	*Entrophospora columbiana*
187 spores/Lb	*Glomus efunicatum*
187 spores/Lb	*Glomus clarum*
187 spores/Lb	*Glomus intraradices*

MICROBIAL CONTENT	50 Million cfu/Lb
8.33 Million cfu/Lb	*Bacillus licheniformis*
8.33 Million cfu/Lb	*Bacillus megaterium*
8.33 Million cfu/Lb	*Bacillus polymyxa*
8.33 Million cfu/Lb	*Bacillus subtilis*
8.33 Million cfu/Lb	*Bacillus thuringiensis*
8.33 Million cfu/Lb	*Paenibacillus azotofixans*
Humic acids	7%
Formononetin	0.0015%
Fertilizer Ingredients	84.4985%

INERT INGREDIENTS	8.5%
4.0% Leonardite (other than Humic Acids)	
2.4% Green Sand	
2.1% Mineral Oil (USP)	

DIRECTIONS FOR USE

New Plantings: Mix PHC Palm Saver in the backfill around the root ball in the upper 3 to 4 inches of soil. For each 1 foot diameter of planting hole, use 12 ounces (4 scoops) of PHC Palm Saver.
Vertimulching Existing Plants: Use a 2 to 3 inch wide auger to drill the product into the soil about 1 to 2 feet from the trunk according to the following procedure: Drill product into soil at a rate of 6-oz per hole, so that product is thoroughly mixed with the soil in the hole.

NEW PLANTING APPLICATION RATES

SIZE	PHC PALM SAVER
1 gallon	3 ounces
3 gallon	6 ounces
5 gallon	12 ounces
10 gallon	18 ounces
15 gallon	24 ounces
2 foot diameter planting hole	24 ounces
3 foot diameter planting hole	36 ounces
5 foot diameter planting hole	72 ounces

PHC Flower Saver *Plus* 3-4-3

PHC Flower Saver *Plus* is a root zone treatment for landscape plantings designed to improve health, vigor and stress resistance. It contains four select species of VA mycorrhizal (VAM) fungi in long-lasting spore form that colonize roots to improve absorption of water and nutrients.

Key product benefits of PHC Flower Saver Plus 3-4-3:

- Encourages healthy growth and abundant flowering
- Helps reduce labor and replacement costs
- Contains organic fertilizers, beneficial bacteria and mycorrhizal fungi to promote natural fertility

9911452	**10# Bag**
9911440	**30# Pail**
9911441	**30# Box**

GUARANTEED ANALYSIS 3-4-3

NUTRIENT	% By Weight
Total Nitrogen (N)	3%
2.9% Water Insoluble Nitrogen	
0.1% Water Soluble Nitrogen	
Available Phosphate(P_2O_5)	4%
Soluble Potash (K_2O)	3%

Derived from: Feather Meal, Blood Meal, Bone Meal, Fish Meal, Calcium Phosphate, Sulfate of Potash.

VA ENDOMYCORRHIZAL (VAM) FUNGI	3300 spores/Lb
825 spores/Lb	*Entrophospora columbiana*
825 spores/Lb	*Glomus etunicatum*
825 spores/Lb	*Glomus clarum*
825 spores/Lb	*Glomus intraradices*

MICROBIAL CONTENT	504 Million cfu/Lb
84 Million cfu/Lb	*Bacillus licheniformis*
84 Million cfu/Lb	*Bacillus megaterium*
84 Million cfu/Lb	*Bacillus polymyxa*
84 Million cfu/Lb	*Bacillus subtilis*
84 Million cfu/Lb	*Bacillus thuringiensis*
84 Million cfu/Lb	*Paenibacillus azotofixans*
Seaweed Meal derived from *Ascophyllum nodosum*	16%
Humate derived from Leonardite	34%
22% Humic acids	
Formononetin	0.01%
Fertilizer Ingredients	47.19%

INERT INGREDIENTS	2.8%
2.8% Mineral Oil (USP)	

APPLICATION RATES

FLOWER BEDS AND GARDENS		
Rate	Method	Coverage
30 pounds	rototill	500 sq ft
10 pounds	rototill	167 sq ft

ANNUALS, PERENNIALS, ROSES, SHRUBS, AND FLOWERING VINES	
Plant Size	Amount of Product by Volume
1 gallon plant	2 tablespoons
2 gallon plant	4 tablespoons
3 gallon plant	6 tablespoons
5 gallon plant	10 tablespoons

Flower Bed Program
for Annuals and Perennials

INSTALLATION: At planting, apply the recommended rate of PHC Flower Saver Plus. Rake into the top 3 to 4 inches of soil BEFORE installing plants. If flower beds are NOT irrigated: Apply Terra-Sorb and rake into the top 3 to 4 inches of soil BEFORE installing plants. For more information about Terra-Sorb, see Page 18.

Product	Rate	Method	Coverage
PHC Flower Saver Plus 3-4-3	60 pounds	Till into the top 3 to 4 inches of soil	1,000 sq. ft.
Terra-Sorb	10 pounds	Till into the top 3 to 4 inches of soil	1,000 sq. ft.

MAINTENANCE: Tank mix together PHC for Flowers 12-16-12 and Yuccah in 50 gallons of water and apply as a soil drench after installation, and then monthly. For more information about PHC for Flowers 12-16-12, see Page 14. For more information about Yuccah, see Page 19.

Product	Rate	Water volume	Method	Coverage
PHC for Flowers 12-16-12	3 pounds	50 gallons	soil drench	1,000 sq. ft.
Yuccah	6 ounces	50 gallons	soil drench	1,000 sq. ft.

PHC Injectable for Trees

PHC Injectable for Trees is a combination inoculant containing mycorrhizal fungi (both Ecto- and VA) and beneficial rhizosphere bacteria. It is formulated for application using standard soil injection equipment.

Key product benefits of PHC Injectable for Trees:

- Improves absorption of water and minerals from the soil
- Helps plants mitigate adverse environmental stresses such as drought, salinity and extremes of soil pH
- Special packaging to ensure extended product viability

9910915 **7 x 8 oz Packet Pairs per Bag**

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

ECTOMYCORRHIZAL FUNGI	1.78 Billion spores/Lb
1.78 Billion spores/Lb *Pisolithus tinctorius*	
VA ENDOMYCORRHIZAL (VAM) FUNGI	80,000 spores/Lb
20,000 spores/Lb *Glomus clarum*	
20,000 spores/Lb *Glomus etunicatum*	
20,000 spores/Lb *Glomus intraradices*	
20,000 spores/Lb *Entrophospora columbiana*	
MICROBIAL CONTENT	24 Billion cfu/Lb
4 Billion cfu/Lb *Bacillus licheniformis*	
4 Billion cfu/Lb *Bacillus megaterium*	
4 Billion cfu/Lb *Bacillus polymyxa*	
4 Billion cfu/Lb *Bacillus subtilis*	
4 Billion cfu/Lb *Bacillus thuringiensis*	
4 Billion cfu/Lb *Streptomyces azotofixans*	
SOIL/PLANT AMENDING INGREDIENTS	% by Weight
Humic acids (derived from Leonardite)	15.8%
Formononetin	0.2%
MICROBIAL NUTRIENTS	68.9%
54.8% Maltodextrin	
11.2% Soluble seaweed extract (derived from *Ascophyllum nodosum*)	
2.7% Yeast extract	
0.2% Yucca plant extract (derived from *Yuccah schidigera*)	
INERT INGREDIENTS	15.1%
6.7% Non Humic Acid components of Leonardite	
6.0% Kaolin clay	
2.4% Polyethylene glycol	

DIRECTIONS FOR USE

Mix contents of packets A and B in 100 gallons of water and inject into soil using standard soil injection equipment. Inject the entire area beneath the canopy following a grid pattern with injections every 2.5 feet. One A and one B packet together cover 1250 square feet, or about 200 injections.

APPLICATION RATES

Caliper	Root Ball Dia.*	Rate per Tree	# of Injection Sites
2 inch	24 inch	1.5 gallons	6
3 inch	36 inch	2 gallons	8
4-5 inch	48-50 inch	3 gallons	12
6 inch	60 inch	4 gallons	16
7 inch	70 inch	5 gallons	20
8 inch	80 inch	6 gallons	24

* B&B root ball diameters are based on tree size according to American Nursery Standards.

PHC Vertimulch

If you're looking for a great treatment for trees in decline or suffering from environmental stress or extremes in soil pH...look no further. This is a dry granular inoculant applied as a vertical mulch for established trees and shrubs.

Key product benefits of PHC Vertimulch:

- Provides ectomycorrhizal and VAM fungi plus beneficial rhizosphere bacteria in an organic base
- Can be applied using standard auger drilling equipment
- Allows for inoculation of existing established trees
- Can also be used to inoculate radial trenches
- Provides aeration in compacted soils

9911110 **22# Box**
9911115 **36# Pail**

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

ECTOMYCORRHIZAL FUNGI	50 Million spores/Lb
Pisolithus tinctorius	50 Million spores/Lb
VA ENDOMYCORRHIZAL (VAM) FUNGI	888 spores/Lb
222 spores/Lb *Glomus clarum*	
222 spores/Lb *Glomus etunicatum*	
222 spores/Lb *Glomus intraradices*	
222 spores/Lb *Entrophospora columbiana*	
MICROBIAL CONTENT	150 Million cfu/Lb
25 Million cfu/Lb *Bacillus licheniformis*	
25 Million cfu/Lb *Bacillus megaterium*	
25 Million cfu/Lb *Bacillus polymyxa*	
25 Million cfu/Lb *Bacillus subtilis*	
25 Million cfu/Lb *Bacillus thuringiensis*	
25 Million cfu/Lb *Paenibacillus azotofixans*	
SOIL/PLANT AMENDING INGREDIENTS	% by Weight
Processed animal by products	46.1%
Humic acids (derived from Leonardite)	28%
Polyacrylamide hydrogel	1%
Formononetin	0.003%
INERT INGREDIENTS	24.897%
15.1% Leonardite extract (other than humic acids)	
6.5% Greensand	
2.8% Mineral Oil	
0.447% Maltodextrin	
0.05% Cayenne pepper	

DIRECTIONS FOR USE

Vertimulch Treatment: Follow standard vertical mulching procedures. Drill product into the soil at a rate of 3 ounces per hole, so that product is thoroughly mixed with the soil in the hole. Use an earth auger or similar drill with a 2.5-inch wide auger bit. Drill to a depth of about 10 inches. Drill numerous such holes to cover the entire area beneath the canopy, from the trunk outward to slightly beyond the drip line following a grid pattern with approximately 2.5 foot spacing between holes. Two hundred (200) holes at this spacing will cover about 1250 square feet, equivalent to the area beneath a 40-ft diameter canopy.

Alternate Method Using Premixed Vertimulch Fill: Mix 5-Lbs PHC Vertimulch per cubic foot of soil. Drill holes as described above and fill with mix.

Radial Trench Treatment: Mix PHC Vertimulch with mulch or fill at a rate of 3-oz (1-scoop) per square foot of trench. For example, for a 4-inch wide trench, 3-oz of Vertimulch would treat 1-linear yard of trench. For wider or narrower trenches, adjust rate accordingly based on square foot coverage of the trench.

PHC Turf Saver 3-4-3

PHC Turf Saver 3-4-3 is a mycorrhizal fungi inoculant formulated for turf installations and maintenance. It contains a blend of VA mycorrhizal fungi and rhizosphere bacteria selected for their beneficial activities in the rhizosphere of plants. PHC Turf Saver contains Myconate, a stimulant of VAM fungi to increase colonization rates of the turf roots.

9911422	**22# Box**
9911416	**50# Box**

PHC Nursery/Media Mix

PHC Nursery/Media Mix is a highly effective, dry, granular spore inoculant for establishing vesicular-arbuscular mycorrhizal (VAM) fungi symbiosis on roots of many horticultural plants, including trees and shrubs, flowers, grasses, and herbs.

9911317	**By-the-pound**

PHC Mini Plug

PHC Mini Plug is a highly concentrated, dry mix spore inoculant for establishing vesicular-arbuscular mycorrhizal (VAM) symbiosis on roots of plants grown in small container plugs, including trees and shrubs, flowers, fruits and vegetables. The spore concentration is very high (288,000 per pound) to ensure inoculation of small containers and plugs. PHC Mini Plug also contains Myconate, our proprietary stimulant of VAM fungi, to promote rapid colonization of the root system.

9911332	**4# Box**

PHC Ecto-Injectable

This product is designed specifically for ectomycorrhizal tree species such as pine, beech, spruce, birch, hemlock, hickory, basswood, pecan, larch, willow, cypress, oak, eucalyptus, cedar, chestnut and fir. PHC Ecto-Injectable contains a cocktail blend of ectomycorrhizal fungi, yucca plant extract, and introduces six species of beneficial rhizosphere bacteria.

Key product benefits of PHC Ecto-Injectable:

- Helps plants alleviate adverse environmental conditions such as drought, soil salinity and extremes of soil pH
- Rhizosphere bacteria improve soil fertility naturally
- Increases absorption and transfer of water and mineral nutrients from the soil to the plants
- Can be applied by injection, spray or drench

PHC Root Dip

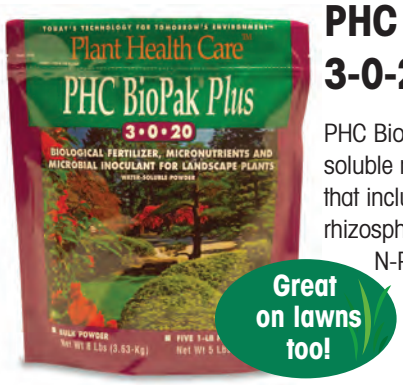
PHC Root Dip is used as a preplant root dip gel to inoculate bareroot and containerized tree seedlings with beneficial mycorrhizal fungi and rhizosphere bacteria prior to field planting or potting. It contains five superior species of endo- and ectomycorrhizal fungi that will colonize the roots of nearly all tree and shrub species under a broad range of growing conditions.

9910606	**10x3 oz Box**
9910612	**5x15 oz Box**

Colonize T&O

Colonize T&O is a water-dispersible formulation that naturally restores soil fertility and boosts the root efficiency of turf and ornamental plants. It contains beneficial bacteria to promote natural soil fertility and Myconate to increase VA mycorrhizal development.

9920816	**5# Bag**



PHC BioPak *Plus* 3-0-20

PHC BioPak *Plus* is a dry, water-soluble micronutrient treatment that includes beneficial rhizosphere bacteria and 3-0-20 N-P-K fertilizer.

BioPak Plus can be applied Spring, Summer & Fall!

Spring: Helps plants recover from winter stress. Provides minerals needed for new root growth.

Summer: Maintains vigorous plant growth and green color.

Fall: Prepares plants for winter stresses from cold, desiccating wind, lack of moisture and frozen ground.

Key product benefits of BioPak Plus 3-0-20:

- Promotes quick recovery from stress
- Reverses mineral deficiencies that cause chlorosis and necrosis
- Improves root function without stimulating excessive top growth
- Provides soluble nutrients in acidic, neutral and alkaline soils

9920140	**1# Bag**
9920143	**5 x 1# Bag**
9920161	**8# Bag**
9920260	**50# Box**

APPLICATION RATES

Application	PHC BioPak Plus	Water Volume	Application Method	Coverage
ORNAMENTAL PLANTS/POTTED PLANTS				
New plantings	1 pound	25 gallons	Drench or spray to soil saturation	1000 square feet
Maintenance	1 pound	25 gallons	Drench or spray to soil saturation	2000 square feet
Pre-Digging/ Transplanting	3 pounds	100 gallons	Drench 2 days prior to digging and immediately after installation	5 gallons per caliper inch or to soil saturation
Flower Beds	1 pound	25 to 50 gallons	Drench or spray to soil saturation	10,000 square feet
TREE/SHRUB CARE RATES				
Initial Application	2 pounds	50 to 100 gallons	Soil inject, drench or spray	1000 square feet
Maintenance	1 pound	50 to 100 gallons	Soil inject, drench or spray	1000 square feet
Iron Deficiency	3 pounds	50 to 100 gallons	Soil inject, drench or spray	1000 square feet
TURF CARE RATES				
Lawns	1 pound	50 to 100 gallons	Monthly or as needed	10,000 square feet
New Seeding/ Overseeding	1 pound	50 to 100 gallons	Every 2 to 4 weeks as needed	10,000 square feet
Hydroseeding	1 pound	Tank mix at seeding	At time of seeding	10,000 square feet
Sod Installation	5 pounds	50 to 100 gallons	2 to 3 days prior to harvest or after installation	1 acre

GUARANTEED ANALYSIS 3-0-20

NUTRIENTS	% by Weight
Total Nitrogen (N)	3%
3% Urea Nitrogen	
Soluble Potash(as K_2O)	20%
Magnesium (Mg)	1.5%
1.5% Water Soluble Magnesium (Mg)	
Sulfur (S)	4%
4% Combined Sulfur (S)	
Boron (B)	0.02%
0.02% Water Soluble Boron (B)	
Iron (Fe)	7%
7% Water Soluble Iron (Fe)	
Manganese (Mn)	0.2%
0.2% Chelated Manganese (Mn)	
Zinc (Zn)	0.2%
0.2% Chelated Zinc (Zn)	

Derived from: Urea, Ferrous Citrate, Potassium Sulfate, Manganese EDTA, Magnesium Hydroxide, Sodium Tetraborate and Zinc EDTA.

MICROBIAL CONTENT	5 Billion cfu/Lb
833 Million cfu/Lb *Bacillus licheniformis*	
833 Million cfu/Lb *Bacillus megaterium*	
833 Million cfu/Lb *Bacillus polymyxa*	
833 Million cfu/Lb *Bacillus subtilis*	
833 Million cfu/Lb *Bacillus thuringiensis*	
833 Million cfu/Lb *Paenibacillus azotofixans*	

NON PLANT FOOD INGREDIENTS	% by Weight
Humic acids	3.6%
Cold water sea kelp extract	3%
Soluble yucca plant extract	2.6%
Maltodextrin	8.7%
Inert Ingredients	6.5%

✓ PHC SOLUTION

- **In heavy or compacted soils add 1 quart Yuccah wetting agent per 100 gallons. For more information about Yuccah, see page 19.**

Healthy Start 3-4-3

Healthy Start 3-4-3 is a granular fertilizer formulated to provide organic matter and sustainable fertility for all landscape plants. Made from the finest natural ingredients, it not only provides slow-release N-P-K, but it immediately adds organic matter to the soil. Six species of rhizosphere bacteria provide a new level of sustainable fertility.

Key product benefits of Healthy Start 3-4-3:

- Restores natural fertility to disturbed soils
- Slowly releases nutrients as it biodegrades
- Adds rich organic matter to soil
- Introduces beneficial bacteria for sustained fertility throughout the growing season
- Will not burn plants or roots
- Foundation product for many landscape contractors
- Contains **no** manure, sewage or sludge

9920303	**7# Bag (This product is sold as Natural Start 3-4-3)**
9920319	**25# Bag**
9920310	**50# Bag**

GUARANTEED ANALYSIS 3-4-3

NUTRIENT	% By Weight
Total Nitrogen (N)	3%
2.8% Water Insoluble Nitrogen	
0.2% Water Soluble Nitrogen	
Available Phosphate (P_2O_5)	4%
Soluble Potash (K_2O)	3%

Derived from: Blood Meal, Fish Meal, Meat Meal, Feather Meal, Bone Meal, and Natural Sulfate of Potash.

SOIL AMENDING INGREDIENTS

Humic Acids	2%
Maltodextrin	0.2%
Fertilizer Ingredients	96.6%
Inert Ingredients	1.2%
1.2% Leonardite (other than humic acids)	

MICROBIAL CONTENT 168 Million cfu/Lb

28 Million cfu/Lb *Bacillus licheniformis*
28 Million cfu/Lb *Bacillus megaterium*
28 Million cfu/Lb *Bacillus polymyxa*
28 Million cfu/Lb *Bacillus subtilis*
28 Million cfu/Lb *Bacillus thuringiensis*
28 Million cfu/Lb *Paenibacillus azotofixans*

CONTAINS NO MANURE, SEWAGE OR SLUDGE INGREDIENTS

APPLICATION RATES

Trees & Shrubs	1/2 pound	per caliper inch
Seed & Sod installation	10 pounds	per 1000 sq. ft.
Shrub Fertilization	25 pounds	per 2000 sq. ft. of beds
Annuals	25 pounds	per 1000 sq. ft.
Perennials	1/4 pound	per 1 gallon container
Bulbs	1 teaspoon	per hole
Potting Mix	25 pounds	per cubic yard
Disturbed Soils	25-50 pounds	per 1000 sq. ft.

✓ PHC SOLUTION

- **Add Healthy Start 3-4-3 to soil to rejuvenate newly constructed sites.**
- **For quick root establishment, water-in with PHC BioPak Plus 3-0-20. For more information about this product, see page 8.**

Healthy Turf 8-1-9

Healthy Turf 8-1-9 is formulated to provide slow-release organic nutrients to turf grass. Healthy Turf 8-1-9 is derived from natural organic sources and includes beneficial rhizosphere bacteria to boost biological activity in the soil.

Key product benefits of Healthy Turf 8-1-9:

- Improves soil fertility and restores bioactivity
- Adds rich organic matter to the soil
- Releases nutrients gradually over 6 to 8 weeks
- Introduces beneficial bacteria for sustained fertility throughout the growing season
- Small, uniform granules penetrate easily through the turf canopy
- Contains **no** manure, sewage or sludge

9920347N **50# Bag**

GUARANTEED ANALYSIS 8-1-9

NUTRIENT	% By Weight
Total Nitrogen (N)	8%
1.5%	Water soluble Nitrogen
6.5%	Water Insoluble Nitrogen
Available Phosphorus (P_2O_5)	1%
Soluble Potash (K_2O)	9%

Derived from: Meat Meal, Bone Meal, Blood Meal, Feather Meal, Fish Meal, Natural Sulfate of Potash, Natural Nitrate of Soda.

SOIL AMENDING INGREDIENTS

Fertilizer Ingredients	98.9%
Inert Ingredients	1.1%
1%	Leonardite humates
0.1%	Maltodextrin

MICROBIAL CONTENT 168 Million cfu/Lb

28 Million cfu/Lb	*Bacillus licheniformis*
28 Million cfu/Lb	*Bacillus megaterium*
28 Million cfu/Lb	*Bacillus polymyxa*
28 Million cfu/Lb	*Bacillus subtilis*
28 Million cfu/Lb	*Bacillus thuringiensis*
28 Million cfu/Lb	*Paenibacillus azotofixans*

CONTAINS NO MANURE, SEWAGE OR SLUDGE INGREDIENTS

APPLICATION RATES

Rate	Coverage
Pounds of Healthy Turf 8-1-9 per 1000 sq ft	Pounds of Nitrogen and Potassium delivered per 1000 sq ft
12 pounds	1 pound
6 pounds	1/2 pound
3 pounds	1/4 pound

MAINTENANCE Apply every 6 to 8 weeks.

BROADCAST SPREADER SETTINGS*

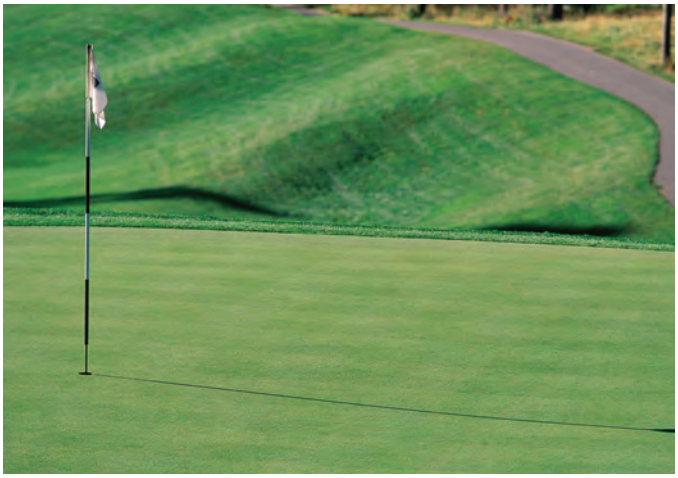
Rate (Lbs) per 1000 ft²	Speedy Green	Lesco 80-Lb	Earthway	Spyker
12	13 1/2	#19 (2x)	30 (2x)	Wide open (2x)
6	7 1/4	#19	30	Wide open
3	4 3/4	#14	20	7
Average width of spread	5 feet	10 feet	13 feet	10 feet

DROP SPREADER SETTINGS*

Rate 1000 ft²	Earthway Drop Spreader	Scotts Drop Precision Green	Scotts Drop AccuGreen
12	24	15	15
6	18	10 1/2	9 1/2
3	14	8	7 1/2
Average width of spread	Overlap Wheels	Overlap Wheels	Overlap Wheels

NOTE: 2X means 2 passes

***Spreader settings:** Spreader settings vary considerably based on your walking speed, product density, particle size and other variables. These settings are approximate, and should be used as a starting point for determining a more precise setting for your application technique.



✓ PHC SOLUTION

• Topdress heavily traveled turf with Healthy Turf 8-1-9 to improve organic content, increase beneficial microbial activity and promote fibrous root growth.

PHC for Turf 15-1-6

PHC for Turf 15-1-6 contains two forms of nitrogen – soluble for quick green-up and insoluble for long-term fertility. It is great as a bridge product between synthetic and natural treatments. PHC for Turf contains exclusive beneficial rhizosphere bacteria to create sustainable soil fertility.

Key product benefits of PHC for Turf 15-1-6:

- Natural fertility with two forms of nitrogen, soluble urea and insoluble organic protein nitrogen
- Sustainable fertility by way of natural rhizosphere bacteria
- Contains 2% water-soluble iron

9920353 **25# Bag**
9920355 **50# Bag**

GUARANTEED ANALYSIS 15-1-6

NUTRIENT	% By Weight
Total Nitrogen (N)	15%
7.5% Urea Nitrogen	
7.5% Water-Insoluble Nitrogen (WIN)	
Available Phosphate (P_2O_5)	1%
Soluble Potash (K_2O)	6%
Sulfur(S)	3%
3% Combined Sulfur	
Iron (Fe)	2%
2% Water-Soluble Iron	

Derived from: Meat Meal, Bone Meal, Blood Meal, Feather Meal, Fish Meal, Urea, Natural Sulfate of Potash, Ferrous Sulfate.

ALSO CONTAINS NON PLANT FOOD INGREDIENTS

MICROBIAL CONTENT	168 Million cfu/Lb
28 Million cfu/Lb	*Bacillus lichiniformis*
28 Million cfu/Lb	*Bacillus megaterium*
28 Million cfu/Lb	*Bacillus polymyxa*
28 Million cfu/Lb	*Bacillus subtilis*
28 Million cfu/Lb	*Bacillus thuringiensis*
28 Million cfu/Lb	*Paenibacillus azotofixans*

TOTAL INGREDIENTS	
Fertilizer Ingredients	98.9%
INERT INGREDIENTS	1.1%
1% Leonardite humates	
0.1% Maltodextrin	

APPLICATION RATES

Rate	Coverage
Pounds of PHC for Turf 15-1-6 per 1000 sq ft	Pounds of Nitrogen (N) delivered per 1000 sq ft
7 pounds	1 pound
5 pounds	3/4 pound
3 1/2 pounds	1/2 pound
1 3/4 pounds	1/4 pound

BROADCAST SPREADER SETTINGS*

Rate Lb/1000 ft²	Speedy Green	Lesco 80-Lb	Earthway	Spyker
7	8	#19	30	Wide open
3 1/2	4 1/4	#14	20	7
1 3/4	n/a	n/a	n/a	n/a
Average width of spread	5 feet	10 feet	13 feet	10 feet

DROP SPREADER SETTINGS*

Rate Lb/1000 ft²	Earthway Drop Spreader	Scotts Drop Precision Green	Scotts Drop AccuGreen
5	18	10 1/2	9 1/2
2 1/2	14	8	7 1/2
1 1/4	n/a	n/a	n/a
Average width of spread	Overlap Wheels	Overlap Wheels	Overlap Wheels

*** Spreader settings:** Spreader settings vary considerably based on your walking speed, product density, particle size and other variables. These settings are approximate, and should be used as a starting point for determining a more precise setting for your application technique.

PHC for Trees

PHC for Trees is available in three different formulations to provide more fertilization program options. All PHC for Trees formulations contain the same micro-nutrient and microbial analyses. PHC for Trees is a water-dispersible chemical and biological fertility product. Key elements are micronized so that PHC for Trees will not clog equipment. RZ-3, a new surfactant technology, helps the product to readily penetrate the soil. The chemically-based elements meet trees' nutrient needs quickly, while the beneficial microbes sustain fertility over the long term.

Standard Injection Rate:

Mix 8-Lbs (1 bag) PHC for Trees per 100 gallons of water. Apply 100 gallons per 1250 sq ft (2 quarts per injection on 2.5 foot centers) or 5 gallons per inch DBH (diameter at breast height).

Directions for Use:

Mix recommended amount of PHC for Trees with water, and inject soil to a depth of 8 to 10 inches. Start injections immediately past the root flare, covering the entire area beneath the canopy and just beyond the drip line.

For alternative use directions for compacted soils and drench applications, visit our website at www.planthealthcare.com

PHC for Trees 27-9-9

With 50 percent slow-release nitrogen

9921000 **8# Bag**
9921010 **40# Bag**

GUARANTEED ANALYSIS 27-9-9

NUTRIENT	% by Weight
Total Nitrogen (N)	27%
1% Nitrate Nitrogen	
12.5% Urea Nitrogen	
2.5% Slowly available water soluble Nitrogen*	
11% Water insoluble Nitrogen	
Available Phosphate (P_2O_5)	9%
Soluble Potash (K_2O)	9%
Boron (B)	0.02%
0.02% Soluble Boron	
Copper (Cu)	0.05%
0.05% Chelated Copper	
Iron (Fe)	0.10%
0.10% Chelated Iron	
Manganese (Mn)	0.05%
0.05% Chelated Manganese	
Molybdenum (Mo)	0.0009%
0.0009% Water Soluble Molybdenum	
Zinc (Zn)	0.05%
0.05% Chelated Zinc	

* Slowly available Nitrogen from Ureaformaldehyde

Derived from: Ureaformaldehyde, Urea, Potassium Phosphate, Potassium Nitrate,Boric Acid, Iron EDTA, Manganese EDTA, Zinc EDTA, Copper EDTA and Ammonium Molybdate.

Potential Acidity: 920-Lb Calcium carbonate equivalent per ton

NON PLANT FOOD INGREDIENTS	% by Weight
Humic acids derived from Leonardite	1.8%
Soluble seaweed extract	2.2%
Natural sugars (dextrose)	0.8%
Yeast extract	0.3%
RZ-3* Surfactant (alkoxylated glucopyranoside)	2.8%

MICROBIAL CONTENT	2.8 Billion/Lb
466 Million cfu/Lb *Bacillus licheniformis*	
466 Million cfu/Lb *Bacillus megaterium*	
466 Million cfu/Lb *Bacillus polymyxa*	
466 Million cfu/Lb *Bacillus subtilis*	
466 Million cfu/Lb *Bacillus thuringiensis*	
466 Million cfu/Lb *Paenibacillus azotofixans*	

INERT INGREDIENTS	92.1%
Fertilizer	91.1%
Leonardite extract (other than humic acids)	1%

*RZ-3 is a proprietary surfactant, US Patent #6,460,290

PHC for Trees 11-22-22 SRN

With 50 percent slow-release nitrogen

9921006 **8# Bag**
9921013 **40# Bag**

GUARANTEED ANALYSIS 11-22-22 SRN

NUTRIENT	% by Weight
Total Nitrogen (N)	11%
2.6% Ammoniacal Nitrogen	
2% Nitrate Nitrogen	
0.8% Urea	
1.2% Slowly Available Water-Soluble Nitrogen*	
4.4% Water-Insoluble Nitrogen	
Available Phosphate (P_2O_5)	22%
Soluble Potash (K_2O)	22%
Boron (B)	0.02%
0.02% Soluble Boron	
Copper (Cu)	0.05%
0.05% Chelated Copper	
Iron (Fe)	0.10%
0.10% Chelated Iron	
Manganese (Mn)	0.05%
0.05% Chelated Manganese	
Molybdenum (Mo)	0.0009%
0.0009% Water-Soluble Molybdenum	
Zinc (Zn)	0.05%
0.05% Chelated Zinc	

Derived from: Ureaformaldehyde, Ammonium Sulfate, Potassium Phosphate, Potassium Nitrate, Boric Acid, Iron EDTA, Manganese EDTA, Zinc EDTA, Copper EDTA and Ammonium Molybdate.

*Slowly available nitrogen from Ureaformaldehyde

Potential Acidity: 461-Lb Calcium carbonate equivalent per ton

NON PLANT FOOD INGREDIENTS	% by Weight
Humic acids derived from Leonardite	1.8%
Soluble seaweed extract	2.2%
Natural sugars (dextrose)	0.8%
Yeast extract	0.3%
RZ-3* Surfactant (alkoxylated glucopyranoside)	2.8%

MICROBIAL CONTENT	2.8 Billion/Lb
466 Million cfu/Lb *Bacillus licheniformis*	
466 Million cfu/Lb *Bacillus megaterium*	
466 Million cfu/Lb *Bacillus polymyxa*	
466 Million cfu/Lb *Bacillus subtilis*	
466 Million cfu/Lb *Bacillus thuringiensis*	
466 Million cfu/Lb *Paenibacillus azotofixans*	

INERT INGREDIENTS	92.1%
Fertilizer	91.1%
Leonardite extract (other than humic acids)	1%

*RZ-3 is a proprietary surfactant, US Patent #6,460,290

PHC for Trees 11-22-22

With 100 percent fully-soluble nitrogen

9921003 **8# Bag**
9921011 **40# Bag**

GUARANTEED ANALYSIS 11-22-22

NUTRIENT	% by Weight
Total Nitrogen (N)	11%
4.3% Ammoniacal Nitrogen	
2% Nitrate Nitrogen	
4.7% Urea Nitrogen	
Available Phosphate (P_2O_5)	22%
Soluble Potash (K_2O)	22%
Boron (B)	0.02%
0.02% Water-Soluble Boron	
Copper (Cu)	0.05%
0.05% Chelated Copper	
Iron (Fe)	0.10%
0.10% Chelated Iron	
Manganese (Mn)	0.05%
0.05% Chelated Manganese	
Molybdenum (Mo)	0.0009%
0.0009% Water-Soluble Molybdenum	
Zinc (Zn)	0.05%
0.05% Chelated Zinc	

Derived from: Urea, Ammonium Sulfate, Potassium Phosphate, Potassium Nitrate, Boric Acid, Iron EDTA, Manganese EDTA, Zinc EDTA, Copper EDTA and Ammonium Molybdate.

Potential Acidity: 548-Lb Calcium carbonate equivalent per ton

NON PLANT FOOD INGREDIENTS	% by Weight
Humic acids derived from Leonardite	1.8%
Soluble seaweed extract	2.2%
Natural sugars (dextrose)	0.8%
Yeast extract	0.3%
RZ-3* Surfactant (alkoxylated glucopyranoside)	2.8%

MICROBIAL CONTENT	2.8 Billion/Lb
466 Million cfu/Lb *Bacillus licheniformis*	
466 Million cfu/Lb *Bacillus megaterium*	
466 Million cfu/Lb *Bacillus polymyxa*	
466 Million cfu/Lb *Bacillus subtilis*	
466 Million cfu/Lb *Bacillus thuringiensis*	
466 Million cfu/Lb *Paenibacillus azotofixans*	

INERT INGREDIENTS	92.1%
Fertilizer	91.1%
Leonardite extract (other than humic acids)	1%

*RZ-3 is a proprietary surfactant, US Patent #6,460,290

PHC BioPak

PHC BioPak is a unique, dry, water soluble inoculant with beneficial bacteria. This product enriches the soil profile with beneficial microbes that act as a sustainable fertility "system."

Once the microbes are in place in the root zone, they solubilize phosphorus, fix atmospheric nitrogen and gradually improve soil tilth – processes that encourage healthy root growth. Live beneficial microbes reproduce in the root zone to maintain populations and sustain beneficial activities.

Key product benefits of BioPak:

- Increases organic content of the soil
- Improves fertility in the root zone
- Increases the natural bioactivity in sterile or depleted soils

9920111	**1# Jar**
9920118	**5# Bag**
9920117	**6 x 1/2# Bag**
9920115	**50# Box**

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

MICROBIAL CONTENT 45 Billion cfu/Lb

7.5 Billion cfu/Lb *Bacillus licheniformis*
7.5 Billion cfu/Lb *Bacillus megaterium*
7.5 Billion cfu/Lb *Bacillus polymyxa*
7.5 Billion cfu/Lb *Bacillus subtilis*
7.5 Billion cfu/Lb *Bacillus thuringiensis*
7.5 Billion cfu/Lb *Paenibacillus azotofixans*

HUMIC ACIDS (derived from Leonardite) 31%

MICROBIAL NUTRIENTS 43%

13.5% Maltodextrin
24% Seaweed extract (derived from *Ascophyllum nodosum*)
5.5% Yeast extract

INERT INGREDIENTS 26%

14% Leonardite extract (other than humic acids)
11% Precipitated silica
1% Polyethylene glycol

APPLICATION RATES

TREE/SHRUB CARE RATES

Application	PHC BioPak	Water Volume	Coverage	Frequency
Installation	1 pound	50 to 100 gallons	1250 square feet	At planting
Maintenance	1/2 pound	50 to 100 gallons	1250 square feet	Monthly
Stress	1 pound	50 to 100 gallons	1250 square feet	As needed

TURF CARE RATES

Application	PHC BioPak	Water Volume	Coverage	Frequency
Greens and Tees	1 pound	50 to 100 gallons	1 acre	Monthly
Fairways and Lawns	1 pound	50 to 100 gallons	1 acre	As needed
New Seeding or Overseeding	2 pounds	50 to 100 gallons	1 acre	Every 2 to 4 wks after germination
Sod Installation	2 pounds	50 to 100 gallons	1 acre	1 to 2 weeks prior to harvest or immediately after installation

ORNAMENTAL PLANTS/POTTED PLANTS

Application	PHC BioPak	Water Volume	Coverage	Frequency
Flower Beds	1/4 pound	5 to 15 gallons	5000 square feet	Every 2 to 4 weeks
Potted Plants	2 teaspoons	1 gallon	Apply 1/4 of pot volume	Every 2 to 4 weeks

IN-LINE SYSTEMS

Fertigation	PHC BioPak	Mix Tank Setting	Dilution	Frequency
Dosatron	5 pounds	5 gallons	1:100	Every 2 to 4 wks

✓ PHC SOLUTION

- **Add BioPak when soil is depleted of organic matter and biological activity. It will improve natural bioactivity.**
- **For all iron and micronutrient deficient soils and plants, use PHC BioPak Plus. On compacted soils, use Yuccah. For more information about Yuccah, see page 19.**

Healthy Start Macro Tablets 12-8-8

Healthy Start Macro Tablets are unique biological fertilizing tablets that contain nitrogen-fixing and phosphorus-solubilizing bacteria, natural humates, and slow-release organic nutrients for sustainable plant growth. These planting tablets condition the soil while fertilizing the plant to achieve healthy, sustainable growth regardless of plant species or soil type.

Key product benefits of Healthy Start Macro Tablets:

- Contains rhizosphere bacteria
- Includes an iron form that is not susceptible to leaching
- Includes humic acids, which are naturally present in forest soils, but are often lacking in managed settings
- 18 months to 2 years slow release

9920335R	**1# Jar; 7g Tablet**
9920322	**10# Box; 7g Tablet**
9920325	**25# Box; 7g Tablet**
9920323	**10# Box; 21g Tablet**
9920324	**25# Box; 21g Tablet**

GUARANTEED ANALYSIS 12-8-8

NUTRIENT	% By Weight
Total Nitrogen (N)	12%
1.65% Ammoniacal Nitrogen	
1.4% Urea Nitrogen	
3.85% Slowly available water-soluble Nitrogen	
5.1% Water insoluble Nitrogen	
Available Phosphate (P_2O_5)	8%
Soluble Potash (K_2O)	8%
Sulfur (S)	3%
3% Combined Sulfur (S)	
Iron (Fe)	2.5%
0.025% Water Soluble Iron	

Derived from: Feather Meal, Blood Meal, Fish Meal, Bone Meal, Ureaform, Methylene Ureas, Monoammonium Phosphate, Sulfate of Potash, Magnesium Sulfate and Iron Sucrate.

NON PLANT FOOD INGREDIENTS	12%
Humate derived from Leonardite	12%
7% Humic Acids	

MICROBIAL CONTENT	21 Million cfu/Lb
	(971,000 cfu/ 21-g tablet)
3.5 Million cfu/Lb *Bacillus licheniformis*	
3.5 Million cfu/Lb *Bacillus megaterium*	
3.5 Million cfu/Lb *Bacillus polymyxa*	
3.5 Million cfu/Lb *Bacillus subtilis*	
3.5 Million cfu/Lb *Bacillus thuringiensis*	
3.5 Million cfu/Lb *Paenibacillus azotofixans*	

21-gram Healthy Start Macro Tablets 12-8-8 (up to 24-month release).

PHC for Flowers 12-16-12

PHC for Flowers is formulated to improve the nutritional health, color and vigor of flowering plants. It contains quality, soluble minerals combined with yucca plant extracts, humates and beneficial soil bacteria.

Key product benefits of PHC for Flowers 12-16-12:

- Traditional fertility enhanced with PHC's rhizosphere bacteria
- Encourages healthy growth and abundant flowering
- Fully water soluble
- Provides basic fertility and more

9920736 **8# Bag**

GUARANTEED ANALYSIS 12-16-12

NUTRIENT	% By Weight
Total Nitrogen (N)	12%
3.1% Ammoniacal Nitrogen	
3.3% Nitrate Nitrogen	
5.6% Urea Nitrogen	
Available Phosphate (P_2O_5)	16%
Soluble Potash (K_2O)	12%
Copper (Cu)	0.05%
Iron (Fe)	0.15%
Manganese (Mn)	0.05%
Zinc (Zn)	0.06%

Derived from: Ammonium Phosphate, Urea, Potassium Nitrate, Copper Sulfate, Iron EDTA, Manganese EDTA, Zinc EDTA

ACTIVE INGREDIENTS	31.8%
Humic acids	1.6%
Microbial Nutrients	30.2%
28.5% Maltodextrin	
1.2% Seaweed Extract *(Ascophyllum nodosum)*	
0.5% Yeast Extract	

MICROBIAL CONTENT	4.5 Billion cfu/Lb
750 Million cfu/Lb *Bacillus licheniformis*	
750 Million cfu/Lb *Bacillus megaterium*	
750 Million cfu/Lb *Bacillus polymyxa*	
750 Million cfu/Lb *Bacillus subtilis*	
750 Million cfu/Lb *Bacillus thuringiensis*	
750 Million cfu/Lb *Paenibacillus azotofixans*	

INERT INGREDIENTS	68.2%
65.2% Fertilizer Ingredients	
1.7% Polyethylene glycol	
0.7% Non humic acid components of Leonardite extract	
0.6% Precipitated Silica	

APPLICATION RATES

Application	Rate	Suggested Water Volume	Method of Application	Coverage
Flower Beds, Roses, Bedding Plants, Gardens, Ground Covers, Trees and Shrubs	3 pounds	75 gallons	Drench or spray to soil saturation	1000 sq ft
Potted Plants	4 tsp.	1 Gallon	Drench soil	1/4 of pot volume

Compete Plus

Compete Plus is a dry, dispersible rhizosphere inoculant that contains spores of beneficial bacteria, actinomycetes and Trichoderma fungi. These microbes increase the solubility of mineral elements and fix atmospheric nitrogen while increasing nutrient availability.

The bacteria and fungi in Compete Plus are live proprietary strains selected to promote soil fertility.

Key product benefits of Compete Plus:

- Promotes soil conditions that are favorable to root development
- Colonizes the root zone with beneficial microbial populations that fix nitrogen, solubilize phosphorus and break down soil organic material
- Can be applied by soil injection or as a drench

9920421 5 x 1/2# Bag

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

MICROBIAL CONTENT	311 Million cfu/g
50 Million cfu/g *Bacillus azotofixans*	
50 Million cfu/g *Bacillus licheniformis*	
50 Million cfu/g *Bacillus megaterium*	
50 Million cfu/g *Bacillus polymyxa*	
50 Million cfu/g *Bacillus subtilis*	
50 Million cfu/g *Bacillus thuringiensis*	
1 Million cfu/g *Streptomyces griseoviridis*	
10 Million cfu/g *Trichoderma harzianum*	
MICROBIAL NUTRIENTS	66%
48% Maltodextrin	
5% Yeast extract	
13% Soluble Seaweed extract (derived from *Ascophyllum nodosum*)	
HUMIC ACIDS (derived from Leonardite)	17%
INERT INGREDIENTS	17%
8% Precipitated silica	
6% Leonardite Extract (other than humic acids)	
3% Polyethylene glycol	

APPLICATION RATES

Application	Compete Plus	Water Volume	Method of Application	Coverage
TURFGRASS/GREENS & TEES/ATHLETIC FIELDS				
Initial	4 Lbs.	50-100 gallons	Drench soil	1 acre
Maintenance (every 2-3 weeks during growing season)	2 Lbs.	50-100 gallons	Drench soil	1 acre
TREE/SHRUB CARE RATES				
Installations	1/4 Lb.	15-25 gallons	Drench soil	Water-in
Maintenance	1/2 Lb.	50 gallons	Soil Inject or Drench soil	2500 sq. ft.
Stress Recovery	1 Lb.	50 gallons	Soil Inject or Drench soil	2500 sq. ft.

The Rhody & Azalea Program

The rhododendron and azalea program is a high-concentration microbial inoculation treatment that dramatically increases microbial activity in the root zone with selected biofertilizing microbes. The intent is to improve the biological aspect of soil fertility for plants growing outside their natural habitat.

Designed with rhododendrons and azaleas in mind, the program is an effective treatment for all trees and shrubs. The program combines the microbial inoculants PHC BioPak Plus and Compete Plus, thereby providing several biofertilizing microbial species, including rhizosphere bacteria *(Bacillus)*, an actinomycete *(Streptomyces)*, and fungi *(Trichoderma)*. Together, these microbes fix nitrogen, solubilize phosphorus, and promote recycling of minerals bound in organic matter, improving soil fertility where plants need it most, the root zone. PHC BioPak Plus also provides eight important soluble minerals essential to plant nutrition.

Yuccah is added to counteract the effects of compaction and hydrophobic soils, two problems associated with poor soil structure. Yuccah acts as a spreader, helping to evenly distribute soluble products throughout the soil profile. Its natural origin as a botanical extract promotes its eventual biodegradation, contributing to microbial activity in the soil. Altogether, this program contributes to the chemical, biological and structural aspects of soil fertility.

DIRECTIONS FOR USE

- Thoroughly mix all three products in 50 gallons of water.
- Pour or spray on the soil surface, under the canopy of the plant, at the rate of 1.25 fluid ounces per square foot = 12.5 fluid ounces per 10 square foot. (Approximately 1 gallon of solution per 100 square feet).
- Apply water to rinse products into the soil.

Combined Products	Rate	Water Volume	Method	Coverage	Frequency
Compete Plus	1.5-Lb	50 gallons	Drench or spray to soil saturation	5000 sq ft	Every 4 to 6 weeks or as needed
PHC BioPak Plus	3-Lb				
Yuccah	16-oz.				

Flexx 3-0-20

Flexx is a premium water-soluble blend of beneficial rhizosphere bacteria with organic amendments, yucca plant extract and chelated micronutrients designed specifically for optimal turf health.

Flexx can be used for grow-ins, new sod installation, as well as during renovation and maintenance with all types of warm and cool season grasses.

Key product benefits of Flexx 3-0-20:

- Promotes a fibrous, deep and extensive root system
- Speeds turf recovery from damage and heavy use
- Colonizes the root zone with beneficial microbial populations that improve soil fertility
- Improves green color without promoting excessive top growth

9920238 **8# Bag**
9920243 **50# Box**

GUARANTEED ANALYSIS 3-0-20

NUTRIENT	% by Weight
Total Nitrogen (N)	3%
3% Water Soluble Nitrogen	
Soluble Potash (K_2O)	20%
Water Soluble Magnesium (Mg)	1.5%
Sulfur (S), combined	4%
Iron (Fe), complexed	7%
Manganese (Mn), chelated	0.2%

Derived from: Urea, Ferrous Sulfate, Potassium Citrate, Manganese EDTA and Magnesium Hydroxide.

MICROBIAL CONTENT	11 Billion cfu/Lb
1.83 Billion cfu/Lb	*Bacillus licheniformis*
1.83 Billion cfu/Lb	*Bacillus megaterium*
1.83 Billion cfu/Lb	*Bacillus polymyxa*
1.83 Billion cfu/Lb	*Bacillus subtilis*
1.83 Billion cfu/Lb	*Bacillus thuringiensis*
1.83 Billion cfu/Lb	*Paenibacillus azotofixans*
Humic Acids (derived from Leonardite)	3.9%
Formononetin	0.15%

MICROBIAL NUTRIENTS	16.2%
10%	Maltodextrin
3.2%	Yucca plant extract (derived from *Yucca schidigera*)
3%	Seaweed extract (derived from *Ascophyllum nodosum*)

Fertilizer Ingredients	73.35%
Inert Ingredients	6.4%

APPLICATION RATES

Application	Rate	Water Volume*	Method of Application	Coverage	Frequency
Greens & Tees	8 Lbs.	50 to 100 gallons	Drench or spray to soil saturation	50,000 sq. ft.	Every 2 weeks
Damaged Turf	16 Lbs.	50 to 100 gallons	Drench or spray to soil saturation	50,000 sq. ft.	Initial application
New Seeding/ Overseedng	8 Lbs.	50 to 100 gallons	Drench or spray to soil saturation	50,000 sq. ft.	Every 2-4 weeks as needed
Hydroseeding	8 Lbs.	Tank mix	Add to tank at seeding	50,000 sq. ft.	At time of seeding
Sod Installation	8 Lbs.	50 to 100 gallons	Drench or spray to soil saturation	50,000 sq. ft.	7 to 14 days prior to harvest or immediately after installation
Lawns	1 Lb.	50 to 100 gallons	Drench or spray to soil saturation	10,000 sq. ft.	Monthly or as needed

* Water volumes are suggested. More or less water may be used based on local practice.

PHC Humex

PHC Humex is a soluble soil conditioner that contains natural humic substances, including humic acids derived from leonardite. PHC Humex is used to improve the physical and chemical properties of poor soil, increase nutrient availability, and to help prevent precipitation in fertilizer or pesticide mixtures.

9940211 **50# Bag**

PHC SeaKelp

PHC SeaKelp is a natural plant foliar nutrient made from pure cold processed *Ascophylum nodosum* seaweed. Unlike many seaweed extracts, which can be highly alkaline, PHC SeaKelp has a slightly acid pH level of 5.0, so it is compatible with most micronutrient and pesticide formulations.

9920603 **10# Box**
9920606 **50# Box**

PHC Yuccah-SeaKelp

Yuccah-SeaKelp is a blend of dry water-soluble Seakelp and Yucca botanical extracts used as a foliar and soil drench treatment for stressed plants.

9920504 **10# Box**

PHC for Palms 8-2-10

PHC for Palms 8-2-10 is a multi-nutrient formulation designed specifically to address the common nutritional deficiencies that occur in landscape palms and tropical plants. This product combines a calculated mineral composition with fertility-enhancing bacteria to address both immediate and long-term nutritional needs of palms. For best results, inoculate palms with PHC Injectable for Trees to add mycorrhizal fungi to the root zone and help the plant absorb more water and mineral nutrients

Key product benefits of PHC for Palms 8-2-10:

- Immediately restores N-P-K macro-nutrients
- Adds magnesium, iron and manganese
- Introduces beneficial bacteria for sustained fertility

9920361 **8# Bag**
9920360 **50# Bag**

GUARANTEED ANALYSIS 8-2-10

NUTRIENT	% by Weight
Total Nitrogen (N)	8%
4% Water-Insoluble Nitrogen (N)	
4% Water-Soluble Nitrogen (N)	
Available Phosphate (P_2O_5)	2%
Soluble Potash (K_2O)	10%
Magnesium (Mg)	2%
1% Water-Soluble Magnesium	
Iron (Fe)	1%
1% Water-Soluble Iron	
Manganese (Mn)	1%
1% Water-Soluble Manganese	

Derived from: Ammonium Sulfate, Blood Meal, Feather Meal, Fish Meal, Mono Ammonium Phosphate, Polymer-Coated Sulfate of Potash, Kieserite, Manganese Sulfate, Iron Sulfate, Magnesium Sucrate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENTS

MICROBIAL CONTENT	168 Million cfu/Lb

28 Million cfu/Lb *Bacillus licheniformis*
28 Million cfu/Lb *Bacillus megaterium*
28 Million cfu/Lb *Bacillus polymyxa*
28 Million cfu/Lb *Bacillus subtilis*
28 Million cfu/Lb *Bacillus thuringiensis*
28 Million cfu/Lb *Paenibacillus azotofixans*

CONTAINS NO MANURE, SEWAGE OR SLUDGE INGREDIENTS.

DIRECTIONS FOR USE

Palms: Apply 1.5-Lbs of granular product per 100 square feet of area extending twice the diameter covered by the canopy or use 1.5-Lbs per 10 inches of trunk diameter (DBH). Broadcast the product and, if possible, rake it into the soil and cover with mulch. Irrigate promptly or at least within 24 hours. Do not treat this area near the palm with fertilizer containing higher N levels. Applications should be repeated every three months.

Note: Inoculation with mycorrhizal fungi applied by injection or vertical mulching is recommended annually for best results.

Terra-Sorb

Terra-Sorb is a super-absorbent, potassium-based co-polymer gel that significantly increases the water-holding capacity of soil. It absorbs up to 200 times its weight in water and slowly releases it to nearby plant roots. Terra-Sorb will repeatedly absorb and release water for several years, until it biodegrades naturally.

Terra-Sorb water absorbent gel has many uses. Fine granules of Terra-Sorb (Terra-Sorb fine) are used to make a transplant dip for small seedlings, or as a packaging medium for bare root plants. Larger granules of Terra-Sorb (Terra-Sorb medium) are used as a soil amendment in landscaping and horticulture to reduce watering, relieve transplant shock, and increase viability of both indoor and outdoor plants. Outdoors, the granules are tilled into an area to be planted, seeded or sodded to increase the water-holding capacity of the soil, and thereby reduce the frequency of watering. By gelling with aqueous solutions of fertilizer, Terra-Sorb can also act as a fertilizer carrier.

Key product benefits of Terra-Sorb:

- Significantly increases water-holding capacity of soil
- Prevents plant losses due to dry soil
- Slowly releases water into the root zone

FINE GRADE:

9930318	**10# Bag**
9930308	**55# Bag**

MEDIUM GRADE:

9930419	**30 x 3 oz Bag**
9930418	**10# Bag**
9930436	**55# Bag**

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

ACTIVE INGREDIENTS	% by Weight
Potassium Polyacrylamide/Acrylate Copolymer	93%
INERT INGREDIENTS: Water*	7%

*Water content is derived from atmospheric humidity absorbed during storage.

APPLICATION RATES

TREE/SHRUB CALIPER	TERRA-SORB VOLUME	3-OZ PACKETS*
1 inch	1/3 cup	2/3 packet
2 inch	1/2 cup	1 packet
3 inch	1 cup	2 packets
4 inch	1 1/2 cup	3 packets
5 inch	2 cups	4 packets
6 inch	2 1/2 cups	5 packets
7 inch	3 1/2 cups	7 packets
8 inch	4 cups	8 packets
BOX TREES	**TERRA-SORB VOLUME**	**3-OZ PACKETS***
24 inch	1 cup	2 packets
30 inch	1 1/2 cups	3 packets
36 inch	2 cups	4 packets

Note: 3-oz packets based on weight, not volume.

DIRECTIONS FOR USE- MEDIUM GRADE

Tree and Shrub Plantings: Mix Terra-Sorb Medium evenly with the backfill soil at a rate of 2 ounces (by weight) per inch caliper for Balled and Burlapped trees and shrubs, or 1 ounce (by weight) per 5 gallons for containerized trees and shrubs. Volume rates are shown in above chart.

Flower Beds and Gardens: Terra-Sorb Medium is mixed into the top 4 inches of soil at a rate of 1 pound per 100 square feet prior to planting or seeding. It can be broadcast by shaker, spreader or hand, then raked or rototilled into soil. Not recommended for topdressing already established beds.

DIRECTIONS FOR USE- FINE GRADE

Dipping Bare Root Plants: Mix Terra-Sorb Fine with water at a rate of 1 pound Terra-Sorb Fine per 20 to 25 gallons of water. Let stand until the mixture forms a slurry the consistency of gravy. Adjust gel to a thickness that permits the maximum amount of gel to adhere to the roots. Spray or dip the roots of the seedlings prior to planting.

Tree Seedling, Packing, Shipping or Planting: Mix Terra-Sorb Fine with water at a rate of 1 pound Terra-Sorb Fine per 20 to 25 gallons of water. Let stand until the mixture forms a slurry the consistency of gravy. Adjust gel to a thickness that permits the maximum amount of gel to adhere to the roots. Spray or dip the roots of the seedlings prior to storage, shipping, or field planting to prevent dessication and drought stress.

Hydromulching or Hydroseeding: Add Terra-Sorb Fine to the tank mix at a rate of 50 pounds per acre before adding fertilizer. At a normal rate of 3,000 gallons of water per acre, 50 pounds of Terra-Sorb Fine will hold 1200 gallons of water in the seed area,improving establishment and drought tolerance.

Compatibility:

Species**:** Terra-Sorb Fine can be used on all tree and grass species.

pH of Water: Although pH of 7 is ideal, Terra-Sorb Fine is effective between pH of 6 and 8

Fungicides/Fertilizers: May be applied, as usual.

Root Enhancers: May be applied, as usual.

BioPam

This product is a combination tackifier/inoculant for superior hydroseeding. BioPam binds together the various components of hydromulch forming a crust that improves water penetration and retention, protects seeds from the sun and maintains cool soil temperature. The select rhizosphere bacteria formulated in BioPam become active in the hydromulch to improve plant nutrition and establishment.

Key product benefits of BioPam:

- Helps maintain a moist environment for seed germination
- Introduces beneficial rhizosphere bacteria into the root zone to create sustainable soil fertility in hard-to-establish areas

9930702 **5# Box**

GUARANTEED ANALYSIS OF SOIL AMENDING INGREDIENTS

MICROBIAL CONTENT	18 Billion cfu/Lb
3 Billion cfu/Lb *Bacillus licheniforms*	
3 Billion cfu/Lb *Bacillus megaterium*	
3 Billion cfu/Lb *Bacillus polymyxa*	
3 Billion cfu/Lb *Bacillus subtilis*	
3 Billion cfu/Lb *Bacillus thuringiensis*	
3 Billion cfu/Lb *Paenibacillus azotofixans*	
Polyacrylamide	60%
Humic Acids	12.5%
Sea Kelp Extract *(Ascophylum nodosum)*	14%
Yeast Extract	2.2%
Sugar (dextrose)	1.8%
Inert Ingredients	9.5%
5.5% Non Humic Acid, components of Leonardite Extract	
3% Water Moisture	
1% Polythylene Glycol	

TerraPam

TerraPam is a polyacrylamide tackifier used to ensure effective hydroseeding by binding together the various components of the hydromulch. It provides easier pumping, superior soil control and better water penetration creating a moist environment for seed germination.

Key product benefits of TerraPam:

- Costs less and works better than traditional guar gum tackifiers
- Lasts 5 to 6 weeks before eventually being broken down by sunlight or biodegradation
- Will not clog equipment (lubricates pumps)
- Can reduce dust and erosion on bare soils, dirt roads or horse arenas

9930701 **6# Box**

Yuccah

Yuccah is a natural-based wetting agent and soil penetrant. It is 90% derived from *Yucca schidigera,* a unique desert plant that produces natural surfactant compounds to help it manage water more efficiently. These surfactant compounds help improve the spreadability and soaking effect of water, even in very dry, water resistant soils. Yuccah's natural surfactants have been performance-enhanced by the addition of a small amount (10%) of a commercial-grade horticultural surfactant. Yuccah is a safe alternative to 100% chemical wetting agents and an ideal choice for Integrated Pest Management (IPM) programs.

Key product benefits of Yuccah:

- Increases water penetration for soil drench and injection treatments
- Alleviates dry spots
- Acts as an adjuvant for wettable pesticides or fertilizers, increasing their spreadability

9930604 **4 x 1 Gallon Case**
9930606 **2 x 2.5 Gallon Case**
9930609 **55 Gallon Drum**

GUARANTEED ANALYSIS

INGREDIENTS	% by Weight
Yucca schidigera plant extract	90%
Copolymerized alkane oxides (non-ionic surfactant)	10%

APPLICATION RATES

TREE/SHRUB CARE RATES

Application	Yuccah	Water Volume	Coverage	Frequency
Installation or Stress Recovery	2 quarts	100 gallons	1250 square feet	At planting
Maintenance	1 quart	50 to 100 gallons	1250 square feet	Monthly

ORNAMENTAL PLANTS/POTTED PLANTS

Application	Yuccah	Water Volume	Coverage	Frequency
Flower Beds	6 ounces	50 gallons	1000 square feet	Every 2 to 4 weeks
Potted Plants	1 tsp.	1 gallon	Apply 1/4 of pot volume	Every 2 to 4 weeks

OTHER APPLICATIONS

Application	Yuccah	Water Volume	Coverage	Frequency
Problem Soils (compaction)	12 ounces	100 gallons	1000 square feet	Every 2 to 4 weeks
Hydroseeding	2 gallons	tank capacity	1 acre	As needed

Pond Saver

Pond Saver is a concentrated, dry microbial product containing a proprietary blend of bacteria that quickly biodegrade the nutrients, organic matter and hydrocarbons in water that contribute to sludge, clouding and foul odors. These naturally-occurring bacteria were selected for their ability to quickly clean and deodorize nutrient-rich waters. Pond Saver is a natural, biodegradable product that is nontoxic to humans, plants and animals, including fish.

Key product benefits of Pond Saver:

- Improves water clarity and quality
- Can reduce sludge and organic sediment buildup with regular use
- Controls unpleasant odors

9950124 **5# Bag**
9950105 **25# Pail**

GUARANTEED ANALYSIS	
SAFE, NATURAL AQUATIC BACTERIA	
Minimum count	1 Billion cfu/g
INERT INGREDIENTS	
Ground Peanut Shells	

APPLICATION RATES

Purpose	Rate	Method
Small ornamental ponds	1 tablespoon per 1,000 gal every two weeks	Disperse directly into pond water
Large ponds and lakes	**Initial Dose:** 3 pounds per acre-foot **Maintenance Dose:** 1/2 pound per acre-foot	Mix in a bucket of pond water, allow to soak for 2-4 hours, pour into pond along edges. Apply maintenance dose every 2-4 weeks.

1 acre-ft = 1 acre area, 1-ft deep; or about 325,000 gallons

Mosquito Dunks

Under typical conditions, these disk-shaped, floating briquettes control mosquito larvae for 30 days or more. One dunk treats up to 100 sq. ft. of standing water. These dunks can be used in all types of mosquito breeding areas, and are safe for humans, fish and wildlife.

5000097 **20 Dunks per Card**

GUARANTEED ANALYSIS	
ACTIVE INGREDIENT	
Bacillus thuringiensis Berliner var israelensis, Serotype H-14, primary powder, 7000 Aedes aegypti (AA) International Toxic Units (ITU) per mg (Dry weight basis)	10%
INERT INGREDIENTS	90%

APPLICATION RATES (Surface area of standing water)

1–5 sq ft	5–25 sq ft	25–100 sq ft	Above 100 sq ft
1/4 Dunk	1/2 Dunk	1 Dunk	1 Dunk per 100 sq ft

Common Applications for Successful Installations and Maintenance

APPLICATION	PHC PRODUCT RECOMMENDATION	PAGE #
Tree & Shrub Installations	PHC Tree Saver, PHC Plant Saver 4-7-4, Healthy Start 3-4-3 Healthy Start Macro Tabs 12-8-8, Terra-Sorb	2, 3, 9, 14, 18
Flower Bed Installations	PHC Flower Saver Plus 3-4-3, PHC for Flowers 12-16-12, Terra-Sorb, Yuccah	5, 14, 18, 19
Turf Grass Installations	PHC Turf Saver 3-4-3, Healthy Turf 8-1-9, PHC for Turf 15-1-6, Flexx 3-0-20	7, 10, 11, 16
Tree & Shrub Maintenance	PHC Ecto-Injectable, PHC Injectable for Trees, PHC Vertimulch PHC BioPak Plus 3-0-20, PHC for Trees, Compete Plus, Yuccah	7, 8, 12, 15, 19
Flower Bed Maintenance	PHC for Flowers 12-16-12, Yuccah	14, 19
Turf Grass Maintenance	Colonize T&O, Healthy Turf 8-1-9, PHC for Turf 15-1-6, Flexx 3-0-20, Yuccah	7, 10, 11, 16, 19
Hydroseeding	PHC BioPak, BioPam & TerraPam	13, 19
Pond Care	Pond Saver, Mosquito Dunks	20
Palm and Tropical Plant Installations	PHC Palm Saver 6-3-6, PHC for Palms 8-2-10	4, 17
Palm and Tropical Plant Maintenance	PHC Palm Saver 6-3-6, PHC Injectable for Trees, PHC for Palms 8-2-10	4, 6, 17
PROBLEM	**PHC SOLUTION**	**PAGE #**
Nutrient Deficiencies	PHC BioPak Plus 3-0-20, Healthy Start 3-4-3, Healthy Turf 8-1-9, PHC for Turf 15-1-6, PHC for Trees, PHC for Flowers 12-16-12 Flexx 3-0-20, PHC for Palms 8-2-10	8, 9, 10, 11, 12, 14, 16, 17
Hydrophobic Soils	PHC Vertimulch, PHC BioPak Plus 3-0-20, Yuccah	6, 8, 19
Chlorosis	PHC BioPak Plus 3-0-20, Flexx 3-0-20	8, 16
Soil Compaction	PHC Plant Saver 4-7-4, PHC Palm Saver, PHC Injectable for Trees, PHC Ecto-Injectable, PHC Vertimulch, Terra-Sorb, Yuccah	3, 4, 6, 7, 18, 19
Depleted Soils	PHC BioPak Plus 3-0-20, Healthy Start 3-4-3, Healthy Turf 8-1-9, PHC for Turf 15-1-6, PHC for Trees, PHC for Flowers 12-16-12 Flexx 3-0-20, PHC for Palms 8-2-10	8, 9, 10, 11, 12, 14, 16, 17
Drought Stress	PHC Vertimulch, PHC BioPak Plus 3-0-20, Flexx 3-0-20, Terra-Sorb, Yuccah	6, 8, 16, 18, 19
Water Management	Terra-Sorb, Yuccah	18, 19
Relocating Large Trees/ Shrubs	PHC Tree Saver, PHC Plant Saver 4-7-4, PHC Injectable for Trees, PHC Ecto-Injectable, PHC Vertimulch, Healthy Start 3-4-3, Healthy Start Macro Tabs 12-8-8, Terra-Sorb	2, 3, 6, 7, 9, 14, 18
Construction Damaged Root System	PHC Plant Saver 4-7-4, PHC Injectable for Trees, PHC Ecto-Injectable, PHC Vertimulch, PHC BioPak Plus 3-0-20, Yuccah	3, 6, 7, 8, 19

Plant Health Care offers a wide range of "Naturally Better" products for use in agriculture, commercial landscaping, horticulture and land reclamation industries. Headquartered in Pittsburgh, Pennsylvania, Plant Health Care has global reach with operations throughout the world.

For more information about the company and our products, visit our website at www.planthealthcare.com.

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