



VigaROOT®

For Professional Golf and Turf Applications

GENERAL DESCRIPTION

VigaROOT® is a dry soluble combination of chelated iron, chelated manganese, chelated zinc, natural humic substances, seaweed extract, yucca, and a proprietary blend of natural sugars, vitamins, amino acids and beneficial bacteria. VigaROOT® is used in spray application programs to reduce stress and stimulate root growth through enhanced water and nutrient uptake, and to correct micronutrient deficiencies.

VigaROOT® will get the plant root system back into production when stressed or damaged, improve soils by stimulating the energy system for soil microorganisms, and correct iron and micronutrient deficiencies through foliar and root uptake.

PACKAGING

Available in 8x3 pound foil packets.

DIRECTIONS FOR USE

VigaROOT® can be used on established turf with pesticides and fertilizers to aid in stress recovery, and for sod preharvest or after installation to enhance root regeneration and help sod tack quickly

Since the micronutrients are fully chelated, VigaROOT® can be tank mixed with fertilizers containing phosphorus and/or slow release nitrogen without causing precipitation or gelling.

RECOMMENDED RATES

Application	Rate/Acre	Packs/Acre	Timing
Established greens and tees of cool-season turf <i>(Late Spring through early Fall)</i>	3 lbs.	1 foil pack	Every two (2) weeks
Established Greens and Tees of warm-season turf	3 lbs.	1 foil pack	Every two (2) weeks through growing season.
Newly seeded areas, grow-ins, renovations, overseed	3 lbs.	1 foil pack	2-3 times after first mowing at two (2) week intervals through growing season
Overseeded warm-season turf	3 lbs.	1 foil pack	Every two (2) weeks throughout winter months
Fairways	3 lbs.	1 foil pack	1-2 times at 2-week intervals to aid in recovery from tournament or pest damage
Sports Fields & Lawns - Commercial, residential	3 lbs.	1 foil pack	1-2 times per month during growing season
Sod producers and new sod installations	6 lbs.	2 foil packs	30-45 days prior to harvest (lift) and immediately after installation
Trees and Shrubs (soil drench or deep root feeding)	3-6 lbs.	1-2 foil packs per 100 gals of mix solution (378 Liters)	Soil-inject or apply 5 gallons (18.9 L) of tank mix solution to root ball when transplanting
Annual Bedding Plants	3 lbs.	1 foil pack per 100 gals of mix solution (378 Liters)	Use as a soil drench at first watering

*Note: Minimum dilution is 50 gallons (189 Liters) of water per acre.

**GUARANTEED
ANALYSIS AND
NON-PLANT
FOOD
INGREDIENTS**

0-0-2		NON PLANT FOOD INGREDIENTS	
Soluble Potash (K2O)	2.00%	Spray Dry Yucca Extract.....	14.5%
Magnesium (Mg) 0.50% <i>water soluble</i>		Humates and Humic Acids	6.5%
<i>magnesium</i>	0.50%	Seaweed Extract	5.5%
Iron (Fe) 7% <i>Chelated iron</i>	7.00%	Natural Sugars (sucrose), Vitamins (B-Complex, K), Amino Acids and Beneficial Bacteria	3.0%
Manganese (Mn) 0.50% <i>chelated</i>		Nitrogen Fixing Bacillus.....	Approx. 9 billion/lb.
<i>manganese</i>	0.50%	Phosphorus Solubilizing Bacillus...Approx.	18 billion/lb.
Zinc (Zn) 1.00% <i>chelated zinc</i>	1.00%		
<i>Derived from: Potassium Hydroxide, Seaweed Extract, Magnesium Sulfate, Iron EDTA, Manganese EDTA and Zinc EDTA</i>			

INGREDIENTS

Humic Acids

- Rich in auxin type substances which enhance antioxidant synthesis - important to increase plant metabolism under stress conditions.
- An important high carbon food source for soil microorganisms.
- Improves the permeability of cell wall membranes in roots allowing more rapid absorption of nutrients essential to plant health.
- Especially helpful on high sand content soils.

Seaweed Extract

- Contains high levels of cytokinins, which are normally synthesized in plant roots (cytokinins are known to promote cell division, lateral bud growth, and delay the aging process of plant tissue).
- Improves plant metabolism by increasing antioxidant synthesis under stress conditions.
- Stimulates root growth after root systems are cut, damaged by disease or root feeding insects, or are not fully viable due to temperature, moisture or salt stress conditions.

Sucrose

- Serves as high energy food source for plants and soil microorganisms.

B-Complex and K Vitamins

- Vitamins are important catalysts to enhance and drive plant growth metabolism. A plant is capable of synthesizing vitamins, but root or leaf tissue loss decreases a plant's ability to manufacture them. For example, vitamin B1 is widely used in nursery plant cuttings to aid in rooting.

Amino Acids

- Amino acids are the building blocks of protein which are essential for plant metabolism.

Beneficial Bacteria

- VigaROOT® contains free-living nitrogen fixing bacteria which make atmospheric nitrogen available to the plant. These bacteria are long lasting and do not require a host plant to survive. Phosphorus is normally quite insoluble in soils but contributes to root growth. Phosphorus solubilizing bacteria increase phosphorus availability.

Spray Dried Yucca Extract

- VigaROOT® contains a fully water-soluble extract of *Yucca schidegera*, providing a naturally-occurring source of plant saponins, and simple and complex sugars. This high quality extract acts as a soil surfactant and stimulus for beneficial microbial activity.

Macronutrients

- Magnesium: essential element of chlorophyll; also required for protein configuration and maintenance of cellular pH and ionic balance.
- Potassium: the most abundant nutrient in cells and essential in the regulation of cellular osmotic potential and thus plant water relations; has primary roles in enzyme activation, protein synthesis, and mediation of photosynthesis.
- Sulfur: major component of amino acids methionine and cystine. Essential for plant proteins.

Micronutrients

- Iron: essential for synthesis of such proteins as cytochromes and peroxidase; required for biosynthesis of chlorophyll.
- Manganese: an essential co-factor for the activation of numerous enzymes; necessary for photosynthetic activity, root cell elongation and lipid metabolism.
- Zinc: essential structural and functional role in many enzyme reactions; intimately involved in carbohydrate metabolism, particularly in leaves, and metabolism of plant auxins; required for the maintenance of cell membrane integrity.