VERDUR MN®

For the treatment of shade tree chlorosis symptoms caused by maganese deficiency

Manganese deficiencies are the most common cause of shade tree chlorosis. VERDUR MN significantly reduces interveinal chlorosis symptoms and increases chlorophyll production for up to 3 growing seasons. VERDUR MN improves tree vigor and extensively augments the natural green coloration of trees, restoring important aesthetic qualities and attributes of shade trees

If root system deficiency is the cause of iron deficiency, VERDUR MN should be applied in combination with Cambistat and other soil treatments that will enhance root

Guaranteed Analysis	
Manganese (Mn)	31.80%
31.8% Water Soluble Manganese	
Manganese sulfate monohydrate	
Other Ingredients:	68.20%
Total:	**100.0%**

NET CONTENTS: 488 g (17.2 oz)

Contents will treat up to 100 DBH inches

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FAILURE TO FOLLOW THE USE DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN PLANT INJURY

Distributed for:

Rainbow™ ECOSCIENCE

Rainbow Treecare Scientific Advancements DBA:
Rainbow Ecoscience
11571 K-Tel Dr. Minnetonka, MN 55343
1-877-272-6747
www.rainbowecoscience.com

WARRANTY DISCLAIMER

Rainbow Ecoscience warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Rainbow Ecoscience **MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of this product. Tree injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Rainbow Treecare Scientific Advancements or the seller. All such risks shall be assumed by the buyer.

To obtain further information on this product, visit our website at www.treecarescience.com

Storage: Keep tightly closed. Protect from light and store in a dry ventilated area.

Container Disposal: Dispose in a sanitary landfill, by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

DIRECTIONS FOR USE

Applications of VERDUR MN can be made from the time of leaf emergence through the growing season using the LOW RATE. Applications at the HIGH RATE dosage can be made just prior to leaf drop or after leaf drop in the fall.

Re-apply VERDUR MN when chlorotic symptoms reappear. In situations where the cause of chlorosis is not apparent, a soil test and / or leaf tissue test may assist in diagnosing the cause of chlorosis. Warning: Application made during the growing season using the HIGH RATE may result in leaf burn and premature leaf drop.

Trees injected with VERDUR MN that do not show improvement may be affected by other problems such as drought, iron deficiency, soil compaction, and/or insect or disease. Consult Rainbow Ecoscience for specific management protocols.

Note: Using alkaline water will reduce solubility. It may be necessary to use an acidifying agent to lower the pH.

MIXING & DOSING

LOW RATE: (Growing Season)
1 level teaspoon per inch of Diameter at Breast Height (DBH), measured 4.5' above the ground.

HIGH RATE: (Late Summer / Fall)
3 level teaspoons (or one level tablespoon) per inch of Diameter at Breast Height (DBH), measured 4.5' above the ground.

Mix VERDUR MN with 1/2 gallon of water for every 10 diameter inches.

Macro-Infusion

Timing of Application

- Applications of VERDUR Mn can be made from the time of leaf emergence through the growing season using the LOW RATE.
- Applications at higher dosage rates can be made just prior to leaf drop or after leaf drop in the fall (HIGH RATE).
- Application made during the growing season using the HIGH RATE may result in leaf burn and premature leaf drop.

Step 1 – Inspect the Tree

- Determine how much root flare excavation is needed
- Measure the diameter of the tree at 4' 6" above ground level (DBH)
- Look for root rot or significant decay in the root collar area – if present do not treat
- Significant canopy die back or stress may compromise uptake time and distribution, and be a sign of a serious problem slowly killing the tree

Step 2 – Excavate the Root Flares

- Use a shovel and trowel to remove sod and soil without damaging the tree
- Thoroughly brush soil from root flares with a hand broom
- Infusion sites should be 8-10 inches below the top of the root flare
- Soil left on the root flare can dull the bit and plug the xylem
- If sod is carefully removed it can facilitate fast cleanup

Step 3 – Drilling the Holes

- Use a sharp, 15/64" high helix drill bit (change every 5-10 trees)
- Drill perpendicular to the surface of the flare
- Drill one inch into the root flare or one inch past the bark
- Drill at slow speeds, and do not unnecessarily spin the bit in the hole
- Use 1.5 - 2 infusion sites (in the root flare) per inch (DBH)
  - Place at least one infusion site on each root flare
  - Do not place infusion sites into or below dead tissue
  - Do not drill into deep valleys or sunken areas

Step 4 – Inserting the Tees

- Check each tee to be sure it is not plugged and replace badly damaged tees
- Firmly insert tees by hand
- Attach tubing from the solution reservoir to feed into the harness in 2 locations. These 2 sites should be on opposite sides of tree
  - Plugged tees will prevent that portion of the xylem from receiving chemical
  - The only vascular tissue that conducts water is the current year's xylem

Step 5 – Starting the Infusion

- Pull out 2 tees on opposite sides of the tree
- Pressurize the tank and bleed the air out of the line
- With all air out of harness, re-insert the 2 tees and check for leaks
- Maintain pressure at 15 - 30 psi
- Lightly tap any leaking tees
  - Increasing the pressure will not make the infusion go faster
  - If a tee persists in leaking, drill a new hole or bypass it with a longer piece of tubing
  - Use a very small hammer to tap leaking tees – this helps prevent driving them in too far

Step 6 – Mixing the Chemical

LOW RATE: 1 level teaspoon per inch of Diameter at Breast Height (DBH), measured 4' 6" above the ground.

HIGH RATE: 3 level teaspoons (or 1 level Tablespoon) per inch of Diameter at Breast Height (DBH), measured 4' 6" above the ground.

Mix VERDUR with 1/2 gallon of water for every 10 diameter inches.

1. Measure tree diameter at breast height (4-1/2 feet above ground level) with a diameter tape.

2. Determine the amount of water and fill tank with half the required amount of water.

3. Add Verdur Mn

4. Add the remaining half of the water to solution and vigorously mix until Verdur Mn has completely dissolved.

Step 7 – During the Infusion

- Monitor tees for leaks
- Maintain pressure at 15 - 30 psi.
- Pack other equipment such as drill and unused chemical, etc.
- Prepare other trees on site for treatment

Step 8 – Cleanup

- After all of the solution has emptied and air is drawn into the harness, depressurize the system and remove tees from the tree.
- Replace soil and sod around the base of the tree. It is not necessary to treat drill holes with wound paint or other sealing compounds.