



MANGANESE CHELATE 5%

ORGANIC CHELATE WITH 2% SULFUR

GUARANTEED ANALYSIS:

Manganese (Mn)5%
5% Chelated Manganese (Mn)
Derived From: Manganese Glucoheptonate. Chelating Agent:
Glucoheptonate.
Weight per gallon10.42 lbs.

FEATURES & BENEFITS:

- Liquid for easy application
- Natural organic chelating agent
- Excellent for calcareous and high pH soil conditions
- Excellent for foliar and root applications
- Compatible with technical materials
- Can be used through irrigation systems

PRODUCT DESCRIPTION:

5% Manganese is formulated in a convenient easy to use liquid form that will not clog or corrode spray equipment. It is recommended for soil or foliar application to those crops where Manganese sprays have been proven effective. 5% Manganese is a 100% natural organic sugar acid chelate. This true solution provides Mn in a soluble form, readily available for plant uptake. 5% Manganese is ideal for alkaline soil conditions since it retains a negative charge and is not attracted to negatively charged soil particles. 5% Manganese can correct minor deficiencies or can be used through out the growing season in a regular maintenance program where soils are known to be deficient in magnesium. This chelate is compatible with most technical materials and non-phosphate fertilizers. It is very important that Manganese deficiencies be treated before visual symptoms appear to ensure proper yield. Rates of application will vary depending on the severity of the deficiency, climate and soil conditions and methods of application. Consult your Local State Agricultural Experiment Station or Extension Specialist for advice in selecting treatments from this label to best-fit local conditions.

COMPATIBILITY:

5% Manganese is ideal for mixing with acid sensitive technical materials. This chelate is not compatible with phosphate fertilizers and must be mixed and applied separately. 5% Manganese is compatible with other products from the Growth Products Micronutrient line. DO NOT TANK MIX WITH PHOSPHATE FERTILIZERS.

DEFICIENCY SYMPTOMS:

Deficiencies occur mostly in low temperatures and water logged soils. Manganese deficiencies are generally found in neutral (7 pH) to alkaline soils which are high in calcium; Soils high in clay and low in organic matter with pH greater than 7.5 or sandy soils with pH higher than 6.0. Symptoms in soybeans, tomatoes and beets leaves appear as pale green to yellow-red color between green veins. Tips of small grains turn gray to white (gray-speck in oats). Most plants deficient in Manganese appear mottled with yellowing with veins remaining dark green to olive.

FUNCTIONS OF MANGANESE IN THE PLANT:

Manganese, a secondary nutrient, is essential for the synthesis of chlorophyll and is important in photosynthesis and nitrate assimilation in plants. Manganese is essential for the assimilation of carbon dioxide in photosynthesis. It functions in the formation of riboflavin, ascorbic acid and carotene.

SUGGESTED APPLICATION:

Fruit and Nut Crops: Almonds, Apples, and Pears:

Soil: In early spring, apply ½ - 1 gallon per acre with pesticide, irrigation water or nitrogen fertilizer. Multiple applications may be used. Product may be applied as a broadcast spray or as a sidedress application.

Foliar: Shortly after trees have leafed out, apply 1-2 quarts per acre with sufficient water to ensure adequate coverage. Multiple treatments may be used. Apply as a thorough cover spray, dormant or delayed dormant spray with oil or pesticides. Repeat at petal fall at 1-2 quarts per acre. Do not apply during bloom. Apply when trees are growing vigorously and not under stress. Product may be applied to with-

in 1 week of harvest. To ensure even distribution on leaf surface and increase effectiveness of foliar application, a small amount of wetting agent or detergent may be added. Caution: If label instructions are not followed for foliar application, phytotoxicity may occur.

Apricots, Nectarines, Peaches, Plums, Prunes, Cherries:

Soil: In early spring, apply ½ - 1 gallon per acre with pesticide, irrigation water or nitrogen fertilizer. Multiple applications may be used. Product may be applied as a broadcast spray or as a sidedress application.

Foliar: Shortly after trees have leafed out, apply 1 quart per acre with sufficient water to ensure adequate coverage. Multiple applications may be used. Apply as a thorough cover spray, dormant or delayed dormant spray with oil or pesticides. Repeat at petal fall at 1 quart per acre. Do not apply during bloom. Apply when trees are growing vigorously and not under stress. Product may be applied to within 1 week of harvest. Do not apply more than 2 quarts per acre to sensitive varieties of peaches, plums or cherries. To ensure even distribution on the leaf surface and increase the effectiveness of foliar application, a small amount of wetting agent or detergent may be added. Caution: If label instructions are not followed for foliar application, phytotoxicity may occur.

Citrus Crops:

Soil: In early spring, after new growth flush, apply ½ -1 gallon per acre with pesticide, irrigation water or nitrogen fertilizer as a sidedress or broadcast application.

Foliar: Apply 1-2 quarts per acre with sufficient water during spring and fall flush growth. Repeat during the growth season a 1-quart per acre with pesticide cover sprays. Do not apply during bloom.

Grapes:

Apply 1 quart per acre before bloom as a foliar or soil application. Add 1 pint per acre to each pesticide spray. For best results, apply 1 quart per acre at bud swell and repeat when shoots are 4-6 inches tall. Product can be applied until 1 month from harvest.

Other Fruit, Nut and Berry Crops:

Soil: In early spring, apply ½ -1 gallon per acre with pesticide, irrigation water or nitrogen fertilizer as a sidedress or broadcast application.

Foliar: Apply 1 quart per acre with sufficient water as a thorough cover spray, dormant or delayed dormant. Product may be mixed with oil or pesticide. Repeat same rate at petal

fall and as needed until 1 week from harvest. Do not apply during bloom.

Legumes:

Soil: Apply 1 - 2 quarts per acre with irrigation water, pesticides or nitrogen fertilizer as a sidedress or broadcast application before the 5th trifoliate stage.

Foliar: Apply 1 quart per acre to foliage with sufficient water when plants are between the 2nd and 4th trifoliate stage. Apply 1-2 pints per acre as needed until 2 weeks of harvest. Do not apply during bloom.

Corn, Cotton, Sorghum and other Field and Vegetable Crops:

Soil: Apply 1 - 2 quarts per acre with pesticides, irrigation water or nitrogen fertilizer as a broadcast or banded application at or immediately after planting.

Foliar: Apply 1-2 pints per acre with each pesticide application prior to bloom. Continue the same rate after bloom every 21 days until 2 weeks prior to harvest.

Potatoes:

Soil: Apply 2-3 quarts per acre with irrigation water, pesticides or nitrogen fertilizer as a banded or broadcast application at or near planting.

Foliar: In early spring, apply ½ -1 quart per acre with sufficient water to give complete coverage. Repeat application every 2-4 weeks, especially where deficiency is known to occur. Do not apply during bloom.

Small Grains including Rice:

Soil: Apply 1 -2 quarts per acre with pesticides, irrigation water or nitrogen fertilizer as a broadcast, banded or sidedress application at planting or within 2 weeks after emergence.

Foliar: Apply 1-2 pints per acre with sufficient water for thorough coverage 30 days after planting and before flowering. Do not apply during bloom. Repeat same rate every 21 days until 2 weeks before harvest. Split applications are preferred over a single application.

*** Applications should be made in the early morning when humidity is high. For foliar applications, plants should be actively growing and not under stress. Delay cutting or pruning as long as practical after application to permit maximum leaf uptake and translocation of nutrients.

Suggested Dilution Rates:

Air: 10-20 gallons of water per acre

Ground: 50-100 gallons of water per acre

Tree Crops: Dilute sprays-100-300 gallons of water per acre

STORAGE & HANDLING:

Mixing: 5% Manganese must first be diluted with water prior to mixing with other materials.

5% Manganese should not be added as a concentrated to highly alkaline materials. Do not contaminate water, food or feed by storage or disposal. Triple rinse container; empty rinse water into spray tank. Dispose of empty container according to approved local practices; contact county agricultural commissioner for disposal information.

CONDITION OF SALE:

Follow directions carefully. Timing and methods of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. Buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given herewith.

Manufactured Exclusively by:
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PRECAUTIONARY STATEMENTS: Caution: Keep Out Of Reach Of Children. Avoid contact with eye. Harmful if swallowed. Avoid skin contact. Causes eye and skin irritations. In case of contact, wash the affected areas with water immediately and continue washing for 15 minutes. Seek medical attention if irritation persists.