SYSTEMIC

BIOMIN™ MANGANESE

Soluble Powder,
Single Mineral Biomin Manganese

GUARANTEED ANALYSIS

Dry Weight Basis %/w/w

Manganese (Mn) 18.0

As amino acid Chelate

Dry Weight Basis %/w/w

Nitrogen (N) 4.8

As amino acid

GENERAL INFORMATION

Biomin Manganese is an amino acid chelated mineral. The chelating agent is mainly glycine, the smallest amino acid commonly used by and found in plants. The unique formulation of **Biomin Manganese** classifies it at the top of the range of all chelated minerals.

Biomin Manganese is a readily bio-available plant single mineral product. The highlights of such a product include almost total absorption within a few hours after application. The chelating agent Glycine prevents the precipitation of the product and enables all the minerals to move freely inside the plant making the product highly systemic.

Biomin Manganese is ideal for all crops, especially those growing in alkaline soils.

ADVANTAGES & BENEFITS

Biomin Manganese is a bio-available organic plant nutrient that is systemic, readily available and non-phytotoxic.

Biomin Manganese is very stable in formulation and can be used on all horticultural crops at almost any stage of growth

Biomin Manganese:-

1) Delivers Manganese at any stage of the season
2) Corrects Manganese deficiencies in a prompt manner to aid plants in healthy continued growth.

Biomin Manganese plays an important role in delivering Manganese to citrus crops which have a high demand for this element.

Biomin Manganese is buffered in order to maintain the levels of this element in the plant even when used on alkaline soils where it is difficult to keep Manganese from becoming less mobile within the plant.

Biomin Manganese is wax soluble therefore can be applied at any stage in the season, not requiring new growth to penetrate the leaf.

Biomin Manganese aids in preventing plant and fruit susceptibility to disease by increasing the overall health and mineral balance of the crop.

COMPATIBILITY

Always run a compatibility test before spraying **Biomin Manganese** with other chemicals.

Biomin Manganese is compatible with almost all fungicides and insecticides.

Biomin Manganese is **INCOMPATIBLE** with Phosphorous, Calcium and Potassium foliar nutrients.

PLANT and ENVIRONMENTAL SAFETY

Biomin Manganese is totally harmless to plants even when recommended rates are exceeded. Exceeding recommended rates is however unnecessary.

Biomin Iron is totally harmless to both humans and wildlife and is environmentally friendly.

IMPORTED and DISTRIBUTED EXCLUSIVELY IN NEW ZEALAND BY
ROOTS SHOOTS & FRUITS Ltd
PO Box 72, Waiheke Island, New Zealand
Ph: +64(0)93729155 **Fax:** +64(0)93729156
E-mail: rsf@rd2.co.nz
Web: http://www.rd2.co.nz

APPLICATION GUIDELINES

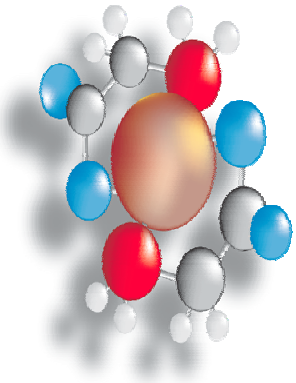
CROP	TIME OF APPLICATION		RATE OF APPLICATION
APPLES & PEARS	1st application 2nd application 3rd application	2-3 weeks after fruit set Onset of ripening (optional) 6 weeks before dormancy (optional)	0.5 — 1.5 kg/ha 0.5 — 1 kg/ha 0.5 — 1 kg/ha
GRAPES (TABLEGRAPES, &DRIED FRUIT)	1st application 2nd application 3rd application	2-3 weeks before flowering (as needed) 1-2 weeks before veraison 6 weeks before dormancy (optional)	0.5 — 1 kg/ha 0.5 — 1 kg/ha 0.5 — 1 kg/ha
WINEGRAPES	1st application 2nd application 3rd application	2-3 weeks before flowering (as needed) 1-2 weeks before veraison 6 weeks before dormancy (optional)	0.5 — 1 kg/ha 0.5 — 1 kg/ha 0.5 — 1 kg/ha
KIWI GOLD and HAYWARD	1st application	2-3 weeks before flowering ****Do not apply Manganese after fruit set**	0.5 — 2 kg/ha
STONE FRUIT & CHERRIES	1st application 2nd application 3rd application	2-3 weeks after fruit set Onset of ripening (optional) 6 weeks before dormancy (optional)	0.5 — 1.5 kg/ha 0.5 — 1 kg/ha 0.5 — 1 kg/ha
STRAWBERRY & ALL BERRY CROPS	3-4 applications	Beginning before flowering and repeat every month or as needed	0.5 — 1 kg/ha
TOMATO, CAPSICUM and other VEGETABLE CROPS	3-4 applications	Beginning before flowering and repeat every month or as needed	0.5 — 1 kg/ha

For information on application rates and timing for crops not listed on this brochure, please contact your local distributor or visit the RSF website at www.rd2.co.nz

It is always advisable that a leaf sample be taken before applying fertilisers to best ascertain the levels of elements and the nutrient requirements of the crop.

Functions of Manganese in Plant Nutrition

Involved in enzyme activation during carbohydrate reduction, chlorophyll and RNA/DNA synthesis. Manganese deficiencies mainly occur on organic soils, high-pH soils, sandy soils low in organic matter, and on over-limed soils. Soil manganese may be less available in dry, well-aerated soils, but can become more available under wet soil conditions when manganese is reduced to the plant-available form.



Conversely, manganese toxicity can result in some acidic, high-manganese soils. Uptake of manganese decreases with increased soil pH and is adversely affected by high levels of available iron in soils.

Deficiencies: In very severe manganese deficiencies, brown necrotic spots appear on leaves, resulting in premature leaf drop. Whitish-grey spots on leaves of some cereal crops and shortened internodes in cotton are other manganese-deficiency symptoms.

IMPORTED and DISTRIBUTED EXCLUSIVELY IN AUSTRALIA BY ZADCO FOR QUALITY GRO P/L
9/9A Foundry Road Seven Hills NSW 2147
Ph: +61(02)98389111 **Fax:** +61(02)98389110
E-mail: inquiries@zadco.com.au
Web: http://www.zadco.com.au

MANUFACTURED BY
JH Biotech, Inc.
4591 Olivas PK. Dr. Ventura
California 93006 USA
Web: http://www.jhbiotech.com