MANMAX®

Functions of manganese

Manganese is required by a number of enzymes associated with the metabolism of carbohydrates and nitrogen. Manganese is an important element in photosynthesis and chlorophyll production, while also influencing the uptake and assimilation of other nutrients.

Causes of manganese deficiency

Manganese availability is largely determined by soil pH. At very low pH there is a tendency for excess manganese to be available. Manganese deficiency occurs in alkaline soils. Excess iron, copper and calcium can cause manganese deficiency.

ZINCMAX®

Functions of zinc

Zinc is needed for amino acid, starch and chlorophyll production. It helps with phosphorus (P) uptake and is involved in protein synthesis. It also stimulates auxin and gibberellin production.

Causes of zinc deficiency

Zinc is present in most soils in very small quantities but generally sufficient for most crop requirements. There are a number of conditions and soil types that could cause zinc to be unavailable to crops and these include:

- Alkaline soils with pH over 6.5
- High phosphate containing soils
- Highly organic soils with high organic content
- Acid, sandy soils

CalciMax®: Reg. No. K5999, Act No. 36 of 1947
Cu-Max®: Reg. No. B2947, Act No. 36 of 1947
Double Max: Reg. No. B2916 Act No. 36 of 1974
Ferro-Max®: Reg. No. B2769, Act No. 36 of 1947
MagMax®: Reg. No. B2754, Act No. 36 of 1947
K-Max®: Reg. No. B2753, Act No. 36 of 1947
ManMax®: Reg. No. B2768, Act No. 36 of 1947
ZincMax®: Reg. No. B4772, Act No. 36 of 1947

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CalciMax®
Calcium (Ca) 100 g/ℓ
Boron (B) 6.5 g/ℓ

Cu-Max®
Copper (Cu)50 g/ℓ

Double Max
Calcium (Ca) 80 g / ℓ
Magnesium (Mg) 15 g / ℓ
Boron (B) 6.3 g / ℓ

Ferro-Max®
Iron (Fe) 50 g/ℓ

K-Max®
Potassium (K) 115 g/ℓ
K_2O 139 g/ℓ

MagMax®
Magnesium (Mg) 75 g/ℓ
Boron (B) 6.5 g/ℓ

ManMax®
Manganese (Mn) 75 g/ℓ
Boron (B) 6.5 g/ℓ

ZincMax®
Zinc (Zn) 100 g/kg (130 g/ℓ)
Boron (B) 5 g/kg (6.5 g/ℓ)



AECI Chem Park, 200 Bergrivier Drive, Chloorkop, Kempton Park, 1619, South Africa
T: +27 11 823 8000 **E:** planthealth@aeciworld.com **W:** aeciph.com

AECI® PLANT HEALTH



MAX RANGE

MAXIMISE YOUR PLANT NUTRITION UPTAKE

The AECI® Plant Health MAX Range, first developed by Plaaskem in 1991, represents a new concept in micronutrient technology. MAX Range nutrients are organic chelates, derived from natural sources which work harmoniously with the metabolism of the plant and ensure maximum uptake and translocation. Unlike synthetic chelates, the MAX Range is stable and effective, even under varying water and soil pH conditions.

The formulation of the MAX Range approaches the chelation process differently, by using carbohydrate derivatives to neutralise the electrical charge of the cation. Carbohydrates are used in the general biochemical functioning of a plant, and hence, carbohydrate-based chelates are more readily accepted by the plant.

PRODUCT RANGE

PRODUCT	m/m	m/v
CalciMax®	Ca: 78.5 g/kg, B: 5.08 g/kg	Ca: 100 g/ℓ, B: 6.5 g/ℓ
Cu-Max®	Cu: 40 g/kg	Cu: 50 g/ℓ
Double Max	Ca: 63 g/kg, Mg: 11.6 g/kg, B: 5 g/kg	Ca: 80 g/ℓ, Mg: 15 g/ℓ, B: 6.3 g/ℓ
Ferro-Max®	Fe: 40 g/kg	Fe: 50 g/ℓ
K-Max®	K: 91 g/kg, K_2O: 110 g/kg	K: 115 g/ℓ, K_2O: 139 g/ℓ
MagMax®	Mg: 58 g/kg, B: 5 g/kg	Mg: 75 g/ℓ, B: 6.5 g/ℓ
ManMax®	Mn: 60 g/kg, B: 5 g/kg	Mn: 75 g/ℓ, B: 6.5 g/ℓ
ZincMax®	Zn: 100 g/kg , B: 5 g/kg	Zn: 130 g/ℓ, B: 6.5 g/ℓ

good chemistry

AECI® PLANT HEALTH

PRODUCT ADVANTAGES:

CHARACTERISTICS	ADVANTAGES
Organically chelated complexes derived from natural plant material	Hence, not alien to the plant. Therefore rapid uptake and translocation within the plant.
Carbohydrate based product	Compatible with the normal biological processes within the plant.
Non-phytotoxic	Product can therefore be applied during the flowering stage of plants - no phytotoxicity or fruit abnormality. In the event of accidental overdosage, to date, no phytotoxicity has been reported. Product may be applied during high temperature weather conditions with no risk of leaf scorching.
Built-in humectant activity	Ensures the slow evaporation of the droplet from the leaf surface, thereby resulting in optimum uptake.
Suitable for prevention or correction of nutritional imbalances caused by adverse soil or climatic conditions	May be used as a foliar spray or via fertigation.
Safe formulation	Free from harmful residues such as chlorides, sulphates and sodium. Non-carcinogenic.
Includes boron	Boron assists in the mobilisation of various cations, e.g. calcium, within the plant. Post-harvest requirements of the tree with respect to boron can be decreased or eliminated depending on the number of MAX sprays applied.
Stable product with a neutral pH	Available to the plant over a broad pH spectrum of soil and water conditions. Due to the neutrality of the product, it is compatible with most pesticides, water-soluble fertilizers and other cations in the MAX Range.
Individual formulations available	Single, as well as multiple deficiencies in crops can be overcome as the products can be used individually or in the required combinations.
Non-corrosive	No damage to expensive spray equipment.

CALCIMAX®

Functions of calcium

The main function of calcium in the plant is to ensure structural and physiological stability of plant tissues. This is achieved in many ways: calcium is deposited in the cell walls in the form of calcium carbonate (structural); calcium is bound to oxalate in the phloem cells of the plant, ensuring that this structure is stable for nutrient transport purposes; calcium is deposited as a calcium-magnesium salt in the seeds of fruit; the growth of new roots requires the continuous uptake of calcium for strong root development.

Causes of calcium deficiency

Calcium uptake from the soil is influenced by the calcium status of the soil, the pH thereof, as well as the salinity of the soil. High levels of sodium in the region of the roots inhibits the uptake of calcium from the soil due to cationic antagonism. The same applies for high ammonium levels in the root zone. Boron deficiency causes abnormal fruit development, as boron plays a critical role in mobilizing calcium within the plant and hence assisting in calcium utilisation and the transport of sugars.
Note: CalciMax® contains boron.

CU-MAX®

Functions of copper

Copper is essential in the production of iron compounds needed for chlorophyll synthesis. It is also required as an enzyme activator. Copper has a regulatory function in the biochemical life processes, being essential for enzyme systems and plant growth.

Causes of copper deficiency

Copper deficiency can be induced by the over application of nitrogen and/or phosphate fertilizers, over-liming and drought. Alkaline soils, as well as sandy or leached acid soils give rise to copper deficiency.

FERRO-MAX®

Functions of iron

Iron is essential for the production of chlorophyll. It is also involved in a number of enzyme systems - all necessary for healthy plant growth.

Causes of iron deficiency

Most soils contain iron but there are a number of circumstances when it is made unavailable. Examples are soils that have been over-limed as well as soils that have a high phosphate or manganese content.

K-MAX®

Functions of potassium

Potassium is very mobile in the plant and is a co-factor involved in photosynthetic enzymatic reactions as well as the translocation of photosynthates. Potassium is also indirectly involved in carbohydrate metabolism within fruit and vegetables. Potassium plays a role in the regulation of stomata, i.e. oxygen uptake, drought resistance and water efficiency.

Causes of potassium deficiency

The following factors influence the uptake of potassium by the plant:

- Sandy soils
- Lightly leached soils
- Soils with a low cation exchange rate
- Clay soils (2:1 type)

MAGMAX®

Functions of magnesium

Magnesium is essential for the synthesis of chlorophyll. It is also essential for the metabolism of carbohydrates and plant cell respiration. Magnesium is part of the chlorophyll molecule and therefore a deficiency will affect photosynthesis. Magnesium also plays a role in the synthesis of sugars, oils and fats within the plant.

Causes of magnesium deficiency

Most soils contain magnesium, and deficiencies in plants are usually induced as a result of over-application of calcium and potassium. The most common is high potassium to magnesium ratio, as well as high soil pH with high soluble salt content.

