



## A SPOON FULL OF SUGAR MAKES THE NUTRITION GO DOWN

*ZincMax	m/m 10% Zn, 0.5% B m/v 130 g/l Zn, 6.5 g/l B	**K-Max	m/m 9% K, 11% K <sub>2</sub> O m/v 115 g/l K, 139 g/l K <sub>2</sub> O
*Cu-Max	m/m 4% Cu m/v 50 g/l Cu	**DoubleMax	m/m 6.3% Ca, 1.16% Mg, 0.5% B m/v 80 g/l Ca, 15 g/l Mg, 6.3 g/l B
**CalciMax	m/m 8% Ca, 0.5% B m/v 100 g/l Ca, 6.5 g/l B	**MagMax	m/m 5.8% Mg, 0.5% B m/v 75 g/l Mg, 6.5 g/l B
*FerroMax	m/m 4% Fe m/v 50 g/l Fe	*ManMax	m/m 6% Mn, 0.5% B m/v 75 g/l Mn, 6.5 g/l B

# The Max range of organically classified chelated micro-elements for microelement deficiencies

Four of the Max range products hold an Ecocert organic certification, and three hold an SGS organic certification. Ferromax, Manmax, Zincmax and Cu-Max all have an Ecocert organic classification, and Calcimax, K-Max and Magmax have an SGS certification. Another important product for the fruit farmer, Fruitboost, also holds an SGS organic certification.

Microelement deficiencies can therefore easily and effectively be addressed with the Plaaskem Max range.

Nutrient deficiencies in agricultural crops are common. Such deficiencies are not always easily identified visually, and often chemical leaf analyses are required. This is also true for orchard trees. In apples, for example, calcium deficiency symptoms are difficult to identify in leaves. Symptoms of a calcium (Ca) deficiency however include shoot and root growth inhibition, storage disorders, internal breakdown and bitter pit. A magnesium (Mg) deficiency may cause premature fruit drop. Zinc (Zn) deficiency is common in all crops, and in the case of apples it is manifest by leaves at shoot tips that are stunted and misshapen with mottled necrosis; the so-called little leaf dis-

ease. Reduced fruit set, quality and size may also result from Zn deficiencies in apples.

Manganese (Mn) deficiency in apples may cause 'Herringbone' chlorosis between main veins. Older and mid-shoot leaves are affected first. Shoot dieback may occur. Flowering and fruit set are reduced. In the case of copper (Cu) deficiencies, younger leaves are affected first. Leaves are stunted or misshapen with irregular margins. Whitish, mottled chlorosis between veins is also often observed. Fruit colour, quality and size are also affected. In many cases such deficiencies manifest suddenly and immediate action needs to be taken to rectify these deficiencies. The most effective way to remedy such a nutrient deficiency is by foliar application.

Plaaskem has a full range of chelated microelements which are suitable as leaf feeds. These include Calcimax, Manmax, FerroMax, Magmax, Copmax, Zincmax and K-Max. A valuable addition to the standard Max range is Double-Max, which contains both calcium and magnesium in the correct proportions to each other, so that both elements will remain available to the plant. By applying Double-Max, the farmer is there-

fore assured that neither element is in excess and both will be available to the plant. A nutrient deficiency caused by a lack of manganese, copper, iron, zinc or potassium can be rectified by using one of the other products in the Max range.

Calcimax also contains boron (B) which assists in the movement of the Ca within the plant to the areas where it is required. Calcium is known to be an element that does not move easily within the plant, and boron is known to facilitate the movement of calcium. Together, therefore, the calcium and boron in Calcimax get the calcium to where it is most needed.

The principle of chelates is that metal ions are "foreign" to the surface of a leaf. Therefore, they are not easily taken up through the leaves into the plant. However, carbohydrates are not foreign to a plant, and are easily taken up by the leaves. By chelating the metal iron the chelate is taken up into the plant, transported within the plant and the nutrient deficiency is effectively addressed. The use of inorganic trace element salts to correct nutrient deficiencies is less effective because uptake is limited and the mobility of these salts within the plant is limited.

The Max range of chelated microelements is fully compatible with most other agricultural remedies in a spray tank, and can therefore be sprayed along with other remedies. Due to the Maxes being chelated in carbohydrate compounds (sugars), they tend to persist on the leaf or fruit surface as a sugary residue once the water of the spray mixture has evaporated. Subsequent wetting by dew or rain causes the residue to "re-wet" or "re-hydrate" and uptake of the product is once again activated. This is called humectant activity and the unique composition of the Plaaskem Max range ensures this activity, meaning that the complete uptake of the micro-element is ensured.

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