



Micronutrient spray-on Zinc, Copper & Molybdenum

BACKGROUND

Incitec Pivot Fertilisers has invested in spray technology at its Primary Distribution centres which allow straight or blend fertiliser to be coated with varying rates of some micronutrients.

Spatial distribution, whether in furrow or broadcast applied, is important in supplying an even supply of nutrient to plants. Dedicated spray lines provide coverage to >90% of individual granules. This method of application offers a greater number of micronutrients point sources compared to granular fertiliser blends.

Because a liquid is being sprayed onto a dry fertiliser product, handling characteristics can be affected. Therefore, rates of micro nutrient applied have been established to ensure handling and storage is not compromised.

DIRECTIONS FOR USE

Zinc

Zinc can be applied to all phosphorus-based products, including DAP, MAP, Granulock, Superfect, to supply a rate of 0.3% or 0.5% Zinc w/w. These rates of zinc can also be applied to blended fertilisers where the nitrogen ingredient (Urea or Gran Am) is less than 50% of the blend.

Zinc is immobile in the soil which makes placement close to the seed in annual crops important. In alkaline soils the availability of zinc decreases. Minimum tillage and direct drill techniques are suited to supplying a smaller more frequent rate of zinc. Zinc removal in winter crop production systems is approximately 20-30 grams per tonne of grain.

Copper

Copper can be applied to all phosphorus-based products, including DAP, MAP, Granulock, Superfect, to supply a rate of 0.3% or 0.5% copper w/w. These rates of copper can also be applied to blended fertilisers where the nitrogen ingredient (Urea or Gran Am) is less than 50% of the blend.

Copper is immobile in the soil which makes placement close to the seed in annual crops important. In alkaline soils the availability of zinc decreases. Minimum tillage and direct drill techniques are suited to supplying a smaller more frequent rate of copper. Copper removal in winter crop production systems is approximately 5-10 grams per tonne of grain.

In grazing systems where copper levels in forage and pasture is less than 5 mg/kg (ppm) animal symptoms are likely to occur. These symptoms include anaemia, retardation in growth, abnormal bone formation (fracture easily), failure to fatten, scouring, coarsening and depigmentation of hair (or wool), poor growth rates and nervous disorders (ataxia). Application of molybdenum and or lime can also induce copper deficiency in animals.

Molybdenum

Molybdenum can be applied to all phosphorus-based products, including DAP, MAP, Granulock, Superfect. Newcastle rates of applications supply 0.025% and 0.05% molybdenum w/w. Victoria, South Australia and Tasmania Primary Distribution Centres apply 0.015%, 0.025% and 0.05% molybdenum w/w. These rates of molybdenum can also be applied to blended fertilisers where the nitrogen ingredient (Urea or Gran Am) is less than 50% of the blend.

Molybdenum is important in grazing systems, particularly for clover-based pastures. Deficiency is most likely to occur in rainfall areas and acidic soils (low pH).

A typical molybdenum application rate in pasture is 25-100 g/ha molybdenum. Repeat applications may be required as frequently as every 3 to 4 years, or as far apart as once every 8 to 10 years; depending on the soil type, rainfall, pasture productivity and the rate at which molybdenum is applied.

To achieve these concentrations in a blend, SuPerfect Mo 0.4% must be added at the following concentrations. The amount of molybdenum applied at various Mo concentrations and product application rates is shown in the following table.

Amount of molybdenum (g/ha Mo) applied in molybdenum fortified products at various rates.

Molybdenum Concentration (% Mo)	Superfect Application Rate (kg/ha)		
	125	250	500
0.015	Mo rate too low	Mo rate too low	75
0.025	Mo rate too low	63	Mo rate too high
0.05	63	Mo rate too high	Mo rate too high

Low concentrations, e.g. 0.015% molybdenum are used where the blend is applied at high rates, e.g. 250 – 500 kg/ha, and higher concentrations, e.g. 0.05% molybdenum, where low rates are applied, e.g. 100 kg/ha.

Molybdenum may also be required in grain legumes, and in some vegetable crops. In vegetable crops that are susceptible to molybdenum deficiency, it is recommended that molybdenum be applied as a foliar spray, rather than to the soil. One or two sprays early in the growing season in the seed bed and/or field is all that is required, given that molybdenum is mobile in plants and is required in minute amounts.

Foliar sprays also allow more uniform distribution of molybdenum than can be achieved by adding it to the planting fertiliser.

These Use Directions should be read in conjunction with the Incitec Pivot Molybdenum Agritopic.

COMBINATION OF SPRAY ON MICRONUTRIENTS

The addition of two micronutrients in combination can be applied to all phosphorus-based products, including DAP, MAP, Granulock, Superfect, and can also be applied to blended fertilisers where the nitrogen ingredient (Urea or Gran Am) is less than 50% of the blend.

The maximum rate combined of zinc and copper can be 0.8% i.e. 0.5% Zn and 0.3% Cu (or vice versa). Molybdenum can be applied at rates of 0.015%, 0.025% and 0.05% with 0.3% zinc or copper. If a higher rate of zinc or copper (0.5%) is required, then molybdenum can only be applied at 0.015% or 0.025%.

SAFETY DIRECTIONS

Avoid ingestion, dust inhalation and contact with the eyes and skin.

Wash hands after use.

CARE OF EQUIPMENT

This product can be corrosive to metals.

Clean equipment after use, and follow manufacturer`s maintenance advice.

WARNING

Excessive use of molybdenum can be harmful to stock. Plant levels of molybdenum can be high for up to four weeks after application. It is advisable to keep stock off treated areas for this period. Check rate and frequency of molybdenum use with appropriate authorities.

Before using fertiliser seek appropriate agronomic advice. Fertiliser may burn and/or damage crops or pasture. Because climatic and soil conditions, application methods, irrigation and agricultural practices are beyond the control of Incitec Pivot Limited and cannot be foreseen, Incitec Pivot Limited accepts no responsibility whatsoever for any commercial damage, loss or other result following the use of this product whether used in accordance with directions or not, subject to any overriding statutory provision and provided that such liability under those provisions shall be limited to the replacement of the goods as supplied or the rendering again of the services that are provided. The buyer accepts and uses this product subject to these conditions.

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