USE DIRECTION

MAY 2024

COPPER GRANULES (COPPER OXYSULFATE)

WARNING

S6 Poison.

Harmful if swallowed.

Causes skin and serious eye irritation.

REGULATORY INFORMATION

Copper Granules are classified as:

A **Class 9 (Miscellaneous Dangerous Good** by the criteria of the IMDG (International Maritime Dangerous Goods) Code for transport by **Sea.**

- Shipping Name Environmentally Hazardous Substance, Solid, N.O.S.,
- UN No 3077
- Packaging Group III
- HAZCHEM CODE 2X

This only applies to transport by sea.

Copper Granules are **NOT** classified as a Dangerous Good by the criteria of the ADG (Australian Dangerous Goods) Code for transport by **Road** and **Rail**.

HAZARDOUS according to SafeWork Australia criteria.

ANALYSIS

Nutrients

- Sulphur (S) (as sulphate) 3.5% w/w
- Copper (Cu) (as copper sulphate) 7% w/w
- Copper (Cu) (as copper oxide) 18% w/w
- Total Copper 25% w/w

Impurities

- Cadmium (Cd) maximum 20 mg/kg Cd
- Lead (Pb) maximum 500 mg/kg Pb
- Mercury (Hg) maximum 1 mg/kg Hg

Copper Granules contains heavy metal impurities. Its use may result in accumulation of cadmium, lead, and mercury in the soil. Depending on soil characteristics, irrigation water quality, plant species and variety, crop uptake of cadmium may lead to residue limits in plant and animal products more than the maximum level specified by the Australia New Zealand Food Standards Code. In pasture, the offal from grazing animals may also exceed these limits.

DIRECTIONS FOR USE

Copper Granules are a granulated copper oxysulphate fertiliser. This product is intended for dry application to the soil only, either on its own or in blends, for the prevention of copper deficiency in crops and pasture. As Copper Granules are not fully soluble in water, they cannot be applied in solution form.

Copper deficiency in crops and pasture is most likely to occur on sandy soils, and on alkaline (high pH) soils in which copper availability for plant root uptake is reduced.

Copper Granules are not recommended for annual use as a blend ingredient in planting fertilisers for winter cereals and other crops that are sown at narrow row spacings, as there will be insufficient granules in the row to ensure all plants have access to copper.

APPLICATION RATES

Always seek local and industry advice on the need for copper and appropriate application rates. Typical application rates for Copper Granules, which may be used in the absence of more specific district or crop recommendations, are detailed herein.

These rates are intended to last several years. Lower rates can be used where copper is applied annually, e.g. 2 – 5 kg/ha/annum of Copper Granules. On its own, Copper Granules can be difficult to apply at such low rates. It is often used as a blend ingredient with other fertilisers for this reason.

Pasture

Apply 8 kg/ha of Copper Granules every 3 – 10 years.

Grain

On light sandy soil, 8 kg/ha of Copper Granules may suffice.

On heavy textured clay soils, copper deficiency is less likely to occur but if diagnosed, higher rates are required as copper is more likely to be fixed on heavy soils, particularly if they are alkaline (have a high pH). Apply Copper Granules at 20 – 35 kg/ha. Such applications may last up to 5 years or more.

Copper Granules should be applied pre-plant and incorporated into the soil. If left on the soil surface, the copper will be inaccessible to crop roots.

NOTE. An adequate supply of copper is essential in wheat and other winter cereals at flowering, as copper plays an important role in pollen formation. A shortage of copper may result in barren heads.

In northern NSW and Qld, flowering coincides with the spring, which is the driest time of the year. Winter grain crops in these summer-dominant rainfall areas are very dependent on conserved fallow moisture. If the winter and early spring has been dry and the topsoil has dried out, the crop roots will be left to draw water and nutrients from the sub-soil. Copper in the topsoil, including that applied as fertiliser, can be left stranded and positionally unavailable to the crop.

Strategic 2% w/v sprays of Bluestone (or other less corrosive copper fertilisers) may be required at mid-tillering and just before booting in those districts and soil types in which copper deficiency is known to occur, particularly where little in season rainfall has fallen, irrespective of whether copper has been applied to the soil.

Vegetables

Apply Copper Granules at 25 – 35 kg/ha at intervals of up to 5 years.

Lower rates may be required on light-textured (sandy) or acid soils. Apply pre-plant and incorporate into the soil. Soil-applied copper will not be required where copper fungicide sprays are routinely used.

Sugarcane

In areas where copper deficiency is known to occur, e.g. blocks with a history of copper deficiency (Droopy Top), apply Copper Granules at 40 kg/ha in the row at planting, i.e. in the basal NPK planting mixture. This should last for the entire crop cycle (plant crop plus ratoons).

If copper deficiency is diagnosed early in a crop cycle, apply Copper Granules at 40 kg/ha over, into or adjacent to the rows, e.g. into the drill in plant cane, or after harvest. In ratoons, results are likely to be better if applied into the soil to a depth of 10 cm rather than to the soil surface.

Where copper is thought to be marginal, e.g. soil analysis results are low, but deficiency has not been observed in past crops, apply Copper Granules at 20 kg/ha as an insurance against deficiency, or test strip at 40 kg/ha.

Tree & vine crops

Apply Copper Granules 25 – 35 kg/ha (2 – 3.5 g/m^2) at up to 5-year intervals. Lower rates may be required on light-textured (sandy) or acid soils. Apply in one of the following ways:

- To the whole floor area of the orchard
- Uniformly over the entire root zone of the trees, i.e.. under the whole canopy and just beyond the canopy, but not within 30 cm of the trunk
- Concentrated in a band at least 30 cm wide around the drip line, i.e.. where the roots are most active, or
- Concentrated in a band along the canopy edge of the hedgerow if the canopies have met.

For young trees, treat the area that the roots will be growing into as well as the area where most roots are now present.

Trees may be slow to respond to soil applied copper. Where copper deficiency is evident in the foliage, it is recommended that foliar sprays of copper be applied as well in the first year after applying copper to the soil, or until such time that deficiency symptoms are no longer apparent.

Soil-applied copper will not be required where copper fungicide sprays are routinely used.

FIRST AID

If swallowed, or you feel unwell, call the Poisons Information Centre (131 126), or a doctor.

Rinse mouth. If in eyes, hold eyelids apart and flush continuously with running water for several minutes. Remove contact lenses, if present and easy to do. If on skin, wash with soap and running water. Remove contaminated clothing.

ENVIRONMENT

Copper granules are classified as a Marine Pollutant and are toxic to aquatic life, with long lasting effects. Avoid loss to waterways.

CARE OF EQUIPMENT

This product can be corrosive to metals. Clean equipment after use and follow manufacturer`s maintenance advice.

SAFETY DIRECTIONS

Refer to the Safety Data Sheet (SDS) for more detailed safety advice. Before use, read the Product Label and the SDS. Use safe work practices and avoid contact with the eyes and skin. Avoid ingestion and inhaling dust. Protective clothing, eyewear and dust masks should always be used when dealing with this product. Observe good personal hygiene, including washing hands after use. Avoid loss of fertiliser to waterways.

WARNING

This document contains information of a general nature. Before using fertiliser seek independent agronomic advice. Fertiliser programs may need to be varied depending on the plants being grown, climatic and soil conditions, application methods, irrigation, agricultural and livestock management practices, the soil's fertility, and cultural practices. ('Unforeseen Elements')

Fertiliser may burn and/or damage crop roots or foliage. Foliar burn to the leaves, fruit or other plant parts is most likely to occur when fertilisers are foliar applied at high concentrations and/or on a regular basis, different products are mixed and sprayed together at cumulatively high rates, the water is of poor quality, or the spray is applied under hot dry conditions, e.g. in the heat of the day.

Fertiliser and supplements may affect animal health. Seek independent advice before using any supplements in livestock rations.

DISCLAIMER

As Unforeseen Elements are beyond the control of Incitec Pivot Limited, in no event Incitec Pivot Limited and its related bodies corporate be liable or accept any responsibility whatsoever for any direct, indirect, punitive, incidental, special or consequential damages (including but not limited to loss of revenue, crops and livestock), in respect of the illness, injury or death of a person, damage to property (including of a third party), or any other loss whatsoever arising out of or connected with the use or misuse of this fertiliser, or its transport, storage, handling or application. Where Incitec Pivot Limited and its related bodies corporate's liability cannot be lawfully excused, it and its related bodies corporate's liability shall be limited to the replacement of, or cost of the fertiliser supplied. The buyer accepts and uses this product subject to these conditions.

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