Copper edetate or Copper glycinate injection?
Copper – An essential trace element

There are two options for supplementation of cattle with medium-acting copper injections – calcium copper edetate products (eg Copperguard) and copper glycinate products. Both options contain similar levels of copper in a 2ml dose - 100mg in edetates, and 120mg in glycinites. However, edetates can also be used at a higher dose of 4mL where required in cattle over 4 months of age, whereas glycinites have only the 2mL option on label for cattle over 150kg.

The two copper options differ in their absorption from the injection site, and have different safety profiles. Glycinites form a depot and release slowly, whereas edetates are released more quickly, with the copper transported to the liver to be stored and released as required. The quicker release of edetates can mean more rapid response where deficient animals are treated.

The form of copper released from glycinites is ionised, which has higher toxicity in the bloodstream than the chelated form of edetates, although either product can be toxic if used in excessive doses or in animals with high copper levels before treatment.

The slower release nature of glycinites means they tend to cause more irritation at the injection site, resulting in a larger and more painful lump than edetates (as well as more "sting" at the time of injection). These lumps can persist for several weeks, and have been associated with reduced appetite for 2-3 days after treatment. While lumps can also occur after injection with edetates, it is generally assumed that reduced appetite is more pronounced after glycinites due to the larger lumps. Larger lumps will of course mean more trimming at works.

In summary, both products will provide similar quantities of copper over a similar timeframe of up to 4 months. The key differences are flexibility of dose in cattle over 4 months of age, rate of uptake of copper and severity of lumps.

Copper deficiency

Copper deficiency can result from either low intake or low absorption. Deficiency resulting from low intake is less common but may occur when animals are grazing on soils such as peats and some yellow-brown pumice soils, which are deficient in copper. Deficiency due to low absorption is more common. Only about 5% of the ingested copper is absorbed from the intestine and the correlation between soil and pasture concentrations is poor, so it is very difficult to predict the copper status of an animal from the concentration in the soil.

Copper absorption from the intestine can be affected by other dietary factors such as the intake of molybdenum in the presence of sulphur, and high pasture iron content. Zinc boluses for the treatment of facial eczema can reduce the absorption and storage of copper in the liver. Cattle and deer have greater copper requirements than sheep and are more likely to become deficient.

Directions for Copperguard® use

▶ Shake thoroughly before use to ensure a uniform suspension
▶ Subcutaneous injection in the anterior half of the neck.

Dosage:

▶ Cattle: over 4 months old: 2mL. Dosage may be increased up to a maximum of 4mL if severe copper deficiency has been confirmed through clinical symptoms or liver biopsy. Dosage in cattle may be repeated every 3 months
▶ Adult Sheep: 1mL. Dosage may be repeated every 4 months.
▶ Deer: 1mL/50kg bodyweight. Dosage may be repeated every 4 months.
▶ Do not use in cattle under 4 months of age.

For more information on Copperguard® please phone 0800 VIRBAC or contact your Area Sales Manager who can be found at www.virbac.co.nz

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