

## Post-mortem appearance, diagnosis and treatment of molybdenum toxicity in animals

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Molybdenum and copper are antagonistic to one another. Intake of Sulphur and molybdenum in excess leads to copper insufficiency. A compound made of copper sulphate and sodium molybdenum precipitates from a neutral solution. Because copper is biologically inaccessible when bound in a Cu-Mo complex, an animal may also contain such a complex.

### Occurrence

Sheep, goats, and cattle are vulnerable. Consumption of plants from soils high in molybdenum. emissions from several molybdenum-using companies contaminating grasslands. Cows that were feeding on pasture with 16 ppm copper in fresh grass (dry matter) and were close to an industrial facility that produced molybdenum oxide developed hypocuprosis. In dry matter, the fresh grass had 29–80 ppm molybdenum. Soon after receiving copper sulphate treatment, symptoms vanished.

### Pathogenesis

Consuming molybdenum interferes with the liver's ability to store copper, which results in an indirect copper deficit. Mo poisoning is aggravated when low intakes of copper and high intakes of Sulphur happen at the same time. With the exception of diarrhea, exostosis, and hemorrhages along the long bones, the indications are primarily those of copper insufficiency. Secondary abnormalities in the metabolism of minerals, in particular copper, iron, calcium, and phosphorus, are brought on by molybdenum toxicity.



### **Symptoms**

Diarrhea that is severe and persistent. Emaciation, weight loss, and a dry, glaring coat. Depigmentation of the hairs around the eyes, creating the impression of glasses. decrease in milk production. Lameness, a stiff walk, and aching joints. Overgrowth of the long bones' ends and osteoporosis. Calves' stunted growth and wastefulness. Young bulls lose their libido. Leucopenia and anemia.

### **Post-mortem Appearance**

No distinctive lesions. Dehydration, anemia, and emaciation. The loss of melanin pigment from the hair cortex and medulla, hemosiderosis of the lymph nodes, spleen, liver, lungs, and gut, degenerative changes in the liver, skeletal muscles, and testes, colloidal goitre, and stunted bone growth in goats with molybdenosis were only a few examples of the microscopic abnormalities.

### **Treatment**

Copper sulphate 1g for calves and 2 g for cows, daily in feed or 5 g weekly. Recovery within 2-3 days confirms the diagnosis. One gram of copper sulphate and 1 mg of cobalt per 100 lb body weight in drinking water at weekly intervals.

