

NOT ENOUGH COPPER

Copper (Cu) is an essential trace mineral needed for many bodily functions. Research indicates goats have higher requirements for copper than sheep, though some breeds of sheep may require more copper to prevent deficiencies. Copper deficiency occurs when animals consume feedstuffs that are low in copper and/or high in minerals that interfere with copper absorption. Deficiencies occur most commonly in areas where soils are naturally low in copper or high in molybdenum (Mo) sulfur (S), or iron (Fe). While there are geographical differences, any farm/ranch can experience a copper deficiency (or toxicity), based on their unique environmental conditions and farming practices.



Many health problems have been associated with copper deficiency in sheep/goats, including symptoms that can have other causes.

Symptoms, signs

- Poor weight gains and/or weight loss
- Weakness, lethargy
- Diarrhea, anemia
- Rough dull coat
- Ataxia (swayback)
- Hind limb incoordination
- Joint stiffness and pain
- Hair loss, especially around eyes
- Decreased immune function
↑susceptibility to parasites
- Poor wool quality
Loss of crimp
- Depigmentation
Faded hair coats
- Infertility and abortion

Causes, contributing factors

- Low copper levels in soil
- Low copper levels in forage
- High levels of copper antagonists (i.e., Mo, S, Fe).
- Too much lime, ↑soil pH
- Gastrointestinal disorders
- Age, species, and breed differences

Diagnosis

- Consult a veterinarian
- Liver biopsies
- Blood tests not reliable
- Soil and forage tests
- Clinical signs
- Response to treatment or copper supplementation

Liver biopsy, ppm Cu (dry)

Normal	80-200 ppm
Concern	< 100 ppm
Deficiency	< 50 ppm

Treatment and prevention

- Dietary adjustments
- Feed a granular form of a species-specific mineral
- Manage molybdenum
- Treat clinical cases with copper sulfate drenches or copper boluses
- Test soils and forages for mineral content
- Test water for mineral content
- Periodically do liver biopsies
- Implement proper liming practices

