



# Goat health - copper deficiency

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Animal Biosecurity and Welfare, NSW DPI

Copper deficiency is a common mineral deficiency condition in sheep and cattle in New South Wales. Little is known about the condition in goats, although on some coastal properties the signs of copper deficiency can be quite severe. The condition 'swayback' or 'enzootic ataxia' described in sheep, occurs in goat kids. Limited copper intake over time leads to the appearance of clinical signs in adult goats. Some responses to copper supplementation have been dramatic.

## Occurrence

The pasture of coastal New South Wales is generally regarded as being deficient in copper. However, goats are browse-feeders by preference and estimates of copper content of bushes are not readily available.

In the Hunter Valley area, goats with adequate access to bush and scrub are rarely found to be deficient in copper. Goats on grass pasture only, or tethered on kikuyu-predominant coastal pasture often display signs of copper deficiency.

## Clinical signs

The non-specific signs are ill thrift, scouring, rough dull coat, anaemia and poor reproductive ability. Angoras may have harsh mohair.

Kids show a more dramatic and specific effect—a hind limb incoordination that leads to an erratic swaying gait, hence the name 'swayback'. Affected kids are usually weak and in poor condition, due to either an inability to suckle or keep up with their mothers. Paralysis develops in the hind limbs and kids are unable to stand. Kids can be born with a degree of swayback (or 'ataxia') but more commonly develop the condition after 4 to 6 weeks of age.

## Diagnosis

A diagnosis can be made by determining the copper levels in blood or liver tissue. Both affected and healthy goats should be tested and the levels compared.

## Control

In copper deficient areas, copper sulphate (bluestone) mixed with feed or given as a drench solution at regular intervals is desirable. This may be timed to coincide with routine worm drenching.

Goats on grass pasture should be given tree-lopplings or branches regularly. Lucerne or clover hay is also a useful supplement. Goats cannot thrive on grass alone!

Salt licks containing copper are commercially available. Variable copper content of the blocks, plus variable intake from nil to excessive amounts between individual animals, makes copper blocks an unreliable method of supplementation.

Capsules containing copper are available for treatment of individual goats. Check with your veterinarian for treatment details.

Topdressing pastures with fertiliser fortified with copper will provide more long-term results.

Finally, copper injections can also be given. Your veterinarian should be consulted if you suspect copper deficiency, as too much copper from different sources can easily create copper toxicity. It is best to seek advice, before introducing any copper supplementation, about how serious your problem is and how it should be addressed.

## Caution

Caution should be used with copper supplementation because goats grazing plants that damage the liver, such as heliotrope or fireweed, can suffer toxæmic jaundice from the sudden release of copper from damaged liver cells. The confirmation of copper deficiency should be made by blood sampling a proportion of the flock. Then the most suitable level of supplementation can be estimated.

## More information

- Local Land Services, Tel: 1300 795 299
- To view details of your LLS region: <http://www.lls.nsw.gov.au/>
- Department of Primary Industries and Regional Development – [Copper deficiency in Sheep and Cattle](#)
- [Copper deficiency in ruminants](#)
- Animal Biosecurity and Welfare, Tel: 1800 680 244
- Department of Primary Industries [biosecurity@dpi.nsw.gov.au](mailto:biosecurity@dpi.nsw.gov.au)

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