



FARM NEWSLETTER SEPTEMBER 2022

COPPER IMBALANCES IN SHEEP AND CATTLE

Copper Requirements:

Copper is an essential element to many body systems with key roles in reproduction, immunity and growth. It is needed for efficient metabolism of iron, connective tissue, skin, hair and hoof tissue health alongside many other functions.

Copper deficient animals therefore are:

- More susceptible to infection, do not respond well to vaccination and are less resistant to parasitic challenge.
- Have reduced reproductive performance inc. reduced conception rates, increased cases of retained foetal membranes, delayed puberty, increased repeat breeders in females and decreased libido and semen quality in males.
- Less likely to produce high quality colostrum. New-born animals have a high demand for copper in the first few months of life. Those born to copper deficient dams experience increased death rates and reduced growth, immunity and productivity.

Causes of Copper Deficiency:

- Low soil copper content
- High levels of minerals that antagonise copper: molybdenum, sulphur and iron
- Forage mineral content
- Breed factors e.g. Simmental and Charolais have an increased copper demand than Angus breed.



Symptoms of Copper Deficiency:

- Rough, discoloured coat (can have loss of pigment around eyes > ‘spectacles’)
- Slow shedding winter coats
- Poor fertility usually presenting as depressed or delayed oestrus expression esp. in heifers.
- Poor growth in calves, pregnant ewes may give birth to ‘swayback lambs’.
- Hoof issues +/- or poor immunity
- Widened growth plates in the long bones of the legs > lameness
- Diarrhoea- esp. after turnout on high molybdenum pastures
- Anaemia if prolonged period of deficiency.

Diagnosis:

- Blood sample: can detect clinical disease
- Liver biopsy – measures copper reserves – better able to predict whether supplementation will be needed in the future to prevent deficiency.

Treatment and Prevention:

- Copper can be supplemented via injection or orally. But only short-term efficacy.
- Copper oxide needles
- Slow-release bolus – release copper into the rumen/reticulum over a 6–8-month period (product dependent)



Copper Toxicity:

Usually only occurs due to excess copper content in the diet and if it occurs it can be fatal.

Ensuring you check mineral content in any dietary rations and replacing free-access mineral supplements with controlled release products will ensure toxicity does not become an issue.

Copper supplementation should only be done following veterinary advice and with a safe, tested product.

