



RIVERINA LOCAL
LIVESTOCK UPDATE

March



Local Land
Services

Case study:

CALTROP TOXICITY

District Veterinarian Kristy Stone



CASE HISTORY

A mob of Merino lambs were yarded for shearing when producers noticed three lambs that appeared dull and had yellow eyes & gums (jaundice). The lambs were being fed a ration of pellets, barley and straw for approximately 1 month. The holding paddock they were being confined to had a history of having a lot of caltrop. Two months ago, a copper trough block was placed in the water trough to treat algae.

CLINICAL EXAMINATION

Affected sheep were lethargic and dull, very jaundice and had normal temperatures. Bloods were sampled from the affected lambs and a post mortem was carried out on a lamb that had died.

DIAGNOSIS

Laboratory results showed elevated copper levels in the blood and liver damage indicating Saponin toxicity – a toxicity associated with *Tribulis Terrestris* (Caltrop) or Panic grass species.

SO, WHAT DOES THIS MEAN?

Sheep store copper in the liver. A healthy liver is able to moderate the amount of copper absorbed and released, however once the liver is damaged (most commonly by plant intoxications) it compromises the capacity of the liver to moderate copper storage.

It is likely the combination of liver damage caused by the caltrop and the increased intake of copper from the algae block has resulted in a chronic copper toxicity.

WHAT CAN WE DO TO TREAT IT?

In this case, the copper block was removed from the trough and the trough was cleaned out. The lambs were moved from the paddock to a paddock free of caltrop weeds. A drench containing molybdenum was given to treat the copper toxicity however there is no treatment that could be given for the co-existing liver damage. The remaining jaundiced lambs recovered well after being drenched.

Caltrop ingestion is associated with a few different syndromes including photosensitization, staggers and nitrate poisoning which are all managed in different ways. In following weeks sporadic cases of photosensitisation were seen in the lambs presumably associated with the pre-existing liver damage.

WHAT CAN BE DONE TO PREVENT IT?

Summer is a common time for liver toxic weeds to rapidly proliferate, especially following rain events. Chemical control of Caltrop is an option and spraying the plant with herbicide reduces the toxicity making it safer to graze affected paddocks however multiple germinations are likely so more than one spray application may be necessary. Caltrop is vulnerable to competition so planting annual summer crops may also help to reduce establishment of the weed. The use of copper for water treatment is not advised when animals have had access to liver toxic plants. Always follow the label when using water treatments and seek advice when unsure.



Left: Markedly jaundiced gums of affected lamb



Right: Jaundiced kidney of affected lamb.

TIPS FOR THE MONTH AHEAD

A NOTE ON WATER QUALITY AND TESTING

Water quality is important for both livestock production and welfare. Sources should be checked regularly as conditions that affect both the quantity and quality of water, such as evaporation or contamination, can change rapidly.

Animal health can be affected by a number of components of water quality. Water testing kits are available at Local Land Services offices which offer a selection of different tests. In most cases, a standard test will be sufficient, however in some circumstances it may be beneficial to do additional testing such as in the case of effluent contaminated water sources or suspect mineral deficiencies or toxicities. These issues should be discussed with your veterinarian prior to testing.

When it comes to livestock health and performance, a few (but not all) important aspects of water quality include:

- Salinity (electrical conductivity) - High salinity can impact food intake, growth rate and wool production and in severe cases result in dehydration, kidney failure and death. Young animals and pregnant or lactating females are more susceptible to high salinity. Evaporation can have a big impact on the salinity of water, especially if the water supply is normally salty, so it is important to monitor particularly at times when evaporation is high.
- Nitrates – Water can become contaminated by manure, organic matter or fertilizer which can cause an increase in nitrates. Nitrate toxicity can result in diarrhoea & abdominal pain however if the ingestion of nitrates is very high, nitrite can accumulate and animals can die from lack of oxygen in the blood
- Blue green algae - Blue green algae can cause sudden death and gastrointestinal disease in livestock. It is tested for separately to the water testing kits. The test involves the identification and quantification of algae present and the laboratory requires 100ml of chilled water to be submitted. Any livestock losses should be investigated by a veterinarian to confirm blue green algae toxicity as the cause of death.

For more information on interpreting water tests, water quality and blue green algae please see the links below.

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/96273/Water-requirements-for-sheep-and-cattle.pdf

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0018/111348/water-for-livestock-interpreting-water-quality-tests.pdf

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0013/164101/Farm-water-quality-and-treatment.pdf

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/347089/Blue-green-algae-poisoning-of-livestock.pdf

UPCOMING EVENTS

Feeding Weaner Cattle: Production or maintenance? (Webinar) - March 19

Ben Linn from the McKinnon Project will be answering the dilemma on feeding weaner cattle. Ben will delve into:

- Should weaner cattle be production fed or maintenance fed?
- What is the most cost-effective production ration?
- What is the most cost-effective maintenance ration?

Register for this free webinar at www.mla.com.au

Lifting Lamb Survival - Profitable Grazing Systems (Cootamundra) - April 1

Expressions Of Interest are sought from sheep producers wanting to improve lamb survival. The Lifting Lamb Survival PGS gives producers the skills to develop and implement management practices to increase lamb survival and reduce ewe mortality, understand the effects of mob size, nutrition, animal health and genetics on lamb survival, understand the causes of lamb mortality, use of scanning information and prioritizing farm resources to improve lamb survival & production opportunities.

Please register by emailing jamesmeckiff@gmail.com or calling Jim Meckiff 0428332280 - Cost is \$1250.00

Lambex (Melbourne) - July 1 to 3

LambEx celebrates all that is great about Australia's sheep and lamb industries, featuring a compelling program with outstanding speakers and an opportunity to network with all sectors of the lamb value chain.

Register at www.lambex.com.au/

Follow us at [@locallivestockvets](https://www.instagram.com/locallivestockvets) on Instagram to see photos and videos direct from the paddock!



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