Preventing lead poisoning and residues in livestock

Preventing lead residues in livestock protects human food safety and Western Australia's ongoing access to international markets. Lead is highly toxic to livestock, particularly cattle, and can result in sudden death. Those that survive lead poisoning are quarantined for at least 12 months to ensure that animal products for human consumption or export do not contain lead residues.

While lead detections in livestock are not common, there are occasional cases of livestock dying or being quarantined following exposure to lead. Usually, these animals have had access to lead batteries found in the farm dump or left in the paddock.

Other lead poisoning cases occur when hungry stock seek alternative feed sources. Younger livestock are more susceptible, given their natural curiosity and relative size. Cattle are more likely to succumb to acute lead poisoning, but sheep and pigs can also be affected.

Producers can prevent lead poisoning and residues by removing lead sources from their farms and/or securely fencing off lead sources from livestock.

Common on-farm lead sources

- lead batteries, especially burnt ones
- painted surfaces – machinery, car bodies, sheds, yard and fence posts
- old paint tins
- sump oil
- grease and oil filters
- linoleum
- caulking, putty.

Lead batteries are the most common cause of lead poisoning and residues in livestock. Battery casings become brittle over time, allowing livestock to access the lead and lead salts. Burning batteries exposes the internal lead plates, making the lead readily accessible to livestock.

Risk factors

- Cattle are inquisitive and appear to like the taste of lead. Lead has a sweet taste, and some livestock are attracted to it.
- Younger livestock are more likely to eat lead compared with older animals.
- Hungry livestock may seek out feed around hazardous areas such as the farm dump or around sheds – take care during feed shortages.
- Reduced pasture cover may expose lead hazards not previously noticed.
- Agisting animals on unknown land – lead battery dumps may be present in grazing areas.

How to prevent lead poisoning

To prevent lead poisoning and the possibility of lead residues in livestock, producers should:

- Carry out a risk assessment: identify any areas on farm that could contain lead, such as farm rubbish dumps, old car/machinery bodies, painted surfaces, sump oil-treated posts, battery piles or vehicle sheds.
- Where possible, remove the risk (that is, dispose of batteries at approved landfill sites) or
- Securely fence off the risk, such as the farm dump, sheds and similar.

Signs of lead poisoning

- dullness, unresponsive to sound or touch
- blindness, staggering, tremors
- death.

Seek immediate veterinary advice for livestock showing these signs. Lead poisoning can cause signs similar to other diseases that affect the nervous system, such as plant poisoning, botulism, polioencephalomalcia (PEM) and metabolic diseases like grass tetany (magnesium deficiency).

Early detection is vital to help prevent continuing losses and to determine the appropriate treatment for sick livestock.

Note: not all animals that have eaten lead show signs of poisoning, but these animals may contain lead residues in excess of the maximum residue limit (MRL). Any livestock exposed to lead must be tested for residues.

Diagnosis of lead poisoning

The diagnosis of lead poisoning is based on a history of access to lead and clinical signs. Lead poisoning can be confirmed by testing blood or tissues (liver and kidney) taken at post-mortem.

Lead tends to lodge in the fore-stomach (reticulum) of ruminant animals such as cattle, sheep and goats. This provides a reservoir from which lead can continue to be absorbed into the body and cause persistently high lead residues for months or even years.

Livestock with elevated lead levels may also be detected through National Residue Survey (NRS) testing at abattoirs. When notified of residues, the department's officers will visit the livestock's property of origin to determine the lead source and ensure other affected/exposed livestock do not go for slaughter. These livestock are quarantined for a minimum of 12 months or until testing demonstrates safe levels of lead and must not be sold for slaughter during the quarantine period.

Treatment for lead poisoning

The most important step in treatment is to remove livestock from the source of lead. It is vital to identify the source of the lead and remove the animals from the source immediately.

Other forms of treatment are mostly unsuccessful and only worth attempting during the early stages of poisoning. Contact your local veterinarian for treatment advice and follow all veterinary directions.

What to do if livestock are exposed to lead

- Contact your local field veterinary officer regarding your suspicions.
- Seek immediate private veterinary advice if livestock show signs of poisoning
- Arrange to have the livestock blood tested if you suspect they have accessed lead.

If lead exposure is confirmed, the department will advise you on how to ensure livestock with residues do not enter the food chain.

Contact us

Animal Biosecurity and Welfare team

Email: livestockbiosecurity@dpird.wa.gov.au

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