WA Livestock Disease Outlook - for producers

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Recent livestock disease investigations

Liver fluke excluded in condemned sheep liver at Great Southern abattoir

- An on-plant abattoir veterinarian noted presumed parasitic tracts in a single liver at slaughter. One liver was condemned from a line of 300 8-month-old lambs.
- The on-plant veterinarian contacted the DPIRD Diagnostics and Laboratory Services (DDLS) on duty pathologist. Lab-fee exempt testing was granted to rule out Liver fluke (*Fasciola hepatica*), which is a reportable disease in Western Australia with interstate control measures in place to prevent entry into the state.
- The on-plant veterinarian submitted liver samples from the condemned liver as well as photographs.
- Laboratory testing excluded fascioliasis (Liver fluke).

- The cause of the lesions was identified to be tapeworm larvae (*Taenia hydatigena*) undertaking migration through the liver. Once larvae reach the abdominal cavity, they form cysts and are recognised as bladder worm (*Cysticercus tenuicollis*).
- Cysts containing viable larvae were not detected in this case.
- Extensive damage in the liver suggests the larvae died during the migration phase.
- The lifecycle of this parasite utilises dogs, where the tapeworm (*Taenia hydatigena*) eggs are shed onto pasture in dog faeces. The tapeworm has little effect on sheep health or production and is of no concern for human health, however it causes economic losses due to condemnation of livers and trimming of cysts in the abdominal cavity of carcases at the abattoir.
- Pet and working dogs should be wormed every 4 to 6 weeks with a tapeworm treatment, and dogs should be prevented from accessing sheep carcases or fed offal from infected sheep. Wild dogs and foxes can also carry the tapeworm that causes bladder worm in sheep.
- Sheep measles (*Taenia ovis*) is another tapeworm parasite which can cause significant economic loss due to rejection or trimming of sheep carcases. The parasite is carried by dogs, however the larval stage in sheep muscle results in an unsightly cyst which is not acceptable for human consumption, although it poses no concern for human health. Control involves preventing transmission of the tapeworm from dogs to sheep. Read more about sheep measles.
- Read more in the Animal Health Australia bladder worm factsheet.
- See the DPIRD webpages for more information on Liver fluke and Liver fluke testing and laboratory requirements for Western Australia.

The condemned lamb liver with typical chronic lesions of Taeniad larval migration through the liver.

Sudden death in hoggets in the Great Southern region

- A private veterinarian was called to investigate sudden death of 50 one-year-old hoggets from a mob of 2,500 in the Great Southern region.
- The large mob was being run across several paddocks with access to replanted salt bush and appeared healthy. The mob was unvaccinated with a low faecal egg count one month ago.
- The private veterinarian had obtained approval from a DPIRD field veterinary officer to access the Significant Disease Investigation program (SDI) prior to the property visit. To prove WA is free of significant diseases affecting trade and to boost early detection of such diseases, the Significant Disease Investigation program provides a subsidy of $300 to private veterinarians for an initial field and laboratory investigation of significant disease incidents in livestock.
- A post-mortem was conducted on 2 animals with no significant findings indicating the cause of death.
- Laboratory testing identified Clostridial enterotoxaemia (commonly known as pulpy kidney).
- Clostridial enterotoxaemia is caused by proliferation and toxin production of the bacterium *Clostridium perfringens* type D. This bacterium is a normal inhabitant of the intestines. Issues usually occur following a sudden change to low-fibre, high-carbohydrate diets such as sheep being moved onto lush, rapidly growing pasture, cereal crops or being fed grain. Clostridial enterotoxaemia most commonly occurs in rapidly growing unweaned or weaned lambs but can occur in older sheep following movement from poor to good quality feed. The disease is preventable by vaccination.
- See DPIRD's webpage on pulpy kidney (enterotoxaemia) of sheep for more information.

ARGT confirmed cause of deaths and neurological signs in adult ewes

- A property in the Great Southern region experienced sudden death in 24 adult ewes of varying ages over 3 days duration. The sheep expressed clinical signs of staggering, full body tremors and recumbency and repeatedly falling over when attempting to move away from pressure. The ewes were not pregnant and had been moved into their paddock 3 weeks prior. Treatment with subcutaneous magnesium and calcium solution and electrolyte drench was trialled with no improvement.
- The producer contacted a DPIRD field veterinary officer for investigation.
- On post-mortem, one animal had an enlarged liver with rounded lobes. There were no other significant findings. Pasture samples were also collected.
- Laboratory testing at DPIRD Diagnostics and Laboratory Services (DDLS) identified annual ryegrass toxicity (ARGT) as the cause. The pasture sample was also confirmed as 'high-risk' for ARGT.

- Lead toxicosis, a risk to human food safety and access to export markets, was excluded by kidney lead analysis.
- Cape tulip was also detected in the pasture sample, which is a toxic plant that can cause clinical signs similar to ARGT. There was no evidence on laboratory testing that this toxin was a contributing cause to neurological signs and deaths in this case.
- Annual ryegrass toxicity (ARGT) is an often-fatal poisoning of livestock that consume annual ryegrass infected by the bacterium *Rathayibacter toxicus* (formerly known as *Clavibacter toxicus*). The bacterium is carried into the ryegrass seedhead by a nematode, *Anguina funesta*, and produces toxins within seed galls. Toxicity develops from the start of seedset. Hay made from toxic ryegrass will also be toxic. All grazing animals are susceptible, including horses and pigs.
- Other diseases that may resemble ARGT include thiamine deficiency, pregnancy toxaemia, grass tetany, clostridial enterotoxaemia (formerly pulpy kidney), and reportable diseases such as scrapie in sheep and bovine spongiform encephalopathy in cattle.
- For more information, see the following DPIRD webpages:
- Annual ryegrass toxicity in livestock
- Testing hay for annual ryegrass toxicity (ARGT) risk
- Controlling annual ryegrass toxicity (ARGT) through management of ryegrass pasture.
- If you see nervous / neurological signs in your livestock, phone a veterinarian. Some exotic diseases, such as transmissible spongiform encephalopathy, can cause similar signs. Testing will be subsidised and helps to prove that WA is free from such diseases and further supports the industry.

Recent cattle deaths a reminder to prevent livestock access to sources of lead

- Recent deaths in cattle have occurred in the south-west as a result of lead ingestion.
- These cases are a reminder to consider lead toxicosis as a potential diagnosis in livestock displaying neurological signs. Animals affected by lead poisoning may become blind, unresponsive to their surroundings and bump into obstacles.
- Stock owners are reminded to remove or fence off rubbish tips and items containing lead from grazing paddocks. Batteries, sump oil, paint, old machinery are all sources of lead and present a risk of both poisoning and residues.
- Preventing residues in meat and meat products is critical for human food safety and WA's ongoing access to valuable export markets.
- For more information on preventing lead poisoning and residues in livestock visit the preventing residues in livestock webpage.

Batteries left accessible to livestock are a common cause of lead poisoning and residues.

In summer, be on the lookout for:

Vitamin E deficiency (nutritional myopathy) in weaner sheep

- can be common in weaner sheep during the long, dry summer-autumn period, or in feedlot animals
- sheep may be weak, lame, in poor condition or die suddenly when driven
- signs are exacerbated with stress such as driving, shearing or heavy worm burdens
- body stores of vitamin E decline on any dry feed, however the decline can be more rapid on high-grain diets
- a 2,000 mg/sheep vitamin E drench can treat deficient sheep for 6 weeks. Severely affected sheep may require a repeat dose 2 to 3 weeks later.
- vitamin E deficiency is rapidly resolved with access to green feed.
- lameness can occur with reportable diseases footrot and foot-and-mouth disease, so always have a vet investigate lameness in sheep, cattle and pigs to determine the cause.
- Read more on vitamin E deficiency in sheep.

Annual ryegrass toxicity (ARGT)

- annual ryegrass infected by the bacterium *Rathayibacter toxicus*
- cases can occur as soon as there is widespread seedset in ryegrass pastures (typically from early October)

- infected ryegrass remains toxic when it has senesced and dried off. Hay made after seed set has started from toxic ryegrass will also be toxic. All grazing animals are susceptible, including horses and pigs.
- clinical signs include sudden death, staggering and convulsions brought on by stress. Sometimes animals show a rapid recovery from symptoms.
- when buying hay, it is recommended that you ask for a vendor declaration before purchase stating ARGT testing has been done and there was negligible risk of ARGT.
- producers should always contact their veterinarian if they see sudden death or nervous signs in livestock, especially where several animals are affected. A veterinary investigation is important to obtain a rapid diagnosis and appropriate management or treatment to stop the disease and to rule out exotic diseases. Subsidies may be available for these investigations.
- pasture samples can be tested for ARGT at DPIRD's Diagnostic Laboratory Services (DDLS). See DPIRD's testing hay for ARGT webpage for information on collecting samples.
- Read more on annual ryegrass toxicity in livestock.

Water quality issues

- if water quality is poor, livestock may drink less than they need, or rarely, may stop drinking altogether. Animals drinking less will also eat less and lose condition. Milk production in lactating animals may reduce or cease.
- water quality for livestock in Western Australia is more affected by water salinity, and the presence of water contaminants such as blue-green algae, organic material, heavy metals and chemicals.
- blue-green algae poisoning can cause neurological and liver disease and stock death.
- water contaminated with organic matter can result in botulism in cattle or salmonellosis in sheep.
- ensure all water sources for livestock have safe salinity levels. Salinity will increase in summer due to evaporation.
- water samples can be tested for salinity, pH and toxic blue-green algae at DPIRD's Diagnostic Laboratory Services (DDLS). See DPIRD's water sampling procedure webpage for further information.
- Read more on water quality for livestock.

Refresher on the National Transmissible Spongiform Encephalopathies Surveillance Program (NTSESP)

- The National TSE Surveillance Program (NTSESP) conducts surveillance for bovine spongiform encephalopathy (BSE or mad cow disease) in cattle and scrapie in sheep. Typical BSE and scrapie do not occur in Australia, but Australia is required to have a surveillance program to provide assurance that BSE and scrapie is not present in the population. Animal Health Australia (AHA) manages the NTSESP, and the project is planned and implemented through the TSE Freedom Assurance Program National Advisory Committee, comprised of representatives from relevant livestock industries, the Australian Government and state and territory animal health agencies.
- In the past, Australia's target, to achieve this status, was estimated at a minimum of 150,000 surveillance points during a 7 year moving window. This number is subject to change.
- The NTSESP supports Australian trade by:
- maintaining a surveillance system for TSEs that is consistent with the OIE Terrestrial Animal Health Code
- assuring all countries that import our cattle and sheep commodities that Australia remains free of these diseases.

Eligibility criteria

- Please note access to the NTSESP can only be achieved through a veterinarian assessment and post-mortem of affected stock.

1. Species – only cattle and sheep are eligible for payment.
2. Live examination of the affected animal by the submitting veterinarian
3. Age:
    - Cattle: aged between 30 months and 9 years of age
    - Sheep: aged between 18 months and 5 years of age
4. At least 2 clinical signs consistent with BSE or scrapie
5. Completion of required forms – each submission must include a completed laboratory submission form.
6. Cannot claim rebates for more than 2 animals per disease incident per property.

Submission forms and rebates

- Submission forms must be filled out to completion to be granted approval for TSE testing and rebates.
- Forms for producers

- If you see nervous/neurological signs in your livestock, phone a veterinarian. Some exotic diseases, such as transmissible spongiform encephalopathy, can cause similar signs. Testing helps to prove that WA is free from such diseases and further supports the industry.
- For questions and further information on the TSE program, see DPIRD's NTSESP webpage, talk to your private veterinarian or your local DPIRD field veterinary officer.

WA builds capacity to respond to an emergency animal disease through Veterinary Practitioners Training Program

- The Western Australian Emergency Animal Disease (EAD) Veterinary Reserve project is designed to increase the number of trained non-government veterinarians available to effectively contribute to an EAD response in Western Australia.
- The first group of 23 veterinary reserve trainees begun the program on 1 November 2023. The participation of non-government veterinarians and rapid response are two crucial elements to Western Australia's ability to contain an emergency animal disease outbreak. The training program will increase WA's capability to respond effectively to an Emergency Animal Disease (EAD) incursion.

Thank you for your ongoing work to protect WA's biosecurity!

- Thank you for continuing to work with DPIRD to protect Western Australia's biosecurity and markets during 2023 and your ongoing support in 2024. Your awareness of reportable diseases and submissions to DPIRD Diagnostics and Laboratory Services (DDLS) are crucial to maintaining our excellent animal health status and protecting our markets.

Livestock disease investigations protect your markets

- Australia's ability to sell livestock and livestock products depends on evidence from our livestock disease surveillance and investigations to provide evidence Australia is free from many significant market sensitive livestock diseases.
- Find out more about WA's animal health surveillance programs.

Feedback

- We welcome feedback. To provide comments or to subscribe to the newsletter, email waldo@dpird.wa.gov.au.