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Inside this issue:

New Chief Veterinary Officer for the Territory	1
Livestock disease investigations	2
Zamia poisoning in cattle in the Katherine Region	2
Bovine Johne's disease: testing and import requirements for beef cattle travelling to WA	5

New Chief Veterinary Officer for the Territory

In May, Sue Fitzpatrick was appointed as the Northern Territory Chief Veterinary Officer. Many pastoralists will know Sue from her time as the Principal Veterinary Officer in Darwin, and her time spent in the Katherine region as Field Veterinary Officer.



Sue first came to the Northern Territory in 2003 working with the Katherine region stockies and vets on the Tuberculosis Freedom Assurance Program (TFAP) following the eradication of Bovine Tuberculosis from Australia. Since this time, Sue has worked in various veterinary field and policy roles overseeing disease surveillance and control programs including cattle tick management.

Sue also worked for Department of Agriculture in 2016 and 2017 as the NT Regional Manager and Director of Disease Surveillance for Northern Australian Quarantine Strategy overseeing the Northern Australian Biosecurity Surveillance Projects.

Sue has represented the NT on a number of committees and working groups, including the national Animal Health Committee and Animal Welfare Committee. Sue has also been involved in numerous disease responses in the Northern Territory, and has operated as planning manager and incident controller.

Sue remains committed to working with industry and community stakeholders to ensure that the livestock and veterinary industries are protected and government provides the support and simple regulation to meet the standards for industry growth and development.

Livestock disease investigations

The Department of Primary Industry and Resources provides a free disease investigation service, including free diagnostic testing through the Berrimah Veterinary Laboratory, to livestock owners for diagnosis or exclusion of notifiable emergency, exotic and endemic disease, including zoonotic diseases. Subsidies are available for producers to contact private veterinarians for significant disease investigations in livestock.

Subsidies for disease investigation

- subsidies of up to \$2,000 are available for disease investigations in cattle conducted by private vets as part of the Northern Australia Biosecurity Surveillance project
- for disease investigations in horses and other species, subsidies of up to \$250 are available
- remember that \$300 is available for cattle showing nervous signs where a post-mortem is performed and the brain is collected for “Mad Cow” exclusion testing.

Please contact your local vet or regional Livestock Biosecurity Officer for more information.

During January to March 2019, 52 livestock disease investigations were conducted to rule out emergency diseases or investigate suspect notifiable diseases across the NT.

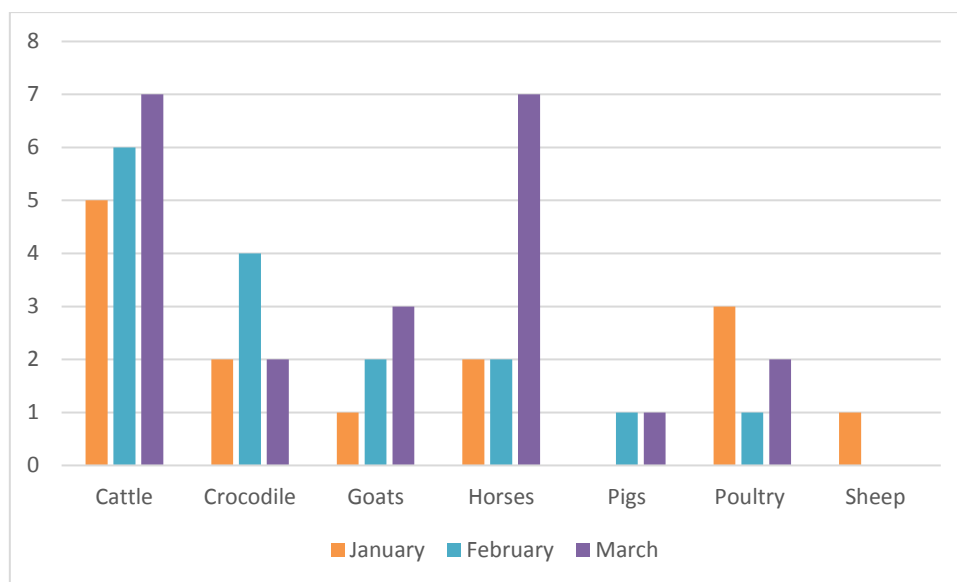


Figure 1: Livestock disease investigations in the NT, January to March 2019

Animal Health July 2019

Megan Pickering, Katherine Regional Veterinary Officer

Cycads or zamia palms in Australia, belong to an ancient family of plants which have existed since the Mesozoic era, pre-dating flowers, grasses and trees. They were the cause of the first documented plant poisonings by European explorers: Vlaming (1697), Cook (1770), La Perouse (1788) and Flinders (1801) all mention consumption of zamia palm as the cause of sickness in men, pigs and cattle¹.

Cycad genera are likely to cause toxicity syndromes in livestock are *Cycas*, *Macrozamia* and *Bowenia*; in the Northern Territory; they are primarily found around the Top End and in coastal areas around the Gulf of Carpentaria. The plants have palm-like leaves arranged in a rosette formation around a single trunk, which in most species remains quite low to the ground, and is therefore easily accessible to grazing livestock (see Figures 3-6). The leaves, seeds and roots contain at least two toxins: an unidentified neurotoxin which causes irreversible damage to the spinal cord in cattle, and cycasin which, when metabolised to

formaldehyde and methylazoxymethanol (MAM), is hepatotoxic in herbivores, pigs, dogs and humans². Early explorers who ate small amounts of cycad nuts suffered from severe vomiting and diarrhoea; modern case reports include accidental poisonings of small children and dogs who have developed fulminant liver necrosis with devastating consequences³.

Livestock may graze cycads when other feed is scarce or if new shoots and leaves are within easy reach; seeds and young fronds appear to be quite palatable, but are most likely to be consumed during very dry conditions or when re-growth appears after a bushfire. In cattle, chronic exposure leads to progressive and irreversible paresis or paralysis, which producers may refer to as 'wobbles', zamia staggers or (mistakenly), 'rickets'⁴. Ataxia and paralysis result from degeneration of nerves in the mid-cervical and lumbar spinal cord, both of which should be included as sampling sites for histopathologic diagnosis. Laboratory findings include bilateral demyelination and axonal degeneration of the spinal cord. Clinical signs may develop as soon as 14 days after eating the plants, or may be slowly progressive over a number of years, and initially include:

- Goose-stepping gait in the hind limbs
- Knuckling of the hind fetlocks
- Wasting of the hindquarters

Differential diagnoses to consider in cases of chronic bovine neurological disease include:

- Bovine Spongiform Encephalopathy
- Rabies
- Tetanus
- Encephalomyelitis
- Sarcostemma poisoning
- Space-occupying lesion of the central nervous system – abscess, cyst, neoplasia
- Lead poisoning
- Botulism

Affected cattle do not improve as the changes to the central nervous system are irreversible. Cattle may die from misadventure (falling into ditches, gullies and watercourses) or may perish when they become too weak to access water. Despite the meat being unaffected, animals exhibiting clinical signs are not suitable for slaughter through abattoirs as they are not fit to load for transport. There have been a number of confirmed cases of zamia poisoning on properties in the Katherine region over recent months; some animals are native-born, while others have been purchased from elsewhere in the NT or from Queensland, with clinical signs developing sometime after purchase. In each case, cattle have presented with progression of signs of knuckling (see image, page 2), falling/staggering and plaiting of the hind limbs, increasing debilitation, weight loss, and inability to rise and eventually, either death or humane destruction has resulted.

Control of cycads may be problematic for livestock producers. Many cycads are protected under conservation laws and cannot be destroyed. One solution if production losses are significant, is to fence off zamia country and limit access to it unless grazing is plentiful and cycads are not in an active growth phase. Diagnosis of zamia staggers is presumptive in the field (based on clinical signs, access to plants and evidence of grazing), but definitive confirmation is made on post-mortem histology in the laboratory. Animals with suspected zamia staggers are suitable for TSE-exclusion testing, which attracts a producer subsidy under the National TSE Freedom Assurance Program. This program provides evidence to support international market access for the cattle industry.

Common Cycad species of the Northern Territory:

Photo credits: Clare Pearce, Parks & Wildlife Commission, Katherine NT



Figure 3 Seeds and fronds: *Cycas*



Figure 4 *Cycas calcicola*



Figure 5 *Cycas angulata*



Figure 6 Typical presentation of developing zamia staggers: note knuckling of right hind fetlock causing staggering and ataxic gait

References:

1. Hall, WTK 1964 – cited in *Cycad (zamia) poisoning in Australia Aust Vet Journal Vol.64 No.5 May 1987: 149-151*
2. *Australia's Poisonous Plants, Fungi and Cyanobacteria – A guide to species of medical and veterinary importance.* McKenzie, R. CSIRO Publishing 2012 p.122-138
3. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1939-1676.2011.00755.x>
4. Whiting MG. Toxicity of cycads. *Economic Botany* 1963;**17**:270–302.

Bovine Johne's disease: testing and import requirements for beef cattle travelling to WA

Johne's Disease (JD) is caused by a bacterial infection with *Mycobacterium paratuberculosis*, an organism that lives in the intestinal tract of ruminant animals, causing thickening of the intestine wall and gradual reduction in food absorption over time. Affected animals are hungry, but cannot absorb the nutrients they are eating. They commonly have diarrhoea, and may also have "bottle jaw", which is a result of low protein in the circulation, caused by malnutrition. Animals with JD lose weight and may eventually die from starvation. There is no treatment for the disease and pastoral properties impacted by the disease may have restricted market options. Currently, most south-east Asian live export markets require a property to have been disease free for at least 5 years. Eradication of JD from an infected herd is difficult with removal of the infected animals and extensive testing of the herd required.

Infected animals pass the JD bacterium in the faeces; it may then be transmitted between animals through faecal contamination of pasture, watercourses and yards. Direct heat and sunlight destroy the bacteria within 6 weeks, but in wet and shaded conditions, the organism can survive in the environment for more than a year. Cattle are most often infected as calves, but as the bacterium is slow growing and the changes in the intestine take place over a prolonged period, infected animals may shed the organism and thus infect other animals, before showing any clinical signs.

The Johne's Beef Assurance Score (J-BAS) is a risk management tool developed by the cattle industry and managed by Animal Health Australia, that provides a guide to the risk of JD occurring on a beef cattle property. For more information on the requirements for JD testing and the scoring system, go to Animal Health Australia's website.¹ There are a range of laboratory testing options available to assess the herd risk for JD and to establish herd J-BAS status, however, diagnosis is challenging owing to the nature of the organism. Further information on sampling is available at the Animal Health Australia website.² With respect to check and sample testing herds to satisfy WA entry requirements, HT-J PCR or faecal culture are considered acceptable. If you require Western Australian import documents please follow this link to the Western Australian Government website.³

For beef cattle entering Western Australia from the Northern Territory and Queensland, there are specific border controls that are designed to minimize the risk of JD in cattle entering WA, which differ from J-BAS testing requirements and the movement requirements for entry to other states. The consignment must be accompanied by a declaration from the owner/producer stating that the animals meet the following conditions:

¹ <https://animalhealthaustralia.com.au/wp-content/uploads/J-BAS.pdf>

² <https://animalhealthaustralia.com.au/what-we-do/endemic-disease/johnes-disease-in-cattle/testing-and-diagnosis/>

³ <https://www.agric.wa.gov.au/livestock-movement-identification/documentation-importing-ruminants-western-australia>

Beef cattle entering the Western Australian beef herd from the Northern Territory and Queensland must:	Beef cattle entering Western Australia to be sent <u>directly to export or to abattoir facilities</u> must:
<ul style="list-style-type: none"> • have been born and grazed only in the Northern Territory and • have been born and grazed only on eligible properties and only with cattle that meet these conditions; and • are not from a herd infected or suspected to be infected with JD for the last 5 years; and • are <u>from a property of origin that has a J-BAS 7 or higher</u>, and • from 1 January 2018, <u>the property of origin must have a negative check test within the last 12 months.</u> • JD testing laboratory report Property Identification Code (PIC) number must match the PIC number on the NLIS device in the animal's ear. Therefore, cattle in the consignment born or originating from a different PIC must have JD testing laboratory documentation from the original property. 	<ul style="list-style-type: none"> • have been born and grazed only on eligible properties and only with cattle that meet these conditions; and • are not from a herd infected or suspected to be infected with JD for the last 5 years; and • are from a property of origin that has a J-BAS 6 or higher; and • are accompanied by an NLIS file • any animals that are rejected from export or abattoir may be required to be exported back out of WA or euthanized.

For further information on J-BAS requirements for cattle entering Western Australia from the Northern Territory, including further specific documentation for movement of animals not born in the NT, please contact your Regional Biosecurity Officer.

Reminder: 2018 Audit of NT Brands Register

Have you received the 2018 Audit of NT Brands Register form and instructions?

Yes, you have received the form

Have you completed the form as per instructions?

Have you returned the form to LISA for processing?

No, you have not received the form

You must urgently complete the Brands Audit form. If lost, please complete the form on the Northern Territory Government website⁴ and return for processing.

⁴ www.nt.gov.au/agriculture/livestock

Changes required

If there are any changes to your brand registration, please write notes on the audit form so that the appropriate paperwork can be sent to you. For example, 'brand no longer being used' would require a cancel brand form, or registered owner change paperwork.

Contact

Please return audit form via any of these options:

- Email adele.kluth@nt.gov.au or susan.gillis@nt.gov.au
- Fax (08) 8999 2089, (08) 8973 9759 or (08) 8962 4480
- Post to DPIR, GPO Box 3000, Darwin NT 0801

Thank you for completing the audit.

Travelling livestock movements: imported livestock

Obligations of the owner of the imported livestock

1. Must ensure there is a completed NT Health Certificate/Waybill (NTHCW) issued for the livestock before they enter the NT.
2. NTHCW must have all sections completed and signed off by an Inspector from the State or Territory where the travel of the livestock begins.
3. Ensure there is a National Cattle Health Statement (NCHS) completed by the previous owner of the livestock.
4. Ensure all livestock meet NT entry requirements and are fit for the intended journey.
5. Deliver completed NTHCW and NCHS documents to the person in charge.

Travelling livestock movements: internal NT

Obligations of the owner of the livestock

1. Issue a completed waybill for the primary livestock which you are the owner of.
2. Issue a completed waybill for the other livestock which you are not the owner of but are travelling with the primary livestock.
3. Deliver completed waybills to the person in charge.

Obligations of the person in charge of travelling livestock

1. Must sign the waybills for the livestock
2. Have possession of the completed waybills during the entire period of travel.

Property Management under exceptional seasonal conditions

With most NT regions experiencing lower than anticipated rainfall during 2018/2019 seasons and a reduction in available feed, many pastoral properties have an increased risk of running short of feed, managing lighter conditioned cattle and considering destocking options, especially those properties carrying high stock numbers. Acting Chief Veterinary Officer, Anthony Kettle and Principal Livestock Biosecurity Officer, Thomas Haines visited twelve properties in the Barkly region over a three day period in

March 2019. The trip was made to identify issues that pastoralists were experiencing as a result of the below average season.



During the visits pastoralists outlined their management plans for the coming year. All of the properties visited had started implementing strategies to best manage the condition of their livestock and land for the year to come. The majority of pastoralists were in the midst of destocking and finding further agistment on properties in either Western Australia or Queensland. Pastoralists had also begun adding

water points and opening up new country to be grazed by livestock, weaning early when practical and providing supplements for cattle to help maintain their condition.

The Livestock Biosecurity Branch are very grateful for the time the pastoralists took out of their busy schedule to show the pasture and livestock conditions across the Barkly and discuss their plans for the coming year. Resources for the 2019 northern pastoral season available to assist with management planning can be sourced from the Western Australian Government website.⁵

The department is also coordinating the water infrastructure rebate scheme where eligible NT pastoral properties are entitled to a 25% rebate of up to \$25,000 for the purchase and installation of operational water infrastructure that manages the welfare of livestock and improves drought resilience. For more information and applications go to the Northern Territory Government website.⁶

Contact the Livestock Biosecurity team

Darwin		Katherine	
Regional Livestock Biosecurity Officer	08 8999 2034	Regional Livestock Biosecurity Officer	08 8973 9767
Livestock Biosecurity Officer	08 8999 2030	Livestock Biosecurity Officer	08 8973 9765
Tennant Creek		Alice Springs	
Principal Livestock Biosecurity Officer	08 8962 4458	Senior Field Veterinary Officer	08 8951 8181
Livestock Biosecurity Officer	08 8962 4492	Regional Livestock Biosecurity Officer	08 8951 8125

Department website: nt.gov.au/industry/agriculture/livestock

⁵ <https://www.agric.wa.gov.au/2019-northern-pastoral-season?nopaging=1>

⁶ <https://nt.gov.au/industry/agriculture/farm-management/get-financial-help-farm-businesses/water-infrastructure-rebate>