



Masterclass 2021 – 23rd March – register now

Hi everyone

The NABS Masterclass is running as two online events this year. The first is on Tuesday 23rd March. The second one is planned for November.

I think there is great benefit in sharing our SDI experiences around the network and hearing from technical experts on related topics. Being online will make it easier for multiple people in a practice to participate – so do grab that opportunity.

See below to register – and put ‘NABS Masterclass’ in the diary for March 23rd.

Investment in people can provide benefits over many years. In this newsletter there’s a conversation with Lorna Melville, Principal Veterinary Virologist at Berrimah. Lorna came to the Territory as a new graduate in 1974 because she had been on a Commonwealth Cadetship. Let’s support any chance that arises to invest in the next gen of young vets who could come to the north.

Cheers Kev

Newsletter #27 (3 February 2021)

Masterclass 2021- 23rd March – online

The NABS Masterclass this year is online. This is partly because COVID-19 restrictions are unpredictable and partly because it would be excellent to have this additional approach to connect across the whole of the north – so the plan is to use our new-found Zoom skills.

It will be a great opportunity for practitioners, government vets, pathologists and others in the frontline of biosecurity surveillance in the north to get together – to put names to faces and to share practical advice about doing disease investigations.

There will be a full morning of case studies, presentations on toxicology and plant poisonings and discussions across the network – young and old. Build your CPD by participating in this Masterclass which is specifically for NABS network members, and free to attend.

Tuesday 23rd March

**10.00am-1.30pm (Qld), 9.30am-1.00pm (NT), 8.00am-11.30am (WA),
11.00am-2.30pm (ASET).**

[Click here to REGISTER](#)

Two mobs on different properties with Bovine hypertensive syndrome

In November 2020 in northern WA, 220 aged (7+ years) cows were drafted off to be fed good quality oaten and Rhodes grass hay and pellets to improve body condition prior to shipment to Queensland. The supplementary feeding started in the paddock and a week later most of the cows were put into a newly constructed feedlot.

Two days after entry into the feedlot, cattle started developing signs of weakness and ataxia, with 13 animals dying over 10 days. One animal that was unable to rise was euthanised and a post-mortem performed.



Dead cow (foreground) and recumbent cow euthanised for PM (behind).

The cow had some diarrhoea. The forestomachs were full, eliminating inanition as a problem, which is sometimes seen in older cows introduced to a new ration. No abnormality was identified at gross post mortem apart from the right side of the heart looking thin-walled and flabby compared with normal.

Differentials included botulism (top of list), some form of poisoning or metabolic disease.

A full set of tissue samples were sent to the lab and bloods collected from 20 cows to assess botulism natural exposure and vaccination status of the mob. Meanwhile the cows were re-vaccinated for botulism and moved back into the paddock with access to hay.

Botulism type C and D Elisa results were positive for all animals indicating successful prior vaccination.

Histopathology revealed multi-organ (lung, kidney, heart) hypertensive vasculopathy, leading to an aetiological diagnosis of Bovine hypertensive syndrome.

A recent submission to the lab from a different station had resulted in the same histopathological findings.

Bovine hypertensive syndrome

Bovine pulmonary hypertension is initiated by high pressure flow of blood in the pulmonary artery and occurs in conditions where there is increased resistance in the pulmonary vascular system. Pathology is characterized by muscular hypertrophy of pulmonary arterial vessels with perivascular fibrosis and arterial lumen narrowing.

Well documented causes of bovine pulmonary hypertension include: the hypoxia induced syndromes of high altitude disease (brisket disease) and chronic pneumonia, which induce pulmonary arteriolar changes; and less frequently poisoning, for example by *Pimelea* spp, which causes constriction of pulmonary vessels leading to pulmonary hypertension.

Over the last decade a syndrome termed bovine pulmonary hypertension and congestive heart failure syndrome (BPHCHF), very similar to high altitude disease, has been described in feedlots at low altitudes across the great Western plains of the United States and Canada and similar pathology has been identified in some low altitude feedlots in South Africa.

Further investigation of the history showed that affected groups of cattle on both stations had been fed hay from the same source (same centre pivot and same cut), which strongly suggested a toxin, probably related to a plant contaminant (*Pimelia* spp) or mycotoxin. Other mobs of cattle had been fed the same hay without problems but this may have been because contamination was patchy.

Further laboratory investigations – still in progress:

Samples of oaten hay and Rhodes grass hay fed to the affected mob, and from a different 'control' batch were collected and submitted to DDLS.

- Visual inspection of the samples by plant pathology failed to reveal any evidence of possible contaminating toxic plants.
- All samples produced positive cultures of known mycotoxin-producing fungi.
- Mycotoxin analysis and the general toxicological/chemical screen on all hay samples is still in progress, including screening the hay for simplexin, the toxic principle of *Pimelia* spp.
- And ionophore analysis of the feed pellets is in progress.

We'll follow up when more results are available.

Gross path challenge - what do you see?

Describe what you see in the picture below.

(Goat lung, from: Ayrial Foster, Berrimah)



How did you go? - [Answer](#)

‘Go to Darwin and run the lab’

Lorna Melville and the Berrimah Vet Lab are almost synonymous to veterinarians and producers across northern Australia. Much of our veterinary pathology and virology capacity has been built under her watch. There’s a whisper that Lorna may retire in a few months, so we wanted to catch her for a conversation about her 47 years in the Territory.



“I came to the NT in 1974 as a new graduate who had been on a Commonwealth cadetship and had a ‘return of service’ commitment. I worked as a field veterinarian in Darwin and Katherine. It was full-on BTEC days, so I was mostly doing TB testing and some field laboratory testing for Brucellosis.”

“There was a new lab built in Darwin, but before it was opened Cyclone Tracy hit. By 1976 it looked like the plant scientists might take it over, so Peter Hooper said to me ‘go to Darwin and run the lab – make sure you occupy all the rooms’ – so I did.”

The next year Bluetongue Virus was isolated from sentinel sampling at Beatrice Hill and the impact was second only to FMD. It rocketed virology to the forefront of the veterinary laboratory efforts.

Lorna ran pathology at Berrimah, then had two years in Kenya 1981-2, and when she returned took over the virology laboratory. Much of our practical and theoretical knowledge of Australian and exotic arboviruses has been due to her input. New and emerging industries like croc farming and aquaculture have advanced because of the lab services. And many young pathologists and veterinarians have benefitted greatly from her generous mentoring. Their thanks, and a recognition of an Australia Day honour in 2014, are testimony to that.

Now, 45 years after occupying the lab, what does Lorna see as the next challenges in disease preparedness?

“Emerging diseases – arboviruses that are new or extending their range as the climate changes. For example, African horse sickness, and Lumpy skin disease, and African swine fever are all getting closer and closer to Australia”.

“There is willingness for government support for infrastructure – some good facilities being built – but the challenge is keeping field staff. The NABS network helps, but we need 5 Lil Stedmans too.”

“My advice to young vets ‘Go north, or west, just get out of the cities, the opportunities are wonderful’.”

And what’s next for Lorna? “Well some volunteering and caravanning probably – doing things in a bit of comfort these days”.

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Newsletter sent on Kevin's behalf from the team at Harris Park Group

Let us know anything you'd like covered here or on the website