Register now for the Masterclass - 23rd March

Hi everyone

If you haven't yet registered for the NABS Masterclass on Tuesday 23rd March, you can use the link below to do so. It would be great to see you there.

We are currently setting up a 'dashboard' to show the number and type of SDIs completed right across the north, with stats on syndromes, confirmed diagnoses and disease exclusions.

From next month we will show a summary in the newsletter and on the nabsnet website. This should be an excellent way for us all to see what's happening in the region. It will also mean there's a focus on the details for each SDI. Please be sure to indicate the differentials you have considered and the number of animals at risk in your reports.

ABARES is doing a research project on biosecurity surveillance projects and keen to know how we work as the NABS network. If you receive a survey from them in the next while, it would be great if you would respond. We learn a heap about how to make things work better from those of you on the frontline.

Cheers Kev

Newsletter #28 (10 March 2021)

Masterclass - 23rd March – online

Register now (use this link or register via nabsnet.com.au under 'Events')

The Masterclass will be online this year. Multiple people in each practice can attend, so do also extend this invitation to other vets in your workplace who are involved in disease investigations. Registration is free.

Features of this Masterclass will include:

- Case studies of recent SDIs
- Pathology and biochemistry of plant toxicology
- Identifying plants (that might be poisonous)
- Plenty of opportunity to network

Don't miss out. You need to register to receive the information to be able to join the Masterclass.

Tuesday 23rd March

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

5 steers dead near the water square

In late November 2020 in central Queensland, five Brahman-X steers in a mob of 450 died over three days in one area of a paddock, near the water square.

The animals in the mob were 18 months to 3 years of age and in body condition 2-3/5. They were continuously grazed in the paddock of open black soil creek flats and had not been moved or yarded in the previous 3 months. They had been vaccinated with 5-in-1 at branding and weaning and a single botulism (3 yearly) at weaning.

The vet was called and a post-mortem was performed on the animal that had died most recently (4 hours earlier).

The carcase was very pale in colour. The liver was enlarged with rounded edges. The spleen was enlarged and friable when cut. There was port-wine coloured urine in the bladder. All other organs appeared normal.

The presumptive diagnosis was tick fever (babesiosis or anaplasmosis), with anthrax deemed unlikely (location outside the anthrax belt), and a plant toxicity as a possibility.

Aqueous humour, urine and a full set of tissue samples were sent to the laboratory.

The owners were advised to dip the animals and then move them to a different paddock. They were also advised to have any further sick animals examined and treated as these may be saved with Imidocarb treatment.

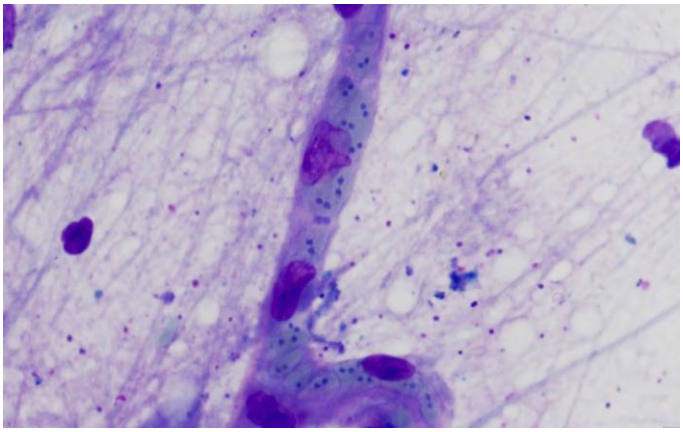
A sick animal that was examined the next day was very lethargic, with pale mucous membranes and temperature of 41oC. Blood samples and smears were sent to the laboratory and the animal treated.

At the laboratory, analyses of the aqueous humour for nitrate, nitrite and cyanide were negative. Polychrome methylene blue stain of liver and spleen for Bacillus anthracis was negative.

Smears of brain, liver and spleen showed significant parasitaemia with Babesia bovis.

No further animals died. A tick fever vaccination protocol was recommended for future weaners, and all purchased animals that had not been vaccinated.

Post-script: Practice ‘corporate memory’ recalls seeing tick fever near the same water square in the 1980s.

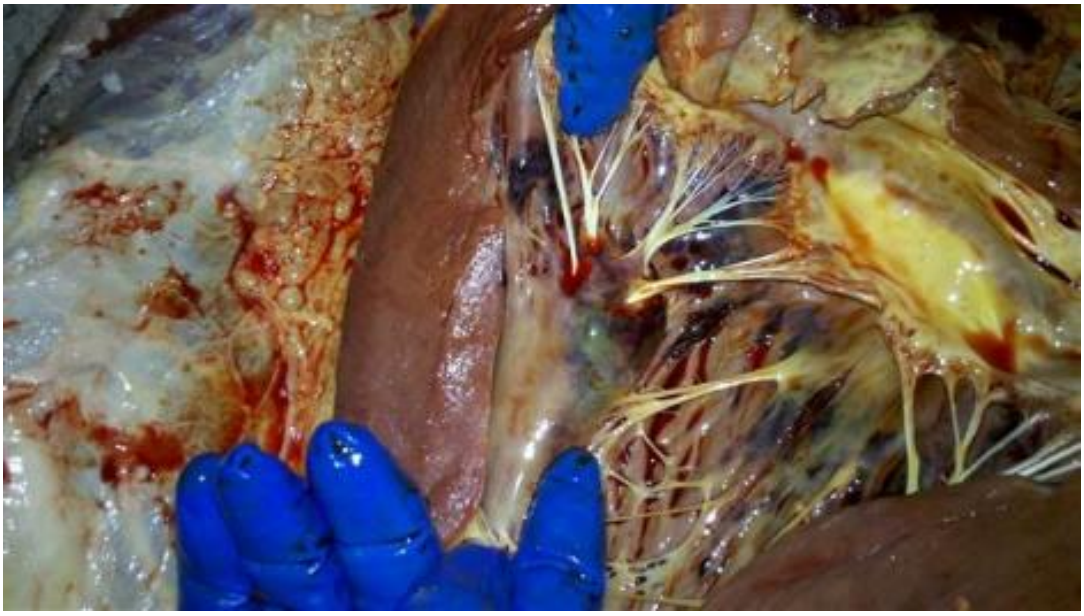


Red blood cells in a capillary, many containing pear-shaped, often paired, basophilic organisms consistent in size and shape with Babesia bovis.
(BVL: 100x Giemsa stain of brain smear)

Gross path challenge - what do you see?

Describe what you see in the picture below.

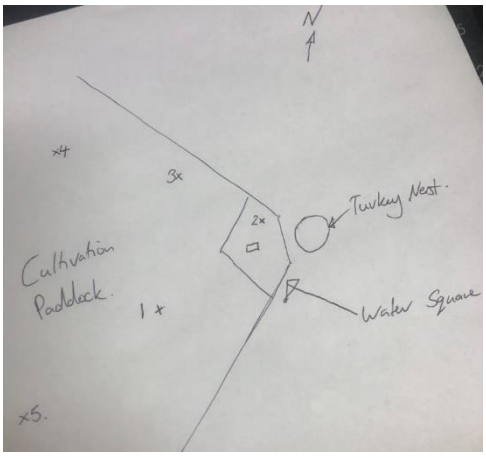
(Bovine heart, from Ayrial Foster, Berrimah)



How did you go? – Answer

Trap: Please NO SHARPS in specimens sent to the Lab

Tip: Finding clusters in SDIs



Disease investigations are puzzles we solve by looking for patterns. Potential key risk factors are identified for testing when they are linked with clusters of cases.

Maps and timelines really help you to visualise where and when events cluster in space and time, but to find clusters associated with animal characteristics, management factors or environmental factors you need to do some simple number crunching.

There are two calculations to assess the key contributing factors for disease events:

- Attack rate = number of cases / number of animals exposed
- Relative risk = attack rate 1 / attack rate 2

To do them you need to know the number of animals exposed to each factor as well as the number of affected animals.

Take a simple example: 50 cases (of case definition X) have occurred in a mob of 505 steers.

If 45 of 225 steers that have been dipped are affected, the attack rate in that group is 20%. If 5 cases have occurred in 280 steers that weren't dipped, their attack rate is 2%. The relative risk is 20/2 =10. This means the risk of having the disease is 10 times higher if animals were dipped than if they were not.

If 10 cases occurred in the 105 Brangus steers, and 40 cases in the 400 Brahmans then the attack rates are both 10% and the relative risk is 1. This means there is no indication that breed has anything to do with the disease event.

If 15% of the steers in the western yards were affected and 30% of the animals in the eastern yards, the relative risk is 2.

The highest relative risks are closest to identifying the key contributing factors of the disease event – and provide strong pointers for further investigation. Now out to look at that dip and ask about the dipping process!

Often we do these assessments 'intuitively', but actually counting and calculating is really helpful to unpick the complex puzzles presented by many SDIs.

As you work through each SDI, draw up maps and timelines and record the number of animals exposed to the risk factors that you suspect. Include these in your reports, along with some photos, and we can all learn from your thinking and efforts.

Missed earlier newsletters? read them here

To subscribe: join here

Key contacts for the NABS SDI network

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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