



NABSnet

Newsletter

#41 | 1 May 2023

Be part of the skin survey

Hi all in our NABSnet network

Terrific to connect with so many people at the Masterclass in Darwin. Thanks to WA DPIRD for arrangements and NT Berrimah Vet Lab for some great practical sessions. Let's launch into the dry season with a laser focus on doing SDIs.



Congratulations to Peter Letchford on ACV Bovine Practitioner of the Year. Peter has done some fantastic NABS SDIs - with great outcomes for his clients and ever willing to share his findings at Masterclasses and through this newsletter.

The possibility of LSD incursion into northern Australia is now on everyone's radar. Over the next few weeks **NABSnet practitioners are invited to participate in a project to sample cattle skin lesions that they see during routine work** – not LSD suspect cases, but any other skin diseases. This will help us to better understand what skin conditions are out there and to contribute to our 'evidence of absence' of LSD. See the details below and contact your state/territory govt vet, or me, if you would like to be involved.

Enjoy a quiz on insect vectors, based on info from entomologist Glenn Bellis at the Masterclass.

And a big welcome to Teagan Fitzwater who has taken on the NABSnet leadership for DAFF while Cass Wittwer is on maternity leave.

Cheers
Kev



NABSnet Masterclass participants, Darwin March 2023

Bovine Practitioner of the Year – Peter Letchford

Massive congrats to Peter on receiving this awesome recognition at the recent Australian Cattle Vets conference. Peter has been a part of NABSnet since the very beginning – giving his on-the-ground (and sometimes in-the-air) view of cattle practice in the north. Peter's willingness to share his knowledge and experience with all of us has been outstanding and his commitment to high quality disease investigations an inspiration. An award so well deserved!



NABSnet cattle skin survey - May-June 2023

What cattle skin lesions are out there? NABSnet vet practitioners are invited to participate in a short-term project to examine cattle skin lesions across the north. Of course any suspect LSD lesions should be treated as EAD-urgent. But there is also value in looking at other skin lesions to confirm that they **aren't** LSD.

In May and June samples collected from skin lesions observed during routine cattle work can be submitted to the labs to get a confirmed diagnosis, and contribute to our 'evidence of absence' of LSD. Each property submission can be invoiced through NABSnet for \$500 + freight where relevant.

This project will give us a picture of cattle skin lesions, confirmed by lab examination, and help keep the focus on LSD exclusions in the early dry period when cattle are first mustered.

It also gives an opportunity to remind producers and people around the cattle yards that watching cattle for skin lesions is important. But it needs to be very clear that these are NOT suspect LSD cases. The project is surveying skin lesions that occur from other, often common, causes.

To be involved, or get more information, contact Kevin now on 0427 433 244.



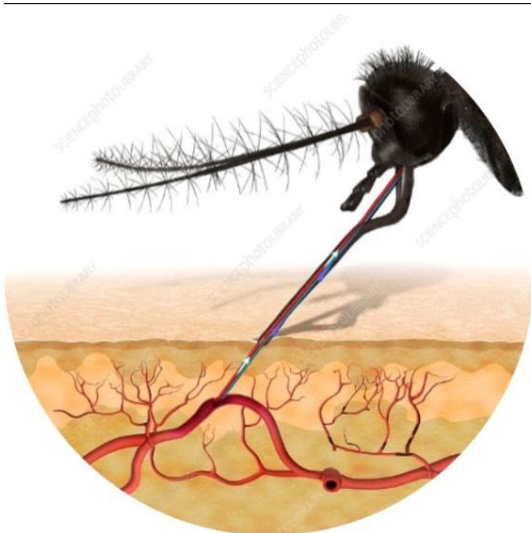
The process:

- NABSnet practitioners who are going on property to do routine work identify cattle with skin lesions and draft them off for sampling. Up to 2 animals with a similar clinical condition to be sampled, for as many clinical conditions as seen on that property (eg 2 animals with *Dermatophilus*, 2 with papillomas).
- LSD sampling kits will be supplied, with a standard submission form and simple supplementary form. An info flyer for the property owner will also be supplied.
- What to do to send samples:
 - **Photograph** the lesions
 - Fill in the **history** and **description** of the lesions on the submission form
 - Collect two biopsies from each animal: a **formalin fixed** and a **fresh sample**
 - Collect **serum and EDTA blood from each animal** sampled - NOTE this is not required in WA (different lab protocol).
 - Pack the samples and **send to the state Lab** with the lab submission and supplementary forms, to arrive the next day.
 - **Email the photos** to the lab (or include with the submission).
- Notify Kevin Bell that the samples have been sent and get OK to send an invoice.
- Report the results to the property owner (no written report needed).



[More info on the cattle skin survey](#)

Quiz - what makes a great insect vector?



Mosquito at work
Photo credit: Science Photo Library



Stable fly mouthparts
Photo credit: Eye of Science

Entomologist Glenn Bellis from Charles Darwin University intrigued us at the recent Masterclass with some characteristics that influence how insects operate as vectors. What do you know about the vector potential of invertebrates, for LSD in particular? Have a go at this short quiz (Answers at the end of this newsletter).

Q1 - Invertebrate vectors transmit viral pathogens from host animal to animal. Which of the statements below is FALSE ?

- a. 'Mechanical' vectors carry viral pathogens on their bodies but the viruses don't multiply in the insect.
- b. Once infected, mechanical vectors carry the virus for the rest of their lives.
- c. Insects that are 'biological' vectors have an incubation period of about a week between ingesting a viraemic blood meal and being able to transmit the virus
- d. Once infected, biological vectors carry the virus for the rest of their lives.

Q2 - LSD virus is believed to be transmitted by insects as mechanical vectors. Which of the statements below is FALSE ?

- a. Ticks have lower vector potential because they rarely move from animal to animal.
- b. House flies have lower vector potential because they do not have piercing mouthparts.
- c. Midges are easily carried by wind but their vector potential is unclear.
- d. March flies have lower vector potential because their mouthparts are easily contaminated during feeding.

Q3 - Feeding characteristics of insects influence their vector potential. Which of the statements below is FALSE ?

- a. Insects that are often interrupted in feeding are more likely to transmit LSDV
- b. Insects where both sexes of the species feed on blood are more likely to transmit LSDV
- c. Insects that feed on a wide range of host species are more likely to transmit LSDV
- d. Insects that feed multiple times per day are more likely to transmit LSDV

Q4 – Entomologists are still exploring key features of insects that might bring LSDV into northern Australia. Which of the statements below is FALSE ?

- a. Identifying whether insects have blown in from SE Asia is very difficult when the same species are present in Australia.
- b. The number of insect bites required to establish infection significantly influences the chance of incursion.
- c. Insects have been observed to survive wind-blown travel distances of 400km across the Timor Sea
- d. Insects that are abundant have lower vector potential for spread of LSDV.

ANSWERS BELOW

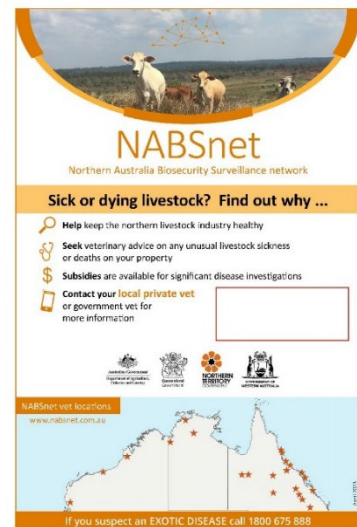
*Encouraging producers to call for disease investigations

Any significant disease event (multiple animals, mortalities or syndromes such as nervous signs or respiratory) in livestock or feral animals - is a potential SDI.

This flyer about NABSnet SDIs is available for you to alert producers to and the opportunity to have disease events investigated with your veterinary expertise and lab confirmation.

Download the flyer (you can add your clinic details if you wish), then include it in your correspondence (eg invoices or newsletters) with your clients.

[Download flyer here](#)



Big welcome to Teagan Fitzwater

If you were at either of the two recent Masterclasses (Townsville in November last year, or Darwin in March) you will have met Teagan Fitzwater who has taken on the NABSnet role for DAFF now that Cass Wittwer is on maternity leave.

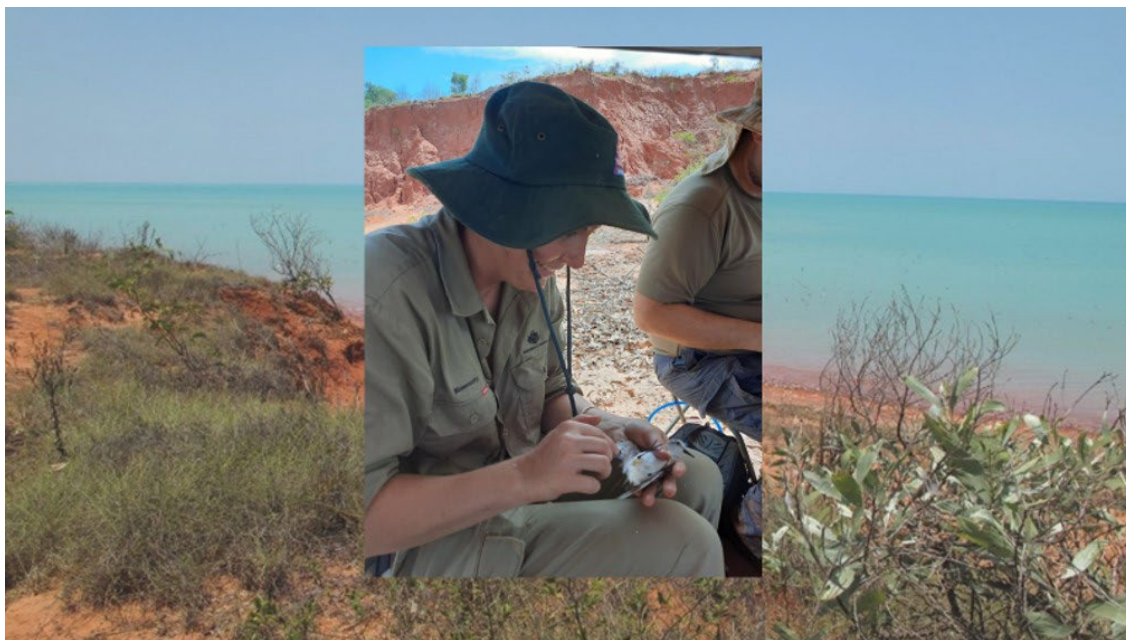
Teagan is a Senior Vet Officer with NAQS. She graduated from University of Queensland in 2013 and after some years in mixed practice and other roles, spent 3 years as an On-plant vet in abattoirs across Queensland.



“Joining NAQS in 2022 has opened a wide range of veterinary activities for me” Teagan says “there’s the desk work – policy development, operational planning for our team, providing Ministerial briefs... and there’s some incredible fieldwork like feral animal surveys. I am based in Queensland but cover the ‘whole of north’ footprint with NAQS”.

Last November Teagan was in Broome as part of the team doing wader-bird surveys. “Cannon netting and assisting specialist bird scientists with sampling birds was a fantastic experience” she said.

When not in her ‘day-job’ Teagan is camping or doing work on a property that she and her partner are developing with a beef herd.



NABSnet is a joint effort by the state, territory and Commonwealth governments, and senior vets with each jurisdiction have a role as ‘go to’ people for the network. Teagan now leads the DAFF engagement with NABSnet – welcome on board.

Teagan.Fitzwater@aff.gov.au 0466 614 706

5-year reflections

NABSnet has been operating since 2018 and we’d really like to capture some of your reflections on what’s happened, and what the opportunities are for the next 5 years. Heads up, a survey cometh. But you don’t have to wait for that - anyone who would like to comment, don’t hesitate to contact Pauline

pauline@harrisparcgroup.com.au 0419 336 211

Answers to the Quiz

1 – b. Once infected, mechanical vectors carry the virus for the rest of their lives. FALSE

A mechanical vector carries the virus externally for example on its feet or mouthparts, or internally in the alimentary system. The virus does not infect the tissues of the insect and doesn't multiply. Over time the number of viral particles carried by the insect diminishes. In contrast, biological vectors are infected by the virus which replicates in their mid-gut cells, spreads through their haemolymph, eventually infecting salivary glands or ovaries and remains for the life of the insect.

Q2 – c. Insects that feed on a wide range of host species are more likely to transmit LSD FALSE

Each time a mechanical vector feeds on a new animal it is likely to be carrying fewer viral particles than the previous feed. Insects that feed on a wide range of hosts are less likely to feed on target host species.

When insects cause painful bites that elicit a response from the animal – and disrupt feeding – they are more likely to travel to another animal and increase the chance of transmission.

Q 3 – d. March flies have lower vector potential because their mouthparts are easily contaminated during feeding FALSE

The 'messy' insect feeders that cut skin and feed on pooled blood are perfectly equipped to transmit LSDV to a raw skin wound (that they have created).



*Mouthparts of a Tabanid spp (L) and Culicoides brevitarsis (R)
– these are great 'Swiss army knife' kits for incising skin.*

Photo credits: Alan R Walker (L), Glenn Bellis (R)



**Q4 – d. Insects that are abundant have lower vector potential for spread of LSDV.
FALSE**

It is very much a numbers game. There is strong scientific evidence that a single insect is unlikely to start an incursion of LSD. Instead, it is very likely that several insects must feed on a single animal to begin an infection. This is hard to achieve when insects are blown across several hundred kilometres.

Modelling on the number of insect bites required to carry LSDV into Australia has shown that if only one bite were required, then introduction into Australia might be a 1-in-6-years event, but if 3-5 bites by carrier insects were required to establish an infection, the risk of introduction could reduce to a 1-in-286 years event!

[NABSnet web page with links to resources on LSD](#)



Key NABS SDI network contacts

Kevin Bell, NABS Vet Adviser

Contact at: nabsvetadviser@gmail.com / 0427 433 244

or visit www.nabsnet.com.au

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Missed earlier NABSnet newsletters? [read them here](#)

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

Let us know any topics you'd like to see covered here.