NSW GOVERNMENT Primary Industries

BULLETIN TO ALL VETERINARIANS

23 August 2011

Funding of investigations of Bovine Theileriosis

Many veterinarians in NSW are seeing new herds affected by bovine theileriosis and new funding arrangements have been agreed for these investigations. The Animal Biosecurity Unit will pay for testing for bovine theileriosis (according to the protocols below) at the State Veterinary Diagnostic Laboratory until 31 December 2011. In some circumstances wider laboratory testing will be funded on properties where protracted losses occur due to theileriosis.

Background

Theileriosis in cattle in NSW is caused by infection by protozoan parasites from the *Theileria buffeli/sergenti/orientalis* group. Disease characterised by anaemia occurs when naïve cattle are exposed to pathogenic variants. Most, producers report morbidity and mortality over a relatively short period of time (weeks) followed by recovery with some secondary health effects e.g. difficulty in getting back in calf. In some cases disease is protracted (months) though the reasons are unclear.

Clinical signs

Signs are those associated with severe anaemia and include: lethargy, inappetance, exercise intolerance, tachycardia, tachypnoea, pale to jaundiced mucous membranes, transient pyrexia, abortions, and in dairy cows a drop in milk production. Haemoglobinuria is not a feature of disease. The mortality rate is highest in heavily pregnant cows.

Postmortem findings

Jaundice is common; the liver may appear swollen and yellow.

Diagnostic aids

A PCV (confirming anaemia) and blood smear to confirm piroplasms are essential. As *theileria* infection may be an incidental finding, other causes of haemolytic anaemia should also be considered and excluded where necessary.

Differential diagnoses for haemolytic anaemia

Differentials include: Brassica poisoning (kale anaemia), babesiosis and anaplasmosis (notifiable diseases in NSW, but endemic in Queensland), bacillary haemoglobinuria (*Clostridium haemolyticum*), leptospirosis in calves, post-parturient haemoglobinuria (hypophosphataemia), chronic copper toxicity (mainly in sheep, rare in cattle). Other differentials exist but are less common.

Sampling

Where clinical or post-mortem findings suggest theileriosis collect:

- blood samples in EDTA from up to 5 live affected and/or in contact animals,
- fresh spleen and liver, and fixed liver from freshly dead animals,
- Other samples as required for differential diagnosis.

Submission of specimens to the State Veterinary Diagnostic Laboratory

- Complete the Laboratory Submission form (hard copies available from EMAI or can be downloaded from http://www.dpi.nsw.gov.au/agriculture/vetmanual/submission/specimen-submission-form
- The form must include the property PIC- NSW DPI will not pay for any testing if the specimen advice form is received at the SVDL without a PIC.
- Pack samples as IATA 650 category B, biological substances UN 3373 as for all routine diagnostic specimen submissions, i.e. small foam Esky inside a cardboard box. Include an ice-brick to keep samples cool but not frozen. Double bag the samples. See Vet Lab Manual - Packaging of specimens for further detail.
- The Department has arrangements with both Metrostate (Ph. 02 9645 9700) and TNT couriers (Ph. 13 11 50 quote account number 21857635). Dispatch samples to:

  State Veterinary Diagnostic Laboratory

  Elizabeth Macarthur Agricultural Institute

  'Camden Park'

  Woodbridge Road

  Menangle NSW 2568
- For further advice on submissions ring the duty veterinarian at the State Veterinary Diagnostic Laboratory on 02 4640 6325 during business hours or 0411 030 451 out-of-hours.

Testing funded by the Animal biosecurity Unit

The Animal biosecurity Unit will fund:

- PCV and smear examination for piroplasms, and
- histopathology on the liver if one or more deaths have occurred

Testing of samples to exclude diseases other than theileriosis will be charged according to normal procedures.

Funding of investigation of protracted disease

A small number of herds have experienced protracted losses due to theileriosis. The cause of these ongoing losses is unclear. Metabolic, nutritional and other infectious agents could be involved. DPI will fund testing of these cases as outlined below.

Veterinarians who believe a herd has protracted morbidity and/or mortality associated with bovine theileriosis should contact their District Veterinarian at the local Livestock Health and Pest Authority. If it is agreed that the disease is protracted, the Senior District Veterinarian may contact the DPI Cattle Health Coordinator and provide:

- a written summary of all information on the investigations to date, including evidence that the disease had been protracted, and
- a proposal for further investigation(s) to further the understanding of the pathogenesis, epidemiology and/or predisposing factors leading to the protracted disease.

If the Cattle Health Coordinator endorses the proposed investigation, DPI will fund the laboratory testing as per the agreed investigation.

The government veterinarian will submit a summary of the investigation including aims/hypothesis, results and conclusions to the Cattle Health Coordinator within a month of completion of the testing.

Further information

For further information contact Graham Bailey, Cattle Health Coordinator Ph (02) 63913870; Mob-0400998232 or graham.bailey@industry.nsw.gov.au

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