

## SCIENTIFIC AND CLINICAL

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#### Production animals

Results of a paper looking at the financial effects of the main programs used for controlling bovine Johne's disease (BJD) suggest that living with the disease may be a viable option for some commercial beef herds.

The authors used a spreadsheet model to compare the options of test and cull, partial destocking with testing to regain non-assessed status, and total destocking, with a steady-state beef herd infected with bovine Johne's disease.

The final financial outcome was dependent on the time taken to remove restrictions on trade, which is equivalent to eradicating BJD. The effect is greatest where a producer is targeting store sales for surplus stock because of restrictions on trading of cattle from the BJD-infected herds. The authors noted the significant risks associated with the control strategies they modelled, and suggested that although BJD is unlikely to be a major problem for herds that are able to trade cattle, living with BJD is not a viable option for stud herds because of the restrictions on the sale of cattle.

A diagnostic study describes the relative sensitivities of existing commercially available antigen capture ELISAs and lateral flow immunochromatography (LAT) assays with newly developed real time reverse transcriptase PCR assays for group A rotaviruses and for bovine coronavirus in faeces from calves with diarrhoea.

These viruses of the most important pathogens associated with neonatal diarrhoea in dairy calves. The cost of diagnostic investigations has increased because laboratories have moved to full cost recovery for the non-notifiable diseases, so fewer laboratory assays are now being performed.

The sensitivity and specificity of the commercial ELISA and LAT assays were low compared to the PCR. The authors discuss the poor performance of the LAT dipstick and suggest that antigen destruction may be a problem, and that it may give better results when used at the point of sample collection. The authors suggest that further information is required on the relevance of investigating different levels of viral DNA detected by the assay.

#### Small animals

A study from Queensland investigated the prevalence of vector-borne diseases in 100 pound dogs from south-east Queensland and 130 free-roaming dogs from an aboriginal community in the Northern Territory.

At least one canine vector-borne disease pathogen was found in 3% of pound dogs and 49.2% of the free-living dogs. The higher prevalence of the diseases in the Northern Territory is likely because the tick vector, *Rhipicephalus sanguineus*, is widespread in this northern tropical region. Also, aboriginal community dogs are free-roaming, which increases tick infestation. No ticks were seen on any of the pound dogs. The authors conclude that this study has detected and provided the first characterisation of three species of haemotropic mycoplasma infecting dogs in Australia and that they should be considered in the differential diagnosis of anaemia in dogs.

A study using semi-feral cats shows that viral sequences of canine parvovirus or feline pan leucopenia virus gene can be recovered from bone marrow samples from cats that were presumed to be naturally infected with wild type parvoviruses. Samples were obtained from 32 cats that were euthanased at an animal shelter. Some cats infected with canine parvovirus variants may have clinical signs including severe gastroenteritis and leucopenia, as well as cerebral hyperplasia and ataxia in neonates, whereas others may have no clinical signs. The study showed the presence of parvovirus DNA in apparently healthy cats that were assumed to be unvaccinated. The authors suggest that further studies are needed to categorise infections in a large population of cats with known clinical histories, and that this should include bone marrow, faeces and blood for PCR and serology.

#### Wildlife & zoos

Flying foxes, or megachiropteran bats, are moving more into urban areas where they are more commonly interacting with humans, so closer examination of disease in bats is essential. This paper reports two cases of clinical toxoplasmosis in megachiropteran bats that had been submitted for necropsy. Both bats tested negatively for Australian bat Lyssa virus and Hendra virus. Both bats had widespread multifocal necrosis and inflammation associated with *Toxoplasma gondii* protozoites.

The authors note that it is highly likely that exposure to the organism occurred in both bats during captivity, but that it seems likely that similar infections may arise in free-range bats.

Poxvirus should be included in the differential diagnosis of nodular skin lesions in marsupial species, authors of a case report suggest. This paper describes a poxvirus infection in a group of common ringtails in Taronga zoo. Examination under anaesthesia showed raised erythematous swellings of the furless skin on the

digits and the white furless part of the end of the tail. Lesions were painful and were mildly inflamed, exudative and ulcerated.

There were no lesions on the face, unlike in other species, presumably because having heavily furred faces may prevent the mosquito vectors accessing the skin. These animals had localised skin infections with little general effect on health, although the authors note that they can cause generalised disease in other species.

### Equine

Regional nerve blocks are used to facilitate dental procedures in standing sedated horses, to improve welfare, the likelihood of success and the safety of the veterinarian. Different approaches have been reported for performing the inferior alveolar nerve block but the success of achieving local anaesthesia is variable.

This study investigated two different approaches, and assessed the accuracy of the topographical landmarks. Cadaver heads were placed in a metal vice to simulate the position of horses under standing sedation and red dye was passed into the appropriate areas. There was no effect of mandible size and no significant difference in the accuracy of the two approaches. The authors note that as the placement of the needle tip was relatively consistent, the recommended large volumes of anaesthetic may not be necessary and may cause inadvertent lingual nerve anaesthesia. They suggest that further investigation of agent type and volume is warranted.

Authors of a case report suggest that care must be taken in the management of horses in regions where creeping knapweed is prevalent, because of the risk of nigropallidal encephalomalacia, commonly known as chewing disease.

This is a plant poisoning of horses that causes irreversible brain damage, and has not been previously reported in Australia. The

report shows clear pictures of the plant as well as the gross appearance and histological appearance of the brain. Both horses were euthanased on humane grounds because of the hopeless prognosis associated with suspected poisoning. Pasture has to be dominated by young green plants before flowering, and up to 70% of body weight must be consumed for poisoning to occur. The diagnosis was based on the presence of clinical signs with a history of long-term access to large quantities of the plant. Differential definitive diagnosis is made by brain histopathology, and although MRI has been reported to be diagnostic, this is not really practical as a poisoning is irreversible and fatal.

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