

Disease in horses due to insect borne viruses

The wet spring and summer have resulted in an increased risk of insect borne viral infections. Viruses that are transmitted by insect vectors are broadly called arboviruses.

Since February 2011 there have been an increased number of reports of horses in NSW, South Australia and Victoria displaying two distinct disease syndromes:

- muscle and joint soreness
- nervous signs.

There has been no increased incidence of muscle/joint soreness or nervous signs in horses reported in Queensland.

The horse is usually a 'dead-end' host for mosquito-borne arbovirus infections and is not considered a likely source of new infection for people or other horses.

What to look for

The most common clinical signs in horses include, but are not limited to:

- a reluctance to walk
- a stiff gait
- ataxia (uncoordinated)
- depression
- tremors.

Different symptoms from different viruses

How Arboviruses are involved

Laboratory testing of samples from horses showing muscle and joint soreness indicates that most infections are probably due to Ross River virus, an Alphavirus (arbovirus sub-group).

Laboratory testing of samples from horses with unusual nervous signs suggests that a majority of cases are due to infection with one of several Australian strains of mosquito-borne Flaviviruses that include viruses such as Murray Valley encephalitis virus and Kunjin virus. All testing to date has ruled out Japanese encephalitis and Hendra viruses.

It is likely that many horses may be infected with arboviruses but only a small proportion of infected horses will become ill. This means that a positive blood test must be carefully interpreted. Repeat testing will be needed to show that antibody levels are rising.

Soreness signs are associated with Alphavirus infections

Reports of horses showing muscle and joint soreness have mainly originated from northern and central Victoria and South Australia. Signs are predominantly reluctance to walk, stiff gait and ataxia (uncoordinated). Affected horses usually recover with good husbandry and veterinary care.

Nervous signs are associated with Flavivirus infections

Reports of horses with nervous signs have originated from:

- along the Murray River in Victoria
- locations across South Australia from the Riverland, down the length of the Murray and areas both north and south of Adelaide from Port Pirie to the South East
- various locations in NSW, including west of the Great Divide, from Mungindi in the north to the Murray River, and a significant cluster in the Hawkesbury Valley west of Sydney and also the Upper Hunter Valley.

Early signs of infection may include depression or mild colic. These initial signs are followed by nervous signs including lack of coordination, high stepping in front limbs, weakness in the hind quarters, muscle twitching and increased responsiveness to touch and sound. In some cases there has been facial paralysis or twitching, especially of the lips. Severely affected horses may fall repeatedly and in rare cases develop convulsions.

Most horses with clinical signs recover over several weeks with good husbandry and veterinary care, however, as of 4 April 2011, of the 112 cases in NSW, around 15 have died or have had to be euthanased for animal welfare reasons.

Animal health officers in each state are assisting with these investigations.

Prevention in Horses

Horse owners should try to prevent their animals from being bitten by insects through measures including rugging, fly masks and using registered insect repellents. Ensuring that horses are kept in good condition will help build a strong immune system and minimise the risk of infection with arboviruses.

Human Health

Human health departments in most states and territories are advising the public to avoid being bitten by mosquitoes to minimise the risk of infection with these viruses. Check your state or territory's health department website for more information.

Reporting

Owners who notice horses displaying unusual signs should contact their private veterinarian immediately.

Further information

Situation updates and more local information is available on each state's Department of Primary Industries website:

- NSW: <http://www.dpi.nsw.gov.au/agriculture/livestock/horses/health/general/nervous>
- Victoria: <http://new.dpi.vic.gov.au/agriculture/pests-diseases-and-weeds/animal-diseases/vetsource>
- South Australia:
http://www.pir.sa.gov.au/biosecuritysa/animalhealth/disease_surveillance/horse_neuro_disease_150_industry_update
- Queensland:
http://www.dpi.qld.gov.au/4790_11548.htm

Information for Vets

Sample collection and laboratory submissions

Veterinarians who would like further advice on submissions of samples should contact officers in their Primary Industries or Biosecurity department:

- Biosecurity Queensland 13 25 23
- Biosecurity SA 8226 0222
- NSW State Diagnostic Laboratory 02 4640 6327
- Victorian Department of Primary Industries 136 186

Samples are being tested at state animal health laboratories and the Australian Animal Health Laboratory at Geelong.

It is important that veterinarians and any assistants take stringent precautions when performing necropsies on horses showing neurological clinical signs. Great care should be exercised when handling brain and spinal cord tissue and appropriate personal protective equipment should be utilised as part of a risk management approach to personal safety.

This fact sheet was compiled by the Department of Agriculture, Fisheries and Forestry in conjunction with state and territory departments of primary industries and the Australian Animal Health Laboratory.