

CHIEF VETERINARY OFFICER BULLETIN – 23 May 2022

For Veterinary Practitioners - Probable cases of Japanese Encephalitis in NSW horses

NSW Department of Primary Industries has detected evidence of infection with Japanese encephalitis (JE) virus in horses from several Local Land Services regions across NSW (North Coast, Hunter, Greater Sydney, Central West, Riverina, and South East regions).

Horses contract JE and other flavivirus infections from being bitten by a mosquito carrying the virus. Horses are dead-end hosts; that is, they do not transmit the virus to other horses, animals, or people.

Testing of horse serum samples in NSW has identified twenty-six horses with probable Japanese encephalitis (JE) infection and four horses as possible JE cases. These horses were probably exposed to JE virus during peak mosquito activity over summer to mid-autumn 2022. JE has not been definitively confirmed in any NSW horses. However, the combination of clinical signs and test results suggests that Japanese encephalitis infection is a probable or possible cause of the disease.

The clinical presentation of JE is similar to other mosquito-borne diseases such as infection with West Nile/ Kunjin virus and Murray Valley encephalitis virus. It can also appear clinically like Hendra virus infection. As Hendra virus can be transmitted directly from horses to people, it is important to take appropriate personal protective precautions when assessing, sampling, and treating affected horses while waiting for test results.

If you suspect Japanese encephalitis in horses, contact the **Emergency Animal Disease Watch Hotline on 1800 675 888** (24-hours)

Total mosquito abundance in NSW has reduced in recent weeks. Abundance of *Culex annulirostris* (the mosquito thought to be of most significance in transmitting JE virus) is currently low across NSW (further information available at:

<https://www.health.nsw.gov.au/environment/pests/vector/Pages/nswasp-weekly-report-2021-22.aspx>)

Notes on interpretation of tests

It is not possible to provide definitive confirmation of disease due to a flavivirus based on serological tests that have been undertaken on a single serum sample. Single positive flavivirus serology results suggest that the animal has been infected with at least one of the flaviviruses at some time in the past. However, it is not possible to establish whether this is a recent or historical event.

Further, serological tests for flaviviruses are affected by a lack of specificity, with serological cross-reactivity frequently observed, particularly between members of the same serogroup

(Japanese encephalitis virus/ Murray Valley encephalitis virus/ West Nile virus). Nevertheless, reactivity in a single test with negative results in other flavivirus tests increases the likelihood of identifying the infecting virus.

Demonstrating seroconversion or a significant increase in antibody level (a greater than fourfold rise in titre) to a flavivirus in a virus neutralisation test, by testing paired serum samples collected 3-4 weeks apart, is required to confirm a case of JE infection in animals showing clinical signs of JE.

Additional Information regarding JE and animals

- NSW Department of Primary Industries webpage: Japanese encephalitis information for vets – available at <https://www.dpi.nsw.gov.au/biosecurity/animal/info-vets/japanese-encephalitis>
- NSW Department of Primary Industries webpage: Japanese encephalitis - Horses – available at <https://www.dpi.nsw.gov.au/animals-and-livestock/horses/health-and-disease/japanese-encephalitis-in-horses>
- Farm Biosecurity webpage: Controlling mosquito around piggeries – available at: <https://www.farmbiosecurity.com.au/livestock/pigs/controlling-mosquitoes-around-piggeries/>

Additional information regarding protecting people from JE infection

Please go to NSW Health webpages:

- Public health alert – mosquito warning webpage: available at https://www.health.nsw.gov.au/news/Pages/20220226_02.aspx
- Mosquitoes are a health hazard – Communicable diseases factsheet: available at <https://www.health.nsw.gov.au/Infectious/factsheets/Factsheets/mosquitoes-health-hazard.pdf>
- Mosquito bite avoidance factsheet: available at <https://www.health.nsw.gov.au/environment/factsheets/Documents/mosquito-bite-avoidance.pdf>

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