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Motivation for Vaccination of horses South Africa to WNV

Dear horse owners

I've been request to inform you that 49 horses (8%) of horses with neurological signs tested positive for WNV at ZARV in 2017. There has been a significant decrease in the amount of West Nile virus positive cases detected by the CVZ when comparing 2017 to 2018, and it is proposed to be mostly due to increased public awareness due to large awareness campaigns causing increased vaccination against West Nile disease in South Africa, as other arboviruses case numbers in 2018 did not see a similar decline. During 2017 the largest outbreak of WNV over a period of 10 years occurred in horses likely due to the high rainfall following the dry year of 2016. None of the clinical West Nile positive cases detected by CVZ in 2017 had previously been vaccinated against West Nile but owners reported increased vaccination of their horses / yards after diagnosis.

West Nile virus is a zoonotic, neurological mosquito-borne viral disease affecting animals and humans, specifically birds, horses and human. The disease caused ranges from inapparent infection, mild febrile disease to meningitis, encephalitis and death. Symptoms include fever, ataxia, weakness, paralysis, muscle fasciculation and cranial nerve deficits. Although only 20% of horses with WNV infection will develop WNV disease, up to 90% of these will have neurological signs and up to 30% will die. This statistics were collected over a period of 10 years at the ZARV. Please see a the publication attached (Venter et al 2017).

Vaccination is the most efficient prevention strategy and reduces the frequency of disease as well as the disease severity in horses that become infected with West Nile virus. There are two vaccines against West Nile virus available in South Africa, Zoetis Duvaxyn and Boehringer-Ingelheim / Merial West Nile Proteq, and it is advised that the vaccine be administered in spring to early summer before the rainy season. In the first year a booster should be given 3 weeks after the first vaccination, however after this annual vaccination with either vaccine between September and December is sufficient. Since these are dead (Zoeites) or recombinant, subunit vaccines (Merial) there is no risk for WNV related vaccine associated disease or spreading to vectors. Horses are dead end hosts and cannot transmit the virus to mosquitoes or humans. A vaccine trial done by ZARV showed that the strains from South Africa which cluster with the genetic lineage 2 cross protects completely with lineage 1 which is included in the vaccine. Horses have antibodies for approximately 12 months following vaccination with the dead vaccine so annual vaccination before the vector season is sufficient for protecting horses to WNV.

West Nile neurological disease in horses is considered a controlled and notifiable animal disease by the OIE although it is not a controlled or notifiable disease according to the animal disease act of 1984 (in terms of the Animal disease act, 1984

(Act No 35 of 1984) in South Africa due to its endemic status. Thus, it is recommended that horses in South Africa be vaccinated against West Nile virus, as well as other preventative measures be taken against possible mosquito exposure such as mosquito repellents containing DEET, reduction of mosquito breeding sites around stables and spraying of the inside of stables with pyrethroids or DEET and covering the doors with shade cloth. Unfortunately, there are currently no vaccines available against other arthropod vector borne causes of neurological disease in horses such as Middelburg virus, Shunivirus and Equine encephalosis.

Kind regards

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