dependent on temperature with no incubation possible at temperatures lower than 14°C, and generally a 2 week period of 27°C+ daily temperatures are required for successful within vector incubation. The kennels are in a very sparsely populated area in the mountain in Knysna further decreasing the risk of transmission.

Control Measures implemented

Based on the unlikely presence of mosquitoes harbouring microfilaria the kennel owners where the dog boarded were asked to apply mosquito control using residual action pyrethroid sprays inside the property. Adult mosquitoes have a short life span of up to a few weeks so this control will thus continue until about the middle of Nov 2012. Of the two contact dogs on the owners property in Knysna, one will be going onto prophylactic heartworm treatment and the other has since been exported to the USA, which is heartworm endemic.

Comments

While Heartworm is an exotic disease in South Africa it has been diagnosed in Mozambique along with another filarid which would be a differential diagnosis for the presence of microfilaria in a blood smear, *Dipetalonema reconditum*.

We thanks and commend the private vet (Dr Mark Shortreed from Knysna Veterinary Clinic) who identified the presence of microfilaria on initial blood smear and who had the foresight to confirm his suspicions, particularly since this is an exotic disease in RSA. We are also grateful to Dr Schwan from the veterinary faculty at Onderstepoort for assisting the State Vet in her investigation.

References

Current Canine Guidelines for the Diagnosis, Prevention, and Management of Heartworm (*Dirofilaria immitis*) Infection in Dogs (revised January, 2012) Available online at: http://www.heartwormsociety.org/veterinary-resources/canine-guidelines.html

Schwan, E. V. & Durand, D. T., 2002, 'Canine filariosis caused by Dirofilaria immitis in Mozambique: a small survey based on the identification of microfilariae', J.S.Afr.Vet.Assoc. 73(3), 124-126.

British Virgin Islands - Wikipedia

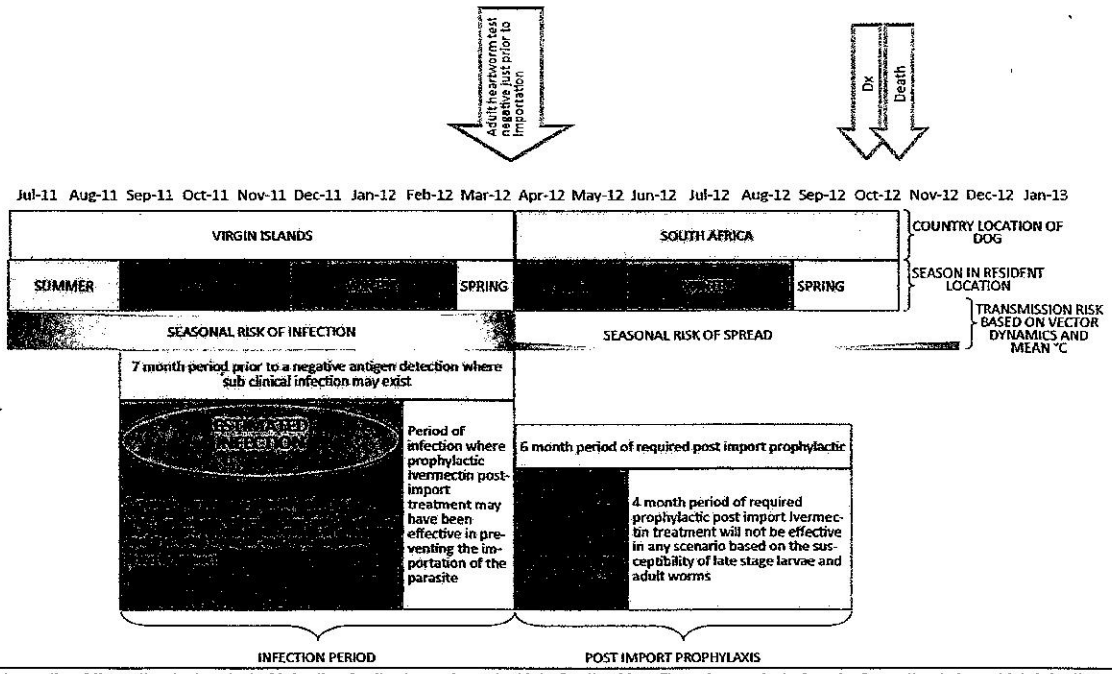

Figure 2: A schematic of the estimated period of infection for the boxer imported into South Africa. There is a period of up to 7 months during which infection occurred but would not have been identified during the pre-import testing into South Africa. The post import prophylaxis treatment protocol in place would only have been effective if the dog had been infected in the 2 months prior to being imported (bearing in mind the owners did not follow the protocol to its end). This leaves a 5 month period of potential infection which would not be picked up on testing and which would not be cleared using the standard protocol of post import prophylaxis. The seasonal risk profiles based on the mosquito vector dynamics and average temperature is shown. The Virgin Islands are below the 30° North Latitude and have temperature ranges suitable for infection of heartworm throughout their year. South Africa's southern coast does not have the same range and this limits the potential for spread dramatically because of the requirements of the temperature dependant extrinsic incubation in the vector. Also note that the standard import protocol, even if followed in full, for dogs from such regions has a 5 month risk period where infection can occur and be imported in South Africa without detection or post import clearance of infection.