Factors associated with Amblyomma variegatum presence in farms in Nevis and determination of high risks TBT areas

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Tropical Bont Tick (TBT), Amblyomma variegatum, is an invasive tick species of ruminants present in 10 Caribbean islands. TBT and the associated disease dermatophilosis, have been a challenge to livestock development in Nevis, Northern West Indies, for the past 30 years. After the end of a regional eradication program, active surveillance and control was conducted by veterinary services between 2007 and 2009. However, prevalence of dermatophilosis increased with some areas more infested, highlighting the need to determine the factors associated with TBT presence on farms. A case-control study was conducted to identify (1) the risk factors associated with the occurrence of the TBT on Nevis; and (2) the areas at high risk of tick persistence. Cases were selected as farms with clinical signs consistent with dermatophilosis and confirmed to have TBT present between 2007-2009. Control farms, without evidence of TBT presence or dermatophilosis cases during same period, were selected from a regularly maintained list of all active farms on the island, and matched to the cases based on parish. A questionnaire was administered to all cases and controls, which collected information on control practices, awareness level to ticks issues, etc. Univariable and multivariable logistic regression performed to explore the relationship between measured variables and the presence of TBT. Risk factors related to TBT include farmer attitudes toward TBT control and species hold on the farms. After many years of unsuccessfully employing various strategies for the control and eradication for TBT and dermatophilosis, the Veterinary Authority in Nevis anticipate using the results of this study as the scientific foundation for a more sustainable, targeted approach to the control of this pest.