

ABSTRACT OF THESIS

TITLE :- Studies on the Life-cycle and Seasonal Incidence of Boophilus microplus (Canestrini, 1888) in Trinidad and Tobago.

The present investigation includes a study of the life-cycle of B. microplus; the longevity of the free-living larval stage under field conditions; the incidence of the tick in Trinidad and Tobago in relation to stocking rates and breeds of cattle; the seasonal incidence of B. microplus in two climatically similar locations in Trinidad, with different vegetative cover; the effects of flooding on the eggs; larvae and adult female of B. microplus; and the acaricidal resistance of two indigenous tick populations.

The development of the non-parasitic stages was completed in 26-28 days at 24-32°C and 80-100% RH in the laboratory. The duration of the parasitic stages on Holstein x Friesian crossbred cattle was 19-26 days, and the entire reproductive cycle was completed in 44-58 days.

High tick populations were obtained at sites where Holstein cattle predominated. Tick populations also varied with stocking rates, vegetative cover, mat formation in pastures, and animal husbandry methods. Tick activity was highest during the dry season from January to June of each year.

Observations on the effects of flooding on the developmental stages of B. microplus indicated that the engorged females were the most vulnerable stage. They died after being submerged in water for 72 hours. Significant reductions occurred in the number of eggs oviposited by females submerged for over 24 hours, and the viability of eggs from females submerged for over 48 hours. The combined effect of high temperatures and flooding in the wet season, brought about significant reductions in larvae population in the field during June to December of each year.

Belmark (pyrethroid) and carbamult (carbamate) were the most effective of the 15 acaricides assayed. Although there was an apparent build up of acaricidal resistance in tick populations where chemical control was practised, ticks were still susceptible to the acaricides used so far.

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