"EFFECTS OF INSECTICIDE TREATED STABLE NETS ON *GLOSSINA* (*GLOSSINADAE*), TRYPANOSOMIASIS AND OTHER DIPTERANS"

BY

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This thesis is my original work and has not been presented for a degree in any other University.

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ABSTRACT

A field study was conducted to assess the protection conferred to zero-grazed animals against tsetse and trypanosomiasis by surrounding a zero-grazing unit with a polyethylene net. The units were subjected to various treatments and their effect on *Glossina,* other biting and non-biting flies and, trypanosomiasis investigated over a period of six months.

When set around a zero-graze unit at a height of 1.5m, an untreated net reduced prevalence rate of trypanosomiasis from 38% to 23.9% in the study area. In the high tsetse challenge area, the goats in the free range homestead and that from confined but without net zero-graze unit resulted in tyrpanosomisis infection rates of 38% and 37% while both insecticide treated and netted zero-graze units had the infections decrease to 14% and 11% respectively.

The 1% deltamethrin treated net caused significant reduction in tsetse density. This treatment yielded results that showed very high statistical significance at $p<0.05$ *(p value = 0.001)* for tsetse flies and also Tabanus species at $p<0.05$ *(value=0.021).* The 1% deltamethrin insecticide reduced the disease rate further from 23.9% in the study area. Similarly, the disease risk dropped on subsequent post treatment to nil from 17% after 30 days within 1% deltamethrin treated homestead, while increasing to 33.3% at 180 post treatment days for the low tsetse challenge level and 50% within the high challenge for both free-range and confined homestead without net.

This result suggests that, the net could confer protection to the zero-grazed goats effectively at low and medium tsetse challenge levels. However, treating the net with a lethal concentration of insecticide would enhance the level of protection the net confers to goats in the high tsetse challenge area.