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TICK CONTROL IN TSWANA, SIMMENTAL AND BRAHMAN CATTLE BY MEANS OF NEEM SEED EXTRACTS (*AZADIRACHTA INDICA*)

by

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Statement of originality

The work contained in this Research project was completed by the author at the University of Pretoria between November 1998 and October 2000. It is original work except were due reference is made and neither has been nor will be submitted for the award of a degree at any other university.

Signed _____

Students signature

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Abstract

Matayo David (Dr)

TICK CONTROL IN TSWANA, BRAHMAN AND SIMMENTAL BY MEANS OF NEEM SEED EXTRACTS

Supervisor: Dr. EC Webb

A total of 114 animals (57 bulls and 57 cows) of Tswana, Brahman and Simmental cattle were used for the three trials (Trial 1, 2 and 3). All animals were 15 months old and above. In the first trial a total of 9 animals were spread on the perennial area, ear, dewlap, udder, scrotum, and sternal area with either 5% (W/V) water extract of Neem Seed Kernel NSK at a rate of 5g/kg body weight, some 9 animals were sprayed with tap water (control group).

During the 2nd trial a total of 30 animals were spread with.2% (W/V) ethanolic neem seed extract (NSKE) 2% (W/V) ethanol extract of neem seed oil at a rate of 5g/Kg body weight some 30 animals were similarly sprayed with tap water as control group. During the 1st and the 2nd trial an experimental and control animals were kept in separate partitions of the shelter, but grazed together in the area which was heavily infested with adults and immature stages of ticks. In the 3rd trial a total of 36 animals were artificially infested with tick, 18 cattle were spread with 3% (W/V) ethanolic Neem Seed Kernel (NSKE) at the rate of 5g/kg body weight. Another 18 animals were spread with tap water as control group, there was no contact between animals although were kept in the same environment. The tick index of each animal for all three trials was determined weekly for 14 months consecutively.

Results showed that mean tick population densities were significantly lower in the experimental than control animals. Indigenous Tswana cattle harboured significantly fewer ticks during periods of peak tick abundance than either Brahman or Simmental cattle. Fewer

abscesses due to tick bites were observed in Tswana than the other two breeds, and a large percentage of Tswana cattle showed a high tick resistance. The results suggest a high degree of natural immunity in indigenous Tswana cattle.

It was concluded that NSKE extract was potentially useful in controlling ticks on livestock. Further research is required to study the active ingredients in NSKE as well as the pharmacological action on ticks. It is recommended that NSKE should be considered for inclusion in the management programmes to control ectoparasites on livestock.

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