EFFICACY OF FLUAZURON AND FLUMETHRIN COMBINATION POUR-ON AGAINST A RESISTANT FIELD STRAIN OF RHIPICEPHALUS (BOOPHILUS) SPP. ON A COMMERCIAL CATTLE FARM IN SOUTH AFRICA

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Introduction: Rhipicephalus (Boophilus) spp. are one host ticks with a 21 day life cycle. In South Africa they are well established in the warm, moist regions along the southern and eastern coasts and adjacent interior, as well as in the drier northern Highveld. This genus transmits Babesia bovis, B. bigemina, Anaplasma marginale and A. centrale parasites to bovines with resultant economic losses due to poor production, morbidity and mortality. Tick resistance to synthetic pyrethroid, organophosphate and amidine acaricides has been detected in various areas around the country using the Shaw Larval Packet Test method.

Objective: To confirm the field efficacy of a fluazuron 2.5%/ flumethrin 1% combination pour-on against a resistant strain of Rhipicephalus (Boophilus) spp. and to monitor efficacy via Shaw Larval Packet Testing.

Methods: Ten sentinel adult bovines were randomly selected on a commercial cattle farm in Grahamstown, South Africa. Samples of at least 50 engorged female Rhipicephalus (Boophilus) spp. were collected from their predilection sites at different times between May 2007 and April 2010. Ticks were collected prior to each application of a fluazuron 2.5%/ flumethrin 1% combination pour-on dip on the animals and were transported in plastic bottles with perforated lids containing tissue paper to independent laboratory. Results of the Shaw Larval Packet Tests over the period were compared.

Results: The fluazuron 2.5%/ flumethrin 1% combination pour-on controlled acaricide-resistant Rhipicephalus (Boophilus) spp. (>90% efficacy) as well as multi-host ticks on the treated bovines. The Shaw Larval Packet Test results showed an improved efficacy of amitraz (250 ppm) from 23% to 74%, cypermethrin (150 ppm) from 0.7% to 7.3% and chlorfenvinphos (500 ppm) from 10.9% to 14.1% over the study period.

Conclusion: A combination of fluazuron with flumethrin controls acaricide-resistant Rhipicephalus (Boophilus) spp. tick strains and may assist in improving their susceptibility profile, ultimately reversing the tolerance trend. The useful life span of existing single active acaricides may be extended by use of the combination.