ACARICIDAL EFFECTIVENESS OF DELTAMETHRIN (BUTOX) AND MALATHION ON BOVINES

S. K. GUPTA, M. B CHEHRA and N. S. RUPRAH

Department of Veterinary Parasitology,
Haryana Agricultural University, Hisar - 125 004.

Of the several measures available for the control of ticks the use of acaricides is the most widely practised and practical approach. The emergence of resistance necessitates the development of new acaricides on a continuing basis. The present report deals with the acaricidal effect of a new synthetic pyrethroid Deltamethrin (Butox)* comparative to Malathion on bovines.

The trial was carried out on cross-bred calves and buffalo calves having natural infestations with *Hyalomma anatolicum anatolicum* The infestation comprised predominantly of adult ticks with only a few nymphs on some of the animals. Nine calves of either species showing a fair degree of homogeneity regarding the degree of tick infestation were randomly split into three equal groups. Group A calves were treated with 25 ppm dilution of ‘Butox’ (25 g of Deltamethrin in 1000 litres of water or a concentration of 0.0025% active ingredient). About 3 litres of the freshly diluted acaricide was applied per animal by pressure spray. Group B animals received treatment with Malathion EC as 1% solution. Group C (control) were treated with tap water. The animals were observed daily and visual counts of attached ticks were made at different intervals to assess the effect of the respective treatments, till reinfection with fresh ticks started.

Five of the buffalo calves were additionally suffering from sarcoptic mange and were utilized to see the effect of acaricidal treatment. These were distributed, two each into the two treatment groups and one in the control group.

From the data summarized in the Table, it is clear that both the compounds were effective in minimizing the infestation within one day of treatment and completely eliminating it subsequently. In this respect, the test compound ‘Butox’ was more rapid and no live ticks were seen on the treated animals after day one post treatment. Acaricidal treatment of buffalo calves infested with sarcoptic mange indicated that ‘Butox’ again was the more efficient agent in controlling the mites as well as reducing the lesions during the observation period following single treatment.

*M/j.s. Roussel Uclair, Agro-Veterinary division C/o. Roussel Pharmaceuticals (India) Ltd., Bombay.
TABLE
Acaricidal effectiveness of 'Butox' and Malathion against
*Hyalomma anatolicum anatolicum* on bovines

<table>
<thead>
<tr>
<th>Days after treatment (3 calves and 3 buffalo calves in each group)</th>
<th>Group A (‘Butox’ 25 ppm)</th>
<th>Group B (Malathion 1%)</th>
<th>Group C (Control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>178</td>
<td>175</td>
<td>170</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>7</td>
<td>173</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>2</td>
<td>172</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>168</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>4</td>
<td>173</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
<td>18</td>
<td>176</td>
</tr>
</tbody>
</table>

Notwithstanding the vector significance of *H. anatolicum*, acaricidal trials against this tick species are relatively infrequent in literature, whereas quite a few reports of both *in vitro* (Miranpuri *et al.* 1981) and field trials (Khan, 1980; Sinha *et al.* 1981) have concerned themselves with *Boophilus microplus*. Malathion, due to its established acaricidal effectiveness, is often taken as a standard for comparison for a test compound.

‘Butox’ represents the recently introduced class of synthetic pyrethroids which are regarded as the fourth (the latest) generation of insecticides. These compounds are characterized by their powerful activity, good safety and satisfactory degradability. Recently, another compound of this class viz. Cypermethrin was found promising against cattle tick, *B. microplus* and dog tick, *Rhipicephalus sanguineus* (Visvanathan *et al.* 1983). From the results of the present trials it can be concluded that ‘Butox’ compares favourably with Malathion regarding acaricidal effectiveness in tick infestation and mange in bovines because of its rapid action.

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REFERENCES