MEDICAL AND VETERINARY

Insecticide and Acaricide Test 5:227

(continued Hall, English, Vandepopuliere, Daisy, Lyons, Foehse and Berkebile)

Weeks Acaricide treatment - Test 4*
post treatment Untreated control Tetrachlorvinphos Carbaryl
Pretreatment 1.20 a 1.49 a 1.25 a 1.89 a 0.13 b 0.22 b
1 1.39 a 1.89 a 0.22 b 0.15 b 0.75 a 0.18 b 0.19 b
3 0.73 a 0.24 b 0.15 b 0.14 b 0.35 a 0.22 a 0.30 a
5 0.75 a 0.18 b 0.19 b 0.15 b 0.35 a 0.22 a 0.30 a
7 0.37 a 0.22 a 0.30 a 0.15 b 0.35 a 0.22 a 0.30 a
*Averages within rows not followed by a common letter are significantly different at the 0.05 level by the ANOVA and LSR tests.

Weeks Acaricide treatment - Test 5*
posttreatment Untreated control Carbaryl Coumaphos Tetrachlorvinphos
Pretreatment 5.20 a 4.50 a 4.48 a 4.53 a 5.30 a 4.80 a 4.60 a
1/2 2.65 a 0.18 b 1.27 c 0.12 b 2.20 a 0.60 a 2.00 a
1 3.17 a 0.17 b 1.65 c 0.30 b 3.00 a 0.60 a 2.80 a
2 3.12 a 0.63 b 1.85 c 0.35 b 3.00 a 0.60 a 2.80 a
4 3.28 a 0.90 b 2.37 c 0.35 b 4.00 a 1.20 a 3.80 a
5 3.85 a 0.85 b 3.00 c 1.23 b 4.00 a 1.20 a 3.80 a
6 3.92 a 1.58 b 3.10 c 1.43 b 4.00 a 1.20 a 3.80 a
7 4.42 a 2.28 b 3.97 a 2.45 b 4.50 a 1.80 a 4.30 a
8 4.27 a 2.97 b 4.43 a 4.12 a 5.00 a 2.40 a 4.80 a
*Averages within rows not followed by a common letter are significantly different at the 0.05 level by the ANOVA and LSR tests.

GUINEA PIG: Cavia porcellus L. L. M. Hunt and B. N. Gilbert (411)

Lone star tick; Amblyomma americanum (L.) U.S. Livestock Insects Lab.
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GUINEA PIG-AMBLYOMMA AMERICANUM ANIMAL SYSTEMIC INSECTICIDE TEST, 1979: The procedure is as follows: Hair on guinea pigs is clipped around the midsection. Then 2 capsule cages each containing 12 starved nymphal lone star ticks are attached with contact cement and tape to each animal. Those guinea pigs receiving the candidate compound are treated 24 h later. An untreated pig serves as the control and provides data for Abbott's formula. Doses of the active ingredient depend on guinea pig weight, compound structure, LD50, and other considerations though the maximum is 30 mg/kg. This amount is formulated in diethyl succinate and administered subcutaneously on 3 alternate days, a volume of 500 ul/injection. About 4-6 days after the 1st treatment, dead ticks in the cages are detached and counted, and/or replete ticks were removed from the capsules and held to observe mortality and nymphal molt. Effectiveness is determined by the percentage of ticks that fail to ecdyse (including dead nymphs that detach without engorging).

Of the 11 compounds tested, 5 showed some systemic effect, but only 1, Merck MK 932, was completely effective.

Treatment Results

<table>
<thead>
<tr>
<th>Common or Company Name</th>
<th>mg/kg</th>
<th>% control*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Am. Cyan AC 217,300</td>
<td>20.0</td>
<td>0</td>
</tr>
<tr>
<td>Bayvet SIR-8514</td>
<td>20.0</td>
<td>0</td>
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<tr>
<td>Lilly L-28</td>
<td>0.5</td>
<td>0</td>
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<tr>
<td>Merck MK-990</td>
<td>20.0</td>
<td>21</td>
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<tr>
<td>Merck MK-932</td>
<td>6.0</td>
<td>100</td>
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<tr>
<td>Roussel RU-22974</td>
<td>30.0</td>
<td>21</td>
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<tr>
<td>Shell SD-55618</td>
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<td>0</td>
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<tr>
<td>Stauffer MV-678</td>
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<tr>
<td>Stauffer R-28150</td>
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<tr>
<td>Stauffer R-29534</td>
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<td>21</td>
</tr>
<tr>
<td>Vetem-Cidial L-561</td>
<td>20.0</td>
<td>7</td>
</tr>
</tbody>
</table>

*Percent control corrected by Abbott's formula.

HORSE: Equus caballus

Stable fly; Stomoxys calcitrans (L.) F. W. Knapp (412)

Face fly; Musca autumnalis DeGeer

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EVALUATION OF ATROBAN WIPES AGAINST STABLE FLY AND FACE FLY ON HORSES, 1979: Two ready-to-use 1 and 2% Atroban oil formulations and a 1% water emulsion made from a 42.5% EC formulation were wiped on horses at 2 and 4 oz/horse. Two horses were used for each treatment and each horse averaged 250 kg. Laboratory reared face flies and stable flies and wild stable flies, when available, were confined, 20 per species, to screened mason jar lids. These were provided sugar water on a cotton pad and 24 hours later exposed to the treated horses for 15 minutes, except for 5 minutes for the last exposure during the test. This was accomplished by placing the lids containing the flies on a 4 x 4 inch galvanized metal and sliding this under an elastic girth fitted around the forward mid-section of the horse. The metal plate was then removed to expose the flies and replaced to recapture the flies. These flies were then returned to the laboratory and the flies containing the flies placed on clean 3 x 5 inch index cards. Fresh blood, placed on cotton pads, was provided as food. Mortality counts were taken at 2 hours after exposure.

The 2% oil treatment, at both 2 and 4 oz per horse, showed the longest residual activity against both fly species, whereas 2 oz of the 1% oil gave the shortest residual activity. Except for the 28- and 42-day exposure tests, stable flies were knocked down during the 15-minute exposure period whereas the face flies were knocked down within the hour after exposure. Wild stable flies, exposed to the treatments when they could be captured, day 3, 14, 28 and 42, were all knocked down within 30 minutes and were all dead at 24 hours. Cold weather prevented further testing.