PINEAPPLE: *Ananas comosus* (L.) Merr.

**Bigheaded Ant: Pheidole megacephala** (F.)

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**CONTROL TEST, 1987:** In Experiment 1, treatments of Lorsban 4 EC, Lorsban 15 G, and Asana 1.9 EC were tested on plowed pineapple fields on Lanai Island, Hawaii, for efficacy against ants with pineapple foliage and mulch removed. Pretreatment ant populations were monitored by using 6 wooden tongue depressors coated with a 50:50 mixture of peanut butter and soybean oil placed near the center of each plot. Treatments were applied to 0.5-acre plots when the ant populations had stabilized after the plowing stress. Each treatment was replicated 3 times. Ant counts were indexed, and 0, 1, 2, 3, and 4 represented 0, 1–10, 11–25, 26–75, and >75 ants, respectively. In Experiment 2, two corn cob grit baits were tested for efficacy against bigheaded ants on 4-acre plots of ratoon pineapple. Ant densities were monitored using 6 redwood stakes placed near each plot center baited with a 50:50 mixture of peanut butter and soybean oil. Ant counts were indexed, and 0, 1, 2, 3, 4, and 5 represented 0, 1–25, 26–100, 101–300, 301–500, and >500 ants/stake respectively. Treatments of Logic (1% AI) and Amdro (0.88% AI) were broadcast at a rate of 1.5 lb/acre with a turbine blower. Each treatment was replicated 3 times.

None of the treatments in Experiment 1 had any significant effect on ant populations. In Experiment 2, Amdro eliminated ants in all plots within 1 wk. No ants could be found near plot centers until 16 wk after treatment. Ant presence in plot centers after 16 wk was due to immigration from the heavily infested border areas. Logic caused a significant drop in ant densities 8 wk after treatment. Ants were never eliminated from these plots but remained at levels significantly below control plot densities until 20 wk after treatment.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate (lb (AI)/acre)</th>
<th>Pretreatment</th>
<th>2 wk</th>
<th>4 wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorsban 4 EC</td>
<td>3.0</td>
<td>4.0</td>
<td>2.9a</td>
<td>3.9a</td>
</tr>
<tr>
<td>Lorsban 15 G</td>
<td>3.0</td>
<td>3.9a</td>
<td>3.0a</td>
<td>3.5a</td>
</tr>
<tr>
<td>Asana 1.9 EC</td>
<td>0.1</td>
<td>3.0a</td>
<td>4.0a</td>
<td>4.0a</td>
</tr>
<tr>
<td>Control</td>
<td>—</td>
<td>4.0a</td>
<td>4.0a</td>
<td>4.0a</td>
</tr>
</tbody>
</table>

Means followed by same letter in each column are not significantly different (P < 0.05; DMRT).

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate (lb (AI)/acre)</th>
<th>Pretreatment</th>
<th>1 wk</th>
<th>4 wk</th>
<th>8 wk</th>
<th>12 wk</th>
<th>16 wk</th>
<th>20 wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic</td>
<td>0.015</td>
<td>3.2a</td>
<td>2.8a</td>
<td>2.3a</td>
<td>1.2b</td>
<td>1.3b</td>
<td>1.5b</td>
<td>2.6a</td>
</tr>
<tr>
<td>Amdro</td>
<td>0.013</td>
<td>3.1a</td>
<td>0.6</td>
<td>0.6</td>
<td>0c</td>
<td>0c</td>
<td>0.6b</td>
<td>0.7b</td>
</tr>
<tr>
<td>Control</td>
<td>—</td>
<td>3.5a</td>
<td>3.7a</td>
<td>3.7a</td>
<td>3.8a</td>
<td>3.8a</td>
<td>3.6a</td>
<td></td>
</tr>
</tbody>
</table>

Means followed by same letter in each column are not significantly different (P < 0.05; DMRT).

**CONTROL TEST, 1986:** The efficacy of 4 emulsifiable concentrate and 4 bait formulated insecticides was tested against bigheaded ants in 0.2-ha plots of second ratoon pineapple on Lanai Island, Hawaii. The emulsifiable concentrates were applied diluted in 300 gal water/acre by boom sprayer. The bait formulations were applied at 1.5 lb bait/acre with a hand-held whirlbird fertilizer applicator. Pretreatment ant density counts were made 6 Oct using 6 stakes baited with peanut butter and soybean oil (50:50 mixture) placed near the center of each. Treatments were applied 14 Oct. Ant counts (ants/stake) were indexed for each stake, and 0, 1, 2, 3, 4, and 5 were equal to 0, 1–25, 26–100, 101–300, 301–500, and >500 ants/stake respectively.

Spray treatments had no significant effect on ant densities. Amdro bait significantly reduced ant densities within 1 wk. Ant densities in Amdro plots began to increase at 8 wk after treatment due to immigration from field edges. Both Logic formulations caused a significant reduction in ant densities after 12 wk; however, ants in plots treated with Logic cake recovered rapidly. Prodrone had no significant effect on ant densities.
beetle, where Sevin XLR and Asana were not effective. No phytotoxicity was noted in treated areas.

begun and the number of dead insects was recorded 24 h after exposure.

container. The number of dead insects was recorded 24 h after exposure to the treated foliage. At 3 DAT a Japanese beetle bioassay of treated foliage was

readings of the number of live Japanese beetles in each plot were taken immediately before insecticides were applied; at 4 h after treatment; and at 2, 3, 

numbers were on the increase in all treatments. The Japanese beetle bioassay at 3 DAT clearly demonstrated differences between untreated and treated

MO 70616 1.9 EC 0.05 3.3a 3.8a 3.8a 3.8a
MO 70616 1.9 EC 0.1 3.6a 3.4a 3.4a 3.4a
Lindane 4 EC 2.0 3.2a 3.4b — — —
Mocap 6 EC 3.0 3.7a 4.6a — — —
Lorsban 4 EC 1.5 3.0a 2.7b 3.0a — — —
Lorsban 4 EC 3.0 3.3a 2.3b 2.9a — — —
Logic grit bait 0.01 2.3a 2.5b 2.5b 1.8b 1.9b 1.7b
Logic cake bait 0.01 3.1a 3.4a 3.1a 3.2a 3.7a 3.1a
Amdro bait 0.01 3.0a 3.0b 3.0a 2.8a 3.2a 3.4a 2.7a
Control — 3.0a 3.0b 3.0a 2.8a 3.2a 3.4a 2.7a
Means followed by same letter in each column are not significantly different (P < 0.05; DMRT).

RASPBERRY (RED): Rubus idaeus L. 'Heritage'

Japanese beetle; Popillia japonica Newman

Tarnished plant bug; Lygus lineolaris (Palisot de Beauvois)

Meadow spittlebug; Philaenus spumarius (L.)

Strawberry sap beetle; Stelidota geminata (Say)

FIELD AND BIOASSAY EVALUATIONS, 1988: Four insecticides were evaluated for efficacy against the adult Japanese beetle, tarnished plant bug,

Meadow spittlebug; Philaenus spumarius (L.)

Strawberry sap beetle; Stelidota geminata (Say)

Means followed by same letter in the same column are not significantly different (P = 0.05; DMRT).

Treatment Rate lb (AI)/acre Pretreatment 4 hr posttreatment Day 1 Day 2 Day 3 Day 6 Day 3
Lorsban 90 W 1.0 48 11 0 1 2 7 6.6b
Lorsban 90 W 1.5 105 12 3 1 7 24 5.0b
Lorsban 50 W + Guthion 35 W 0.75 + 0.375 63 9 1 0 2 6 10.0c
Sevin XLR 2.0 112 4 1 0 0 2 9.3c
Guthion 35 W 0.75 36 3 0 0 0 8 10.0c
Asana 0.66 EC 0.05 60 6 2 0 0 5 9.3c
Control — 45 21 10 6 9 14 0.5a
Means followed by the same letter in the same column are not significantly different (P = 0.05; DMRT).

Treatment Rate lb (AI)/acre Pretreatment 1 wk 4 wk 8 wk 12 wk 16 wk 20 wk 7 Index
MO 70616 1.9 EC 0.05 3.3a 3.8a 3.8a 3.8a
MO 70616 1.9 EC 0.1 3.6a 3.4a 3.4a 3.4a
Lindane 4 EC 2.0 3.2a 3.4b — — —
Mocap 6 EC 3.0 3.7a 4.6a — — —
Lorsban 4 EC 1.5 3.0a 2.7b 3.0a — — —
Lorsban 4 EC 3.0 3.3a 2.3b 2.9a — — —
Logic grit bait 0.01 2.3a 2.5b 2.5b 1.8b 1.9b 1.7b
Logic cake bait 0.01 3.1a 3.4a 3.1a 3.2a 3.7a 3.1a
Amdro bait 0.01 3.0a 3.0b 3.0a 2.8a 3.2a 3.4a 2.7a
Control — 3.0a 3.0b 3.0a 2.8a 3.2a 3.4a 2.7a
Means followed by the same letter in the same column are not significantly different (P < 0.05; DMRT).