

Evaluation of Insecticides and Oils For Jojoba Scirtothrips ewarti bailey Control

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Introduction

Scirtothrips ewarti bailey feeding on jojoba foliage can severely stunt jojoba growth and is thought to lessen available nodes for seed production the following year. In addition, some growers are of the opinion that this species, which can get inside small developing fruiting bodies early in the spring prior to pollination, may disrupt seed pollination and cause subsequent blank (empty) seeds. Prior to this study no data were available about Scirtothrips ewarti control in jojoba using insecticides or oils. This study was conducted to obtain data about Scirtothrips ewarti control in jojoba using such controls.

Procedure

A randomized complete block design was utilized in the study. Treatments were made the afternoon of March 24, 1989, and replicated four times. Each plot consisted of 25 ft. of row. Treatments consisted of two rates of a pyrethroid (Capture), two rates of a systemic insecticide (Dimethoate 2.67 EC), four citrus oils, and abamectin (a by-product of a soil fungus) used with and without Leaf Act 80A (a crop oil), and a water check. Treatments were applied with a backpack sprayer calibrated to deliver 13.2 GPA at 30 psi with a single T-Jet 8004 nozzle.

Samples were taken 1 and 7 days post treatment. Samples were taken by beating terminal foliage over a mesh screened 5 in x 7 1/2 inch x 1 inch deep black wooden box and counting the thrips. On the first sample date (March 25) 6 samples per plot were taken until a storm moved in and disrupted sampling. Eighteen samples (six per plot) were taken for all but the high rate of dimethoate (0.5) and valencia orange treatments, which consisted of 15 samples. Each plot had four samples taken (16/treatment) for the 7 day post treatment.

Results and Discussion

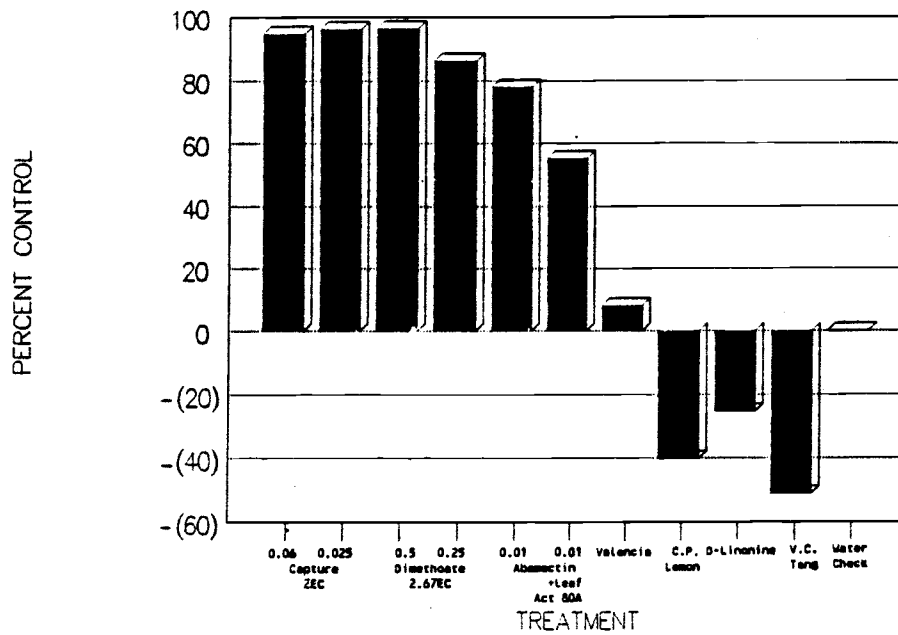
All treatments other than the citrus oils provided statistically significant control compared to the water check at seven days post treatment. At one days post treatment the Capture and Dimethoate treatments (both rates of both treatments) had less than 4 thrips per sample. The Agri-Mek treatments also had substantially fewer thrips per samples than the water check on both sample dates. The citrus oils did not provide control of Scirtothrips ewarti in this study. The citrus oils, although not providing direct control of the thrips, may perhaps be a management tool. Based on the data the thrips appear to be attracted to the oils and in the future this may be utilized for control. The oils differed in their attraction of thrips, although the differences were not statistically significant. The d-limonene and kinnow orange oil (noted as V. C. Tang in figures) treatments had 30% more thrips 7 days post treatment than the water only check. Lemon oil had 40% more thrips than the water check 1 day post treatment, the kinnow orange had 51% more thrips and d-limonene had 25.4% more thrips on the same sample date. Valencia orange oil treatments had fewer thrips than the water only check on both sample dates.

**CONTROL OF THRIPS ON JOJOBA ONE
AND SEVEN DAYS POST TREATMENT**

<u>Treatment</u>	<u>Rate (# ai/A)</u>	<u>Mean number of thrips per sample</u>		<u>Percent Control</u>	
		<u>1 day</u>	<u>7 days</u>	<u>1 day</u>	<u>7 days</u>
Agri-Mek 0.15 EC	0.01	6.3	10.5 ^a	78.0	75.6
Agri-Mek 0.15 EC + Leaf Act 80A	0.01 6 oz	12.9	12.2 ^a	55.1	71.7
Capture 2 EC	0.06	1.6	4.5 ^a	94.6	89.5
Capture 2 EC	0.025	1.1	12.3 ^a	96.2	71.4
Dimethoate 2.67 EC	0.25	3.9	10.3 ^a	86.3	76.2
Dimethoate 2.67 EC	0.5	1.0	6.5 ^a	96.5	84.9
D-Limonene	2 qts	36.2	55.9 ^b	-25.4	-30.1
Lemon Oil	2 qts	40.4	47.3 ^b	-40.3	-10.0
Kinnow Orange	2 qts	43.6	57.2 ^b	-51.1	-33.0
Valencia Orange	2 qts	26.5	38.4 ^b	8.2	10.6
Water Check	---	28.8	43.0 ^b	---	---

¹Means followed by the same letter are not statistically different at the $P \leq 0.05$ level (S-N-K test).

PERCENT CONTROL OF THRIPS ON JOJOBA ONE DAY POST TREATMENT



PERCENT CONTROL OF THRIPS ON JOJOBA SEVEN DAYS POST TREATMENT

