

## Section VII Mites and Sap-sucking Insects

### European Asparagus Aphid Control in Established Asparagus

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## Introduction

The objective of the study was to determine the effects of several insecticides on asparagus aphid, *Brachycorynella asparagi*. The location of the study site was in Sunnyside, Washington. All but two treatments were direct spray application to the asparagus fern. One treatment was applied by air.

## Materials and Methods

**Test site:** The trial was conducted on established asparagus in Sunnyside, Washington. The trial was rill irrigated. The ground applied treatments were located in the eastern portion of a 5 acre field. The treatment applied by air was located at the northern edge of the field. Approximately 600 feet separated the two treatment locations.

**Plot establishment:** Each plot was 6 ft (2 rows) by 20 feet. The trial had 16 treatments and was replicated 4 times. The trial was 5280 square feet or 12% of one acre.

A description of each treatment is as follows:

Brand Name	Common Name	Rate per/A
Ground treatments		
Untreated		
Fulfill+OS	pymetrozine	38.4g ai/A
Fulfill+OS	pymetrozine	57.6 g ai/
Fulfill+OS	pymetrozine	76.8 g ai/A
Actara+COC	thiamethoxam	1.5 oz./A
Actara+COC	thiamethoxam	3.0 oz/A
	triazimate	0.06 lb ai/A



	triazimate	0.125 lb ai/A
Pirimor	pirimicarb	0.45 lb ai/A
Lorsban	chlorpyrifos	1 lb ai/A
Dimethoate	dimethoate	8 oz/A
Di-syston	disulfoton	16 oz/A
Warrior	lamba-cyhalothrin	0.02 lb/A
Warrior	lamba-cyhalothrin	0.03 lb/A

#### Air treatments

Dimethoate	dimethoate	8 oz/A
Untreated		

COC = 1% v/v of Moract crop oil concentrate

OS = 0.25% v/v Silwet

**Treatment Date:** The application was August 24, 1999. All treatments were applied as direct sprays using a CO<sub>2</sub> backpack sprayer. The ground system was equipped with 8003 Teejet nozzles. Treatments were applied at 25 gallons per acre at 30 psi.

## Results and Discussion

**Ground treatments.** Aphid populations were relatively uniform and high in number at the beginning of the trial, with there being no significant difference between treatment populations for 14 of the 16 treatments. Between 7 and 14 days after application, aphid numbers declined to the point that none were present in most treatments, including the check. All treatments significantly decreased aphid populations below that of the ground application check. Treatments that provide a high level of control by the third day after application suggest products that could provide a high level of knock down control, these treatments were triazimate at the low rate, Pirimor, Lorsban, Dimethoate, Actara (low rate) and Warrior (high rate).

Treatments that provide a high level of control seven days after application were triazimate (low rate), dimethoate, Warrior (low rate), Warrior (high rate), Lorsban and Pirimor. By 14 days after application, most treatments including the check, had very few or no aphids. Due to the low number of aphids throughout most treatments, the trial was ended.

It is interesting that three days after application, 7 treatments performed better than the industry standard, Di-Syston, and at 7 days after application 4 treatments performed better. Fulfill was applied at three rates, none of which provided significant control at 3



**Table 1. European Asparagus Aphid Control Trial on Established Asparagus: 1999**

Treatment	Rate	1DBA	3DAA	7DAA	14DAA
Untreated		17 bc	39.3 a	15 ab	0 b
Fulfill	1.25 oz/A	23 abc	6 b	2.3 bc	2 b
Actara	1.5 oz/A	24 abc	0.3 b	2.3 bc	0 b
Actara	3 oz/A	25 abc	1.3 b	2 c	0 b
Triazimate	0.06 lb a/A	16 bc	0 b	0 c	0 b
Triazimate	0.125 lb a/A	17 bc	7 b	2.8 bc	0 b
Pirimor	0.45 lb a/A	26 abc	0 b	0.8 c	1 b
Fulfill	2.03 oz a/A	15 bc	14.5 b	19 a	23 a
Fulfill	2.7 oz a/A	10 bc	8.8 b	12 abc	0 b
Lorsban	1 lb a/A	7.3 c	0 b	0.5 c	0 b
Dimethoate	0.5 lb a/A	14 bc	0 b	0 c	0 b
Disyston	1 pt/A	12 bc	1.5 b	3.3 bc	1 b
Warrior	0.02 lb a/A	22 abc	3 b	0 c	1 b
Warrior	0.03 lb a/A	13 bc	0.3 b	0 c	1 b
Dimethoate by Air	8 oz/A	37 ab	1.5 b	0 c	0 b
Untreated by Air		46 a	12.5 b	13 abc	3 b

and 7 days after application. Level of control was erratic with the lowest rate providing the highest efficacy.

**Air Treatments.** Dimethoate applied by air provided a level of control that was equal to the industry standard applied by ground, by day 7 and 14 days were zero. Although not statistically different from the control, dimethoate did not reduce aphid populations numerically.

### **Conclusion.**

Due to the typical highly variable aphid populations throughout the treatments it was difficult to statistically separate the efficacy of different products. A number of products provide control of asparagus aphid equal to or better than the current industry standard.