

2003 Onion Insecticide Trials
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Two insecticide trials were conducted at the Western Colorado Research Center at Fruita to evaluate several classes of insecticide against onion thrips. The first trial evaluated methyl anthranilate, an insect feeding stimulant, with each insecticide. The second trial evaluated Lannate LV and Spinosad in combination with surfactants or methyl anthranilate.

Insecticide Trial I

Crop: Onions: ‘Teton’
Target insect: Onion thrips, *Thrips tabaci*
Application dates: June 30 2003, July 7, 2003
Sprayer: Hand held, CO₂ pressured, calibrated to apply 16 gal/A
Plot size: 15 ft x 3- 30" beds, with two seed rows per bed
Sampling: Five onions were chosen from the center of each plot, and thrips extracted in Berlese funnels for 24h. All thrips were separated by growth stage. Samples were taken on July 5 (5 days after treatment), and again on July 14 (14 days after initial treatment and 7 days after 2nd treatment).
Results: Treatments and results are presented in Table 1. There were no significant differences between treatments on the first sample date although thrips numbers in Lannate LV and Spintor treatments appear lower than other treatments. On the second sample date, Lannate LV performed better than any other insecticide, which is consistent with 2002 results. Lannate LV was the only insecticide to reduce thrips numbers compared to the untreated control on the second sample date. Methyl anthranilate did not significantly improve the performance of any insecticide.

Table 1. Results from Insecticide Trial I.

Treatment	Rate	Adult thrips 7/5	Immature thrips 7/5	Total thrips 7/5	Adult thrips 7/14	Immature thrips 7/14	Total thrips 7/14
Lannate LV	2 pt/A	5.0	45.2	50.2	5.2a	8.5a	13.8a
Lannate LV + MA ¹	2 pt/A + 2 pt/A	2.75	23.8	26.5	5.5ab	11.2ab	16.8ab
Mustang Max	4 fl oz/A	7.0	47.0	54.0	9.2abcd	72.8cd	82.0c
Mustang Max + MA	4 fl oz/A + 2 pt/A	3.2	60.8	64.0	9.0abcd	86.0d	95.0c
Knack	10 fl oz/A	7.2	56.5	63.8	10.5abcd	67.2cd	77.8c
Knack + MA	10 fl oz/A + 2 pt/A	5.0	39.2	44.2	12.2cd	30.2abc	42.5abc
Spintor	8 fl oz/A	5.2	25.2	30.5	6.0ab	65.0cd	71.0bc
Spintor + MA	8 fl oz/A + 2 pt/A	3.8	25.8	29.5	8.0abcd	30.8abc	38.8abc
Actara	4 oz/A	6.8	43.0	49.8	15.5d	75.2cd	90.8c
Actara + MA	4 oz/A + 2 pt/A	8.0	46.2	54.2	12.0bcd	81.5cd	93.5c
Untreated		9.8	74.8	84.5	7.2abc	44.5bcd	51.8abc
		ns	ns	ns	0.0897	0.0068	0.013

¹ MA - Methyl anthranilate is a food grade spray additive add to determine if it improves insecticide efficacy
Means within a column followed by the same letter are not significantly different (LSD $\alpha=0.05$).

Insecticide Trial II

Crop: Onions, ‘Teton’

Target insect: Onion thrips, *Thrips tabaci*

Application date: July 18, 2003

Sprayer: Hand held, CO₂ pressured, calibrated to apply 16 Gal/A

Plot size: 15 ft x 3-30" beds, with two seed rows per bed

Sampling: Thrips were counted in the field on five onions per plot. Onions in the middle bed of the three bed plots were counted. Thrips were visually separated into adult and immature classifications. Plots were sampled on July 22 (4 DAT), 23 (5 DAT), and 24 (6 DAT).

Table 2. Treatment rates in Insecticide Trial II

Lannate LV	2 Pt/A; 0.6 ln A.I./A
Spintor	10 Fl Oz/A; 0.156 lb A.I./A
Crop Oil	1% by volume
Activator 90 (NIS)	2 Pt/100 Gal
Methyl Anthranilate (MA)	1 Pt/A

Table 3. Results from Insecticide Trial II.

	Adult 4 DAT	Immature 4 DAT	Adult 5 DAT	Immature 5 DAT	Adult 6 DAT	Immature 6 DAT
Lannate LV + Crop oil	1.1	11.05	0.95 ab	18.25	1.9 bcd	19.75
Lannate LV + MA	0.45	10.3	0.45 ab	11.35	0.8 ab	9.95
Lannate LV + NIS	1.25	17.85	1.6 bc	20.75	1.25 abc	14.2
Lannate LV	1.8	15.4	1.5 bc	24	2.1 bc	19.85
Spintor + Crop oil	0.25	20.95	0.5 ab	19.7	0.6 a	11.1
Spintor + MA	0.35	12.55	0.2 a	15.55	0.95 abc	15.55
Spintor + NIS	0.9	11.6	0.8 ab	20.9	0.55 a	8.45
Spintor	1.45	21.35	1.1 abc	11.95	1.5 abcd	17.45
Untreated	1.35	27.95	2.25 c	22.05	2.55 d	16.6
P-Value	0.1972	0.1212	0.0436	0.4917	0.0140	0.4410

Results. Treatment rates are presented in Table 2. Sample results are displayed in Table 3. There were no differences among treatments at 4 DAT although immature thrips counts appeared lower in all treatments than in the untreated control. Several treatments reduced the number of adult onion thrips compared with the untreated control at 5 and 6 DAT. There was no significant increase in insecticide when combined with any spray additive. Untreated plants in areas away from the insecticide plot were

sampled on each sample date. It is interesting to note those plants had much higher OT counts than the untreated plants within the plot area. If the untreated field counts are compared with treated plots, it is apparent that both Lannate and Spinosad treatments were effective at reducing thrips numbers (Figure 1).

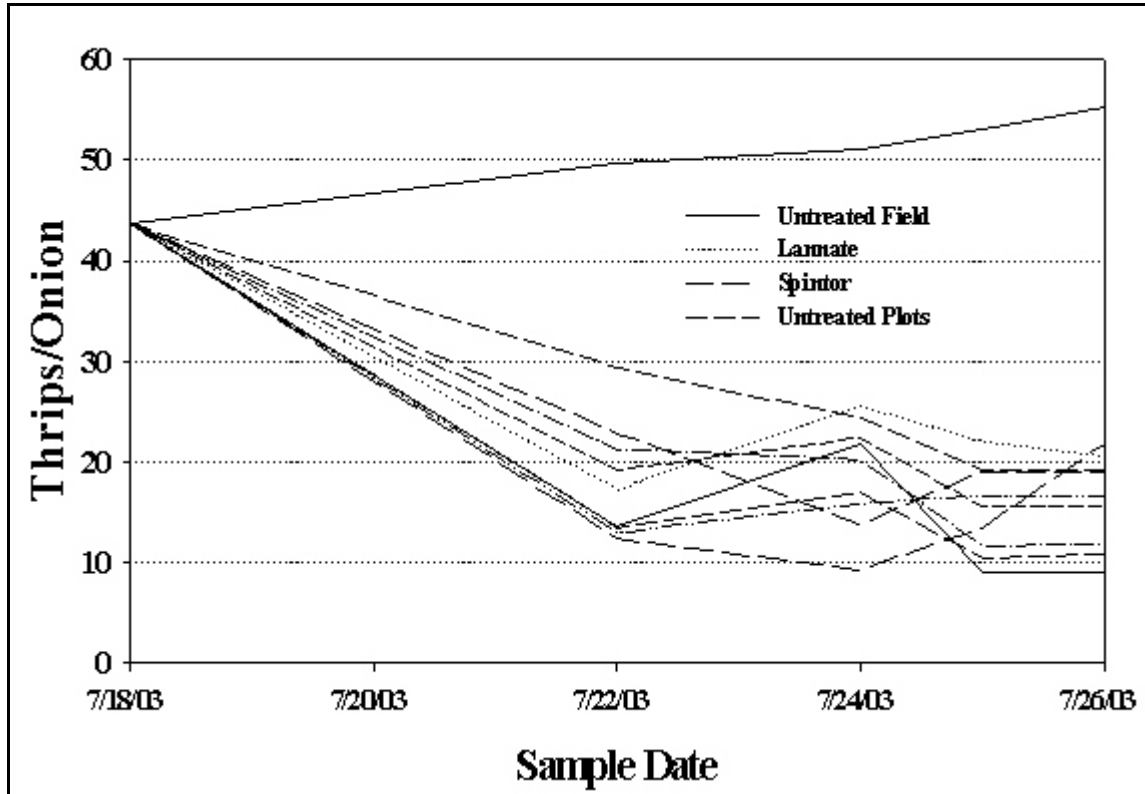


Figure 1. Untreated onions in areas away from the experimental plots had much higher onion thrips counts than untreated onions within the experimental area.

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