Efficacy of Foliar-Applied Insecticides against Thrips on Processing Tomatoes

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Introduction

Thrips, primarily Western flower thrips, *Frankliniella occidentalis*, are a very common and numerous insect tomatoes. Insecticides have been used to reduce thrips levels when population densities were very high in this crop, but usually, processing tomatoes would not be treated due to direct feeding damage caused by this insect. Within the last three years, a thrips-transmitted virus, *Tomato spotted wilt virus*, has caused substantial losses in tomatoes in Fresno County. Therefore, more attention has been focused on control of these insects.

Methods

The study was conducted at the University of California West Side Research and Extension Center at Five Points, California. Processing tomato seed (variety 303) were sown and sprinkler irrigated on 9 April. Materials selected (Table 2) were based on promise in other thrips insecticide trials, and communication with Pest Control Advisors and chemical company representatives. The experimental design was a four replication randomized complete block and plot size was on 66 inch bed by 50 ft. Materials were applied in the equivalent of 30 gallons of water per acre with surfactant Induce 0.25% on 21 July. On 25 July, ten 12 inch shoots per plot were collected and shaken onto a white material. Thrips that were moving were counted separately from those that were apparently dead.

Results

One approach to management of TSWV is chemical control of the thrips vector. Live thrips count means differed significantly among treatments, whereas there were no significant differences in dead thrips counts among treatments (P=0.05). Based on live thrips counts the materials that were significantly better than the untreated control included Dimethoate, Mustang with Beleaf, Radiant, Lannate and Surround. Dimethoate, Mustang with Beleaf, Radiant and Lannate were among the best performing materials last year also. Surround, which is a treated kaolin clay, also showed promise in the 2008, but was not included in the 2007 trial.

Comparison of insecticides for control of thrips on processing tomato in Fresno County, 2008.

Material(s)[z] (rate formulated product/acre)	Thrips counts four days after treatment[y]	
	Alive	Dead
Dimethoate 4EL 1 pt	0.00 c	11.25
Mustang 4.3 fl oz + Beleaf 50SG 2.8 oz	0.25 bc	10.00
Radiant 6.0 fl oz	0.25 bc	15.50
Lannate SP 1 lb	0.50 bc	14.50
Surround 25 lbs	0.50 bc	9.00
Mustang 4.3 fl oz	1.25 abc	18.00
Leverage 5.1 fl oz	1.25 abc	14.00
Baythroid XL 2.8 fl oz + Diazinon AG500 4qts	1.75 abc	12.75
Movento 5.0 fl oz	2.75 ab	15.25
Venom 70DG 4 oz	3.25 ab	19.50
Untreated control	4.25 a	21.75
$LSD_{0.05}$	1.89	NS
CV (%)	90.20	41.79

[z] Materials were applied in the equivalent of 30 gallons of water per acre with surfactant Induce 0.25% on 21 Jul.

[y] On 25 July, ten 12 inch shoots per plot were collected and shaken onto a white material. Thrips that were moving were counted separately from those that were apparently dead.