

INSECTICIDE TRIALS FOR ONION THRIPS (*THRIPS TABACI*) CONTROL – 2002

Lynn Jensen
Malheur County Extension Office
Oregon State University
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Introduction

Onion thrips are the major insect pest of onions in the Idaho-Eastern Oregon production area. Many growers are making four to six insecticide applications during the growing season in order to keep the pest suppressed enough to maintain economic yields. Thrips control with Warrior, the most commonly used insecticide treatment, has gone from over 90 percent control in 1995 to less than 60 percent in 2002. New insecticides or new methods of using currently registered products are needed in order to keep onion thrips under control.

Materials and Methods

Two trials were established on the edge of a commercial furrow-irrigated onion field near Nyssa, Oregon. The onion variety was 'Vaquero'. One trial consisted of screening foliar-applied insecticides to identify new compounds or new ways to apply registered materials. The other trial evaluated insecticides that could be soil applied.

Foliar treatments were applied with a CO₂ pressurized sprayer calibrated to apply 38.8 gal/acre water at 30 psi with 8004 flat fan spray nozzles except for one treatment that was applied with a three-nozzle row banding sprayer. This sprayer consisted of three 8001 nozzles/row and was calibrated to apply water at a rate of 37.85 gal/acre. Foliar treatments were applied on June 11 and a second time on June 21. The treatments are listed in Table 1.

On June 6, the soil-applied treatments were shanked into the soil 2 inches to the side and 2 inches deep on the irrigation furrow side of the row. The gallonage was 56.5 gal/acre.

Thrips counts were made on June 13, 21, and 29 in the efficacy trial and on June 13, 21, 29, and July 5 in the sidedress trial.

Results and Discussion

The efficacy trial data are reported in Table 3. Except for the first evaluation date, none of the treatments was significantly different. There was a trend for Warrior (Fig. 2) applied with the three nozzle/row spray boom to result in fewer thrips than Warrior sprayed with the regular boom, except after the second

application, but that trend was not significant. There was also a slight advantage to the Warrior-Sugar Solution (Fig. 2) over Warrior alone on the first application but this was not significant. Warrior gave the overall best performance, but it provided less than 60 percent thrips control. Actara, Platinum, and F0570 all performed similarly to Warrior (Fig. 3).

The soil-applied trial results are shown in Table 4. Furadan as a soil-applied insecticide was very effective for the first 2 weeks following application, but control declined after that. Vydate gave some control at the high rate but it was not economical. These data are illustrated in Fig. 4.

Conclusion

Furadan resulted in good early season thrips control as a soil-applied insecticide; however it is not registered for use on onions. None of the foliar-applied materials performed very well. The new chemistries of insecticides such as Actara, Platinum, and F1785 did not perform any better than Warrior.

Table 1. Insecticides and rates evaluated as foliar applications for thrips control in onions. Nyssa, OR, 2002.

Treatments – foliar applied	Rate lb a.i./acre	Formulated rate
F1785 50DF	0.036	1.15 oz/acre
F1785 50DF	0.071	2.27 oz/acre
F1785 50DF	0.144	4.6 oz/acre
F1785 10WP	0.036	0.36 oz/acre
F0570 15WP	0.02	0.134 oz/acre
F1785 10WP	0.053	0.53 oz/acre
F0570 15WP	0.02	0.134 oz/acre
F1785 10WP	0.071	0.71 oz/acre
F0570 15WP	0.02	0.134 oz/acre
F0570 15WP	0.02	0.134 oz/acre
F0570 15WP	0.025	0.167 oz/acre
Actara	0.047	3.0 oz/acre
UTC*		-----
Platinum		8.0 oz/acre
Warrior	1.0	3.84 oz/acre
Warrior (Spray boom)	1.0	3.84 oz/acre
Warrior	1.0	3.84 oz/acre
MSR	4.0	24.0 oz/acre
Warrior	1.0	3.84 oz/acre
Sugar Solution	5.0 lb/100 gal	5.0 lb/100 gal

*Untreated check.

Table 2. Insecticide treatments and rates for thrips control in onions, Nyssa, OR, 2002.

Treatments – soil applied	Rate lb a.i./acre	Formulated rate
Platinum	0.125	8 oz/acre
Platinum	0.25	12 oz/acre
Vydate	2.0	2.0 qt/acre
Vydate	4.0	4.0 qt/acre
Furadan	1.0	1.0 qt/acre

Table 3. Results of foliar-applied insecticides on onion thrips control in dry bulb onions from applications made on June 11 and 21, Nyssa, OR, 2002.

Treatment	Formulated rate	6/13/2002	6/21/2002	6/27/2002
-----Average thrips/plant-----				
F1785 50DF	1.15 oz/acre	11.9	8.3	10.4
F1785 50DF	2.27 oz/acre	13.0	9.3	19.9
F1785 50DF	4.6 oz/acre	8.8	8.8	13.0
F1785 10WP	0.36 oz/acre	8.7	7.9	12.8
F0570 15WP	0.134 oz/acre			
F1785 10WP	0.53 oz/acre	9.0	6.9	16.7
F0570 15WP	0.134 oz/acre			
F1785 10WP	0.71 oz/acre	7.9	7.2	14.2
F0570 15WP	0.134 oz/acre			
F0570 15WP	0.134 oz/acre	10.9	8.3	12.2
F0570 15WP	0.167 oz/acre	8.9	6.5	13.4
Actara	3.0 oz/acre	8.6	7.0	11.5
UTC*	-----	12.7	11.5	17.6
Platinum	8.0 oz/acre	8.4	6.0	14.9
Warrior	3.84 oz/acre	7.7	6.6	13.9
Warrior (Spray boom)	3.84 oz/acre	5.5	4.8	19.1
Warrior	3.84 oz/acre	6.1	6.6	12.5
MSR	24.0 oz/acre			
Warrior	3.84 oz/acre	6.8	6.2	16.0
Sugar Solution	5.0 lb/100 gal			
LSD (0.05)		3.7	ns	ns

*Untreated check.

Table 4. Results of soil-applied insecticides on onion thrips in dry bulb onions, Nyssa, OR, 2002.

Treatment	6/13/2002	6/21/2002	6/27/2002	7/5/2002
-----Average thrips/plant-----				
Platinum 8 oz	18.7	9.5	18.0	37.8
Platinum 12 oz	11.7	10.3	14.7	36.8
Vydate 2.0 qt	13.2	7.5	14.3	32.1
Furadan	4.1	2.0	11.0	28.3
Vydate 4.0 qt	10.1	4.8	13.5	34.5
LSD (0.05)	5.5	5.1	ns	ns

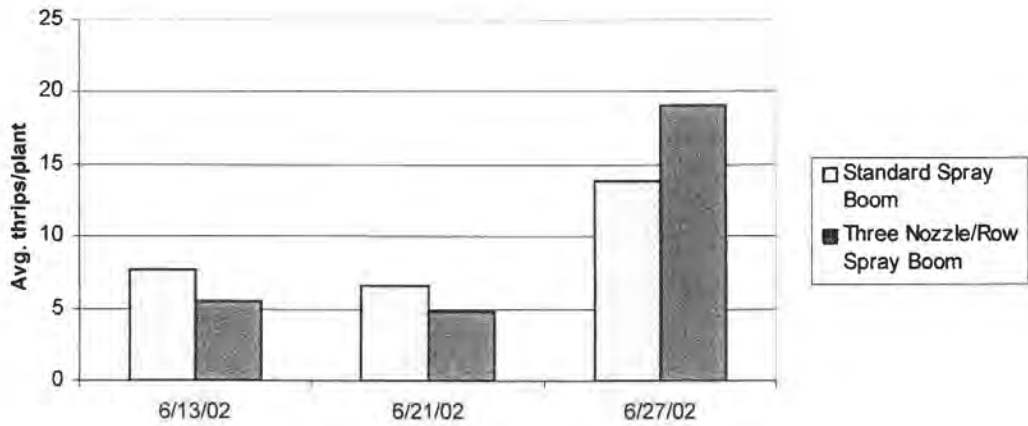


Figure 1. Comparison of thrips control using Warrior insecticide with a standard spray nozzle configuration versus a three-nozzle/row band, Nyssa, OR, 2002.

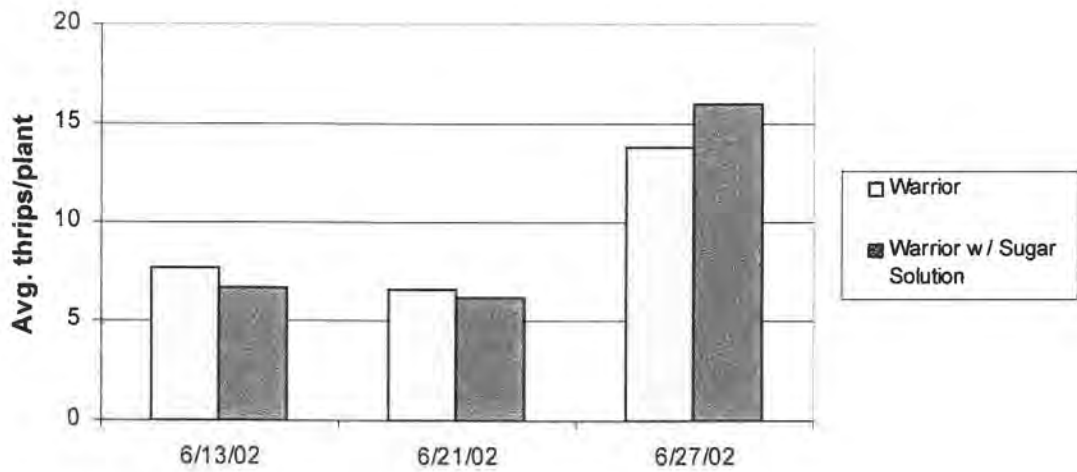


Figure 2. Comparison of Warrior and a sugar-solution applied with Warrior for thrips control in dry bulb onions, Nyssa, OR, 2002.

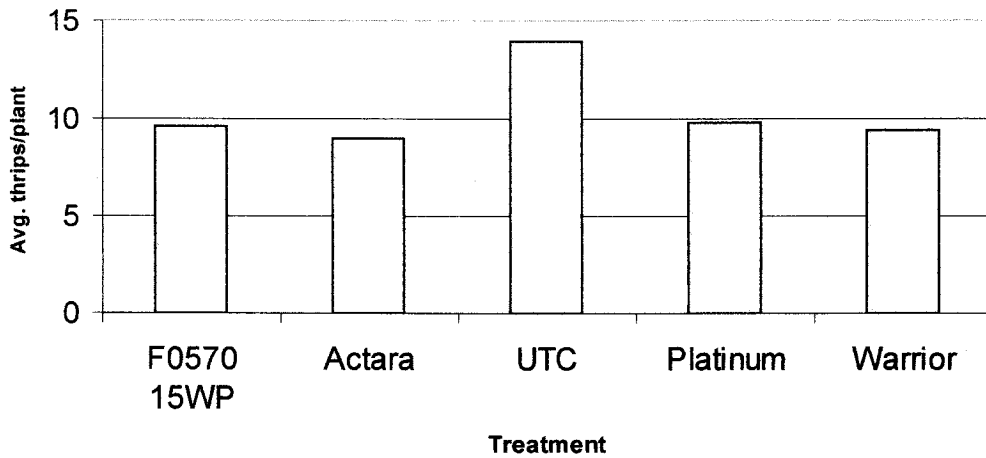


Figure 3. Comparison of new insecticides to Warrior for thrips control in dry bulb onions, Nyssa, OR, 2002.

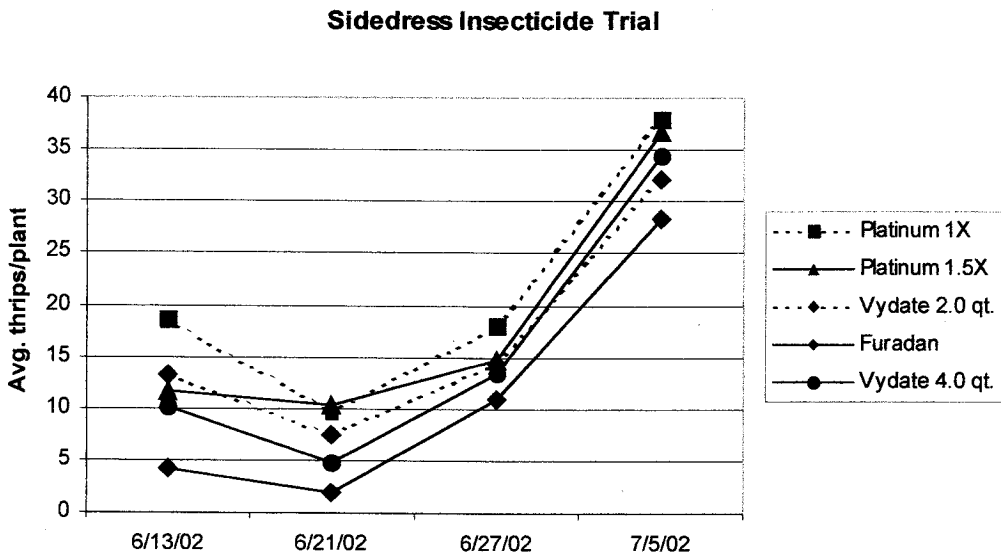


Figure 4. Results of soil-applied insecticides on onion thrips in dry bulb onions, Nyssa, OR, 2002.