

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

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Introduction

The estimated value of onion production in Malheur County for the 2000 crop season was \$51,744,000 or just over 26 percent of the \$196,444,000 agricultural income for the county. Malheur County grows over 50 percent of the onions grown in the Idaho-Eastern Oregon production area. Onions are the leading crop commodity in the county, just behind beef production in total sales. Onion production is very competitive, with Washington and Colorado being the main competitors of the Idaho-Eastern Oregon production area. The competitive nature of the onion business combined with highly cyclical prices make onion production a risky enterprise. Keeping production costs low can alleviate part of that risk. Onion thrips are the major insect pest of onion production in the Idaho-Eastern Oregon production area. Effective thrips control with fewer insecticide applications can help growers reduce costs while maintaining their productive edge.

Materials and Methods

This trial was established on the edge of a commercial onion field near Nyssa. The onion variety was 'Vaquero'. Precounts of thrips were made on June 5th. The initial treatments were made on June 6 with sequential applications on June 17 and June 27 (Tables 1-3). Evaluations were made on June 9, June 13, June 22, and July 5 by randomly selecting 15 plants within each treatment and counting the total number thrips on each plant.

Individual plots were 6.67 ft wide (four double rows) by 50 ft long. Each treatment was replicated four times in a randomized complete block design. The application rate was 37.6 gal/acre.

Results and Discussion

Although there were significant differences between treatments, none of the treatments were very effective (Table 3). Table 4 show the same data expressed as a percentage of the check.

Warrior T was applied with several different adjuvants. R-11 gave the best, most consistent results and Breakthrough the poorest. There was no advantage adding

expensive adjuvants to the Warrior T. These results are indicative of the problem of testing adjuvants during different growing seasons. One year a certain adjuvant will show superior results and the next year may not be nearly as effective as another. Communication between growers, consultants, and researchers is important to ensure that the best control possible is obtained.

Mustang was not as effective as Warrior T in controlling thrips except at the June 13 evaluation. The highest rate of Mustang was not as effective as the lower rates, except at the June 22 evaluation date. Mustang significantly enhanced the activity of MetaSystox R.

MetaSystox R is an old organophosphate insecticide that has previously been registered on onions. The current manufacturer has expressed interest in renewing that registration. MetaSystox R did show promise as a tool in helping control thrips when used in combination with Mustang or Lannate. The best thrips control was the MetaSystox R - Lannate combination that gave 67.8 percent thrips control at the June 22 evaluation.

MetaSystox R effectiveness was significantly enhanced when either Lannate or Mustang was added.

Conclusions

None of the evaluated treatments gave very good control. The addition of adjuvants such as garlic oil extracts (Envirepel 20) did not enhance insecticide activity. Combinations of Mustang, MetaSystox R, and Lannate did enhance insecticide performance.

Table 1. Application data for insecticide treatments to control onion thrips, Nyssa, OR, 2000.

	1 st Application	2 nd Application	3 rd Application
Date	6/6/2000	6/17/2000	6/27/2000
Time	6:30-8:00 p.m.	3:00-5:00 p.m.	2:30-4:00 p.m.
Temperature	95°F	90°F	97°F
Wind high	3.1 mph	3.1 mph	5.3 mph
Average	2.2 mph	1.5 mph	3.0 mph
Relative Humidity (%)	15	26	6

Table 2. Insecticide and adjuvants tested for thrips control, Nyssa, OR, 2000.

Insecticide	Additives
Warrior T	Tomahawk
Warrior	Havoc
Mustang	Envirepel 20
MetaSystox R	Indicate 5
Lannate	Faststrike
	R-11
	Breakthrough
	Foliar Fertilizer 10-20-20

Table 3. Average number of thrips on each plant after insecticide treatment, Nyssa, OR, 2000.

Treatment	Rate/Acre	Evaluation date			
		6/9/00	6/13/00	6/22/00	7/5/00
-----average number thrips per plant-----					
Warrior T	3.8 oz				
R-11	2 pt/100 gal	0.9	9.8	12.9	-----
Warrior	3.8 oz				
Foliar Fert. 10-20-20	10 lb				
R-11	2 pt/100 gal	1.0	9.2	20.7	-----
Warrior	3.8 oz				
Foliar Fert. 10-20-20	20 lb				
R-11	2 pt/100 gal	1.4	9.2	21.8	-----
Warrior T	3.8 oz				
Breakthrough	13 oz/100 gal	1.9	11.7	21.2	-----
Warrior T	3.8 oz				
Faststrike	5 pt/100 gal	1.5	9.6	19.9	-----
Indicate 5	6 oz/100 gal				
Envirepel 20	24 oz				
Warrior T	3.8 oz				
Faststrike	5 pt/100 gal	2.3	9.5	17.6	-----
Tomahawk	1 pt/100 gal				
Havoc	2 qt/100 gal				
Envirepel 20	24 oz				
Warrior T	3.8 oz	2.8	9.8	16.7	-----
Tomahawk	1 pt/100 gal				
Havoc	2 qt/100 gal				
Envirepel 20	32 oz	3.2	15.7	17.1	-----
Mustang	3.2 oz				
R-11	2 pt/100 gal	1.7	9.2	19.8	-----
Mustang	3.75 oz				
R-11	2 pt/100 gal	3.0	9.3	16.2	-----
Mustang	4.3 oz				
R-11	2 pt/100 gal	2.8	11.2	16.7	-----
MetaSystox R	1.5 pt				
Mustang	3.75 oz				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	1.2	7.5	11.7	-----
MetaSystox R	3 pt				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	2.3	12.0	14.9	-----
MetaSystox R	1.5 pt				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	2.1	8.1	18.4	-----
MetaSystox R	1.5 pt				
Lannate	3.0 pt				
Indicate 5	6oz/100 gal				
R-11	2 pt/100 gal	1.1	7.1	6.9	21.0
Untreated Check		2.1	12.0	21.4	41.5
LSD		0.4	3.4	5.3	

Table 4. Percent of thrips controlled compared to the untreated check from insecticide applications, Nyssa, OR, 2000.

Treatment	Rate/acre	Evaluation date			
		6/9/00	6/13/00	6/22/00	7/5/00
-----Percent of control-----					
Warrior T	3.8 oz				
R-11	2 pt/100 gal	57.1	18.3	39.7	
Warrior	3.8 oz				
Foliar Fert. 10-20-20	10 lb				
R-11	2 pt/100 gal	52.4	23.3	3.3	
Warrior	3.8 oz				
Foliar Fert. 10-20-20	10 lb				
R-11	2 pt/100 gal	33.3	23.3	0	
Warrior T	3.8 oz				
Breakthrough	13 oz/100 gal	9.5	2.5	0.9	
Warrior T	3.8 oz				
Faststrike	5 pt/100 gal	28.6	20.0	7.0	
Indicate 5	6 oz/100 gal				
Envirepel 20	24 oz				
Warrior T	3.8 oz				
Faststrike	5 pt/100 gal	0	20.8	17.8	
Tamahawk	1 pt/100 gal				
Havoc	2 qt/100 gal				
Envirepel 20	24 oz				
Warrior T	3.8 oz	0	18.3	22.0	
Tomahawk	1 pt/100 gal				
Havoc	2 qt/100 gal				
Envirepel 20	32 oz	0	0	19.2	
Mustang	3.2 oz				
R-11	2 pt/100 gal	19.0	23.3	7.5	
Mustang	3.75 oz				
R-11	2 pt/100 gal	0	22.5	24.3	
Mustang	4.3 oz				
R-11	2 pt/100 gal	0	6.7	22.0	
MetaSystox R	1.5 pt				
Mustang	3.75 oz				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	42.8	37.5	45.3	
MetaSystox R	3 pt				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	0	0	30.4	
MetaSystox R	1.5 pt				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	0	32.5	14.0	
MetaSystox R	1.5 pt				
Lannate	3.0 pt				
Indicate 5	6 oz/100 gal				
R-11	2 pt/100 gal	47.6	40.8	67.8	49.4
Untreated Check		0	0	0	0
LSD		12	21.7	24.3	