

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

Lynn Jensen
Malheur County Extension Office
Oregon State University
Ontario, OR, 2001

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 2000. New insecticides or new methods of using currently registered products are needed in order to keep onion thrips under control.

Materials and Methods

This trial was established on the edge of a commercial onion field near Nyssa, Oregon. The onion variety was 'Vaquero'. Pre-counts were made on June 14. The initial treatments were applied on June 15, with sequential treatments on June 20 and June 27 (Table 1). Evaluations were made on June 20 and July 6 by randomly selecting 15 plants within each treatment and counting the total number of thrips on each plant.

Individual plots were 6.67 ft wide (four double rows) by 50 ft in length. Each treatment was replicated four times in a randomized complete block design. Treatments included Warrior, Capture, Mustang, Furadan, Meta Systox R, Ecozin, Aza Direct, and Messenger. Capture, Warrior, and Mustang are all members of the synthetic pyrethroid class of insecticides and have similar modes of activity. Furadan is a systemic carbamate and Meta Systox R is an organophosphate insecticide. Ecozin and Aza Direct are naturally occurring extracts of the neem tree that work as an insect growth regulator (IGR) to disrupt the normal growth of insects.

Three sequential applications were made to evaluate the effectiveness of the IGR materials. Messenger is a harpin protein material thought to enhance the plant's ability to adapt to stress. Furadan, Capture, and Meta Systox R are not currently registered for use on onions.

Results and Discussion

Furadan gave consistently good control and was the best treatment at each evaluation date (Table 2). All of the treatments were significantly different from the check but not from each other in the June 20 evaluation.

At the June 26 evaluation date Furadan was significantly better than Ecozin, Mustang, and the Warrior + Ecozin 10-oz treatments. All of the treatments except Ecozin were significantly better than the untreated check.

Furadan was significantly better than the Warrior + Ecozin 10 oz and Ecozin treatments at the July 6 evaluation date. All of the treatments except Ecozin were better than the untreated check.

The addition of the harpin protein Messenger to Warrior did not improve thrips control in any of the evaluations. The addition of the neem tree extracts, Ecozin or Aza Direct, did not improve thrips control over Warrior alone. The synthetic pyrethroid Capture provided better thrips control on June 26 compared to Warrior but less control than Warrior on the other two evaluation dates. These differences were not significant. Mustang treatments did not significantly differ from Warrior.

Conclusions

Furadan gave excellent thrips control at all evaluation dates.

The addition of Ecozin, Aza Direct, MSR, or Messenger to Warrior did not improve thrips control.

Table 1. Application data for insecticide treatments to control onion thrips, Nyssa, OR, 2001.

Table 2. Average number of thrips on each plant after insecticide treatment, Nyssa, OR, 2001.

*Each treatment receiving 16.0 oz/ac Breakthrough silicone adjuvant.

†Received 16.0 oz/ac Indicate as a buffering agent.

Table 3. Percent of thrips control as compared to the untreated check from insecticide applications, Nyssa, OR, 2001.

*Each treatment receiving 16.0 oz/ac Breakthrough silicone adjustment.

†Received 16.0 oz/ac Indicate as a buffering agent.