

Regent Seed Treatment Onion Insecticide Trial, 2006

Bob Hammon & Melissa Foley
Colorado State University Cooperative Extension, Tri River Area
Grand Junction CO

An evaluation of fipronil seed treatment for control of thrips in onions was conducted in Mesa County Colorado in 2006. Regent 500 seed treatment, applied at a rate of 2.5 g ai/100 g seed, reduced total thrips numbers by an average of 49% on six sample dates through the end of June. There were significantly fewer thrips in the treated plots on four of the six sample dates.

FIELD DETAILS

- ! **Location:** Colorado State University, Western Colorado Research Center at Fruita, CO
- ! **Planting Date:** April 18, 2006
- ! **Seed Population:** 130,000 seeds per acre
- ! **Fertilizer:** 200 lbs. of 11-52-0 pre plant incorporated
- ! **Water:** Furrow irrigated, April 18, May 1, 8, 18, 26, June 2, 11, 27, July 4, 14, 21, 31, Aug 7
- ! **Herbicides:** Dacthal, 10 lb/A, 18 April; Buctril, 7 oz/A, 19 May, Starane, 11 oz/A & Goal, 8 oz/A; 6 June; Select 8 oz/A 6 June, Dual, 16 oz/A & Buctril, 12 oz/A & Goal, 8 oz/A, 20 June

EXPERIMENT DETAILS

- ! **Experimental Design:** Randomized complete block, split plot.
 - " main plot - variety (4 varieties) ; sub-plot - seed treatment (treated vs untreated)
 - " four replications
- ! **Varieties:** Charismatic, Tioga, and Mercury provided by John Marchese, Seminis Seed. Nebula provided by Dr. Alan Taylor, Cornell University
- ! **Seed Treatment:** Regent 500, 2.5 g a.i./100 g seed, treatment applied by Dr. Alan Taylor
- ! **Plot size:** 50' long x 3' (2-30" beds) wide (2 rows 8" spacing on 30" beds).
- ! **Sampling Technique:** Five plants randomly selected from each plot on each sample date. Two replications were sampled on one day, with the remaining two sampled the following day.
 - " Plants placed in Berlese funnels for 24 hours to extract thrips.
 - " Adult thrips were separated by species and counted, immature thrips counted together
 - " Sample dates and onion growth stage:

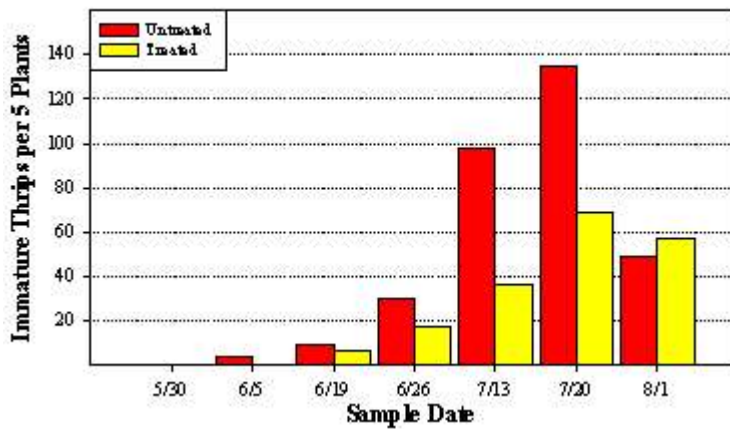
Sample Date	Days After Planting	Leaf #
May 30 & 31	42/43	2
June 5 & 7	48 & 50	2.5
June 19 & 20	62/63	4
June 26 & 27	69/70	5
July 13 & 14	86/87	7
July 20 & 21	93/94	9
August 1 & 2	105/106	11

RESULTS

- ! Thrips numbers were low to moderate through mid July, but reached 40 per plant on ‘Nebula’ on the mid-July sample date.
- ! Regent reduced immature and total thrip numbers by about 50% through the July 20/21 sample date.

IMMATURE THRIPS PER 5 PLANTS								
Variety	Treatment	May 30 & 31	June 5 & 7	June 19 & 20	June 26 & 27	July 13 & 14	July 20 & 21	August 1 & 2
Tioga		0.6	2.4	8.9 AB	24.8 A	66.9	61.5 B	27.5
Charismatic		0.5	4.5	11.8 A	31.5 A	50.3	60.6 B	40.9
Mercury		0.4	0.6	6.8 B	24.9 A	61.3	88.6 B	49.0
Nebula		0.1	0.9	4.8 B	14.3 B	91.6	198.5 A	95.5
P-value		NS	0.2637	0.0921	0.0700	NS	0.0347	0.3206
	Untreated	0.5	3.6 A	9.3	30.3 A	98.2 A	135.3 A	48.8
	Treated	0.3	0.6 B	6.8	17.4 B	36.8 B	69.4 B	57.6
P-value		0.790	0.0636	0.3018	0.0083	0.0070	0.0695	NS

TOTAL THRIPS PER 5 PLANTS								
Variety	Treatment	May 30 & 31	June 5 & 7	June 19 & 20	June 26 & 27	July 13 & 14	July 20 & 21	August 1 & 2
Tioga		1.0	3.9	12.9	28.9 A	77.3	65.5 B	32.0
Charismatic		1.3	6.9	19.4	35.9 A	61.9	64.9 B	44.6
Mercury		0.9	1.9	12.8	29.0 A	74.6	96.1 B	56.5
Nebula		0.6	3.3	10.1	17.4 B	109.3	208.9 A	103.6
P-value		NS	0.2373	0.1199	0.0605	0.4106	0.0340	0.3145
	Untreated	1.3	5.9 A	15.5	35.8 A	114.4 A	143.6 A	54.5
	Treated	0.6	2.1 B	12.1	19.8 B	47.1 B	74.1 B	63.9
P-value		0.1246	0.0477	0.3049	0.0024	0.0037	0.0598	NS



The thrips population increased through mid-July and Regent was effective in reducing their numbers by about 50% .