

Foliar Onion Trial 2006

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An evaluation of foliar treatments for control of thrips in onions was conducted in Mesa County Colorado in 2006.

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.
- " four replications
- " ten foliar treatments, one untreated
 - Nufilm surfactant was added to each treatment
 - CO₂ pressured, hand held sprayer calibrated at 26 gal/acre @ 40 PSI

| Product | Rate /Acre |
|--------------------------|------------------|
| GF-1587 | 0.0447 lb. ai |
| Syngenta Rotation | |
| Week 1-Warrior | 3.84 oz. |
| Week 2-Warrior + Lannate | 3.84 oz. + 2 pt. |
| Week 3-Agri-Mek | 10 oz. |
| Week 4-Warrior + Lannate | 3.84 oz. + 2 pt. |
| Warrior | 3.84 oz. |
| Agri-Mek 0.15 EC | 8 oz. |
| Agri-Mek 0.15 EC | 10 oz. |
| Carzol | 0.5 lb. |
| Carzol | 0.5 lb. @ pH 5 |
| Carzol | 0.75 lb. |
| Carzol | 0.75 lb. @ pH 5 |
| Lorsban 4E | 1 pt. |

- ! **Variety:** Tioga, raw unpelleted seed, provided by John Marchese, Seminis Seed
- ! **Plot size:** 50' long x 7.5' (3-30" beds) wide (2 rows 8" spacing on 30" beds).
- ! **Treatment Applications:**

| Date | Time | Temperature | Wind/Weather | Comments |
|---------|-----------|-------------|--------------------|--|
| 6/12/16 | 1:00-1:30 | 85°-90°F | Calm, sunny | rates okay, clean spray |
| 6/19/06 | 8:30-9:00 | ~75°F | ~3-5 m.p.h., sunny | rates right on, clean spray |
| 7/13/06 | 8:00-8:30 | ~75°F | Calm, sunny | rates right on, clean spray |
| 7/20/06 | 8:30-9:00 | ~75°F | ~1-3 m.p.h., sunny | rates 20% short on treatments 2 & 3, clean spray |

! **Sampling Technique:** Five plants randomly selected from the center row in each plot on each sample date. Two replications were sampled on one day, with the remaining two sampled the following day.

" Plants were 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 | Days After Spray | Leaf # |
|--------------------|----------------------------|-------------------------|---------------|
| June 15/16 | 58/59 | 3/4 | 2-3 |
| June 21/22 | 64/65 | 2/3 | 3-4 |
| June 29/30 | 72/73 | 10/11 | 4-5 |
| July 11/12 | 84/85 | 22/23 | 6-7 |
| July 18/19 | 91/92 | 5/6 | 8-9 |
| July 26/27 | 99/100 | 6/7 | 9-10 |
| August 3/4 | 107/108 | 14/15 | 10-11 |

RESULTS

| IMMATURE THRIPS | | | | | | |
|------------------------|------------------|------------|------------|------------|------------|------------|
| Sum of Weeks | 1 & 2 | 1-3 | 1-4 | 1-5 | 1-6 | 1-7 |
| Untreated | 39.5 A | 77.8 A | 122.3 | 185.0 | 220.3 | 267.0 |
| GF-1587 | 19.3 B | 59.8 AB | 93.8 | 162.3 | 201.5 | 258.0 |
| Syngenta Rotation | 12.8 B | 33.0 BC | 99.3 | 172.3 | 197.5 | 275.0 |
| Warrior | 19.3 B | 33.5 BC | 79.0 | 134.0 | 185.0 | 267.0 |
| Agri-Mek (low) | 18.5 B | 37.5 BC | 83.5 | 147.5 | 177.3 | 306.8 |
| Agri-Mek (high) | 10.8 B | 27.3 C | 64.0 | 110.3 | 122.8 | 171.5 |
| Carzol (low) | 12.8 B | 27.0 C | 122.0 | 179.0 | 200.8 | 319.3 |
| Carzol (low) pH 5 | 15.5 B | 37.0 BC | 117.3 | 195.8 | 256.5 | 438.3 |
| Carzol (high) | 10.5 B | 20.3 C | 82.0 | 112.0 | 135.0 | 254.5 |
| Carzol (high) pH 5 | 18.3 B | 29.5 C | 77.3 | 117.8 | 151.5 | 191.3 |
| Lorsban 4E | 18.8 B | 32.0 BC | 80.8 | 172.8 | 226.5 | 466.0 |
| P-value | 0.0073 | 0.0003 | NS | NS | NS | 0.3339 |

Means within a column section followed by the same letter are not significantly different (LSD, P<0.05, 0.10).

| TOTAL # OF THRIPS | | | | | | |
|--------------------------|------------------|------------|------------|------------|------------|------------|
| Sum of Weeks | 1 & 2 | 1-3 | 1-4 | 1-5 | 1-6 | 1-7 |
| Untreated | 52.5 A | 103.5 A | 158.0 | 227.8 | 268.0 | 317.0 |
| GF-1587 | 25.8 B | 81.5 AB | 126.5 | 198.5 | 243.0 | 309.3 |
| Syngenta Rotation | 17.0 B | 45.0 BC | 123.3 | 202.0 | 230.8 | 325.8 |
| Warrior | 23.0 B | 44.0 BC | 106.3 | 169.3 | 223.0 | 311.3 |
| Agri-Mek (low) | 26.0 B | 54.0 BC | 115.0 | 184.5 | 216.8 | 361.8 |
| Agri-Mek (high) | 16.3 B | 40.8 C | 89.0 | 141.8 | 157.0 | 215.5 |
| Carzol (low) | 19.5 B | 43.8 BC | 167.0 | 230.5 | 257.3 | 385.8 |
| Carzol (low) pH 5 | 18.5 B | 56.0 BC | 157.8 | 248.0 | 316.3 | 521.3 |
| Carzol (high) | 13.5 B | 31.8 C | 112.0 | 150.8 | 178.0 | 324.5 |
| Carzol (high) pH 5 | 22.8 B | 44.5 BC | 107.0 | 156.8 | 194.8 | 244.5 |
| Lorsban 4E | 25.0 B | 49.5 BC | 111.5 | 213.8 | 274.0 | 527.0 |
| P-value | 0.0009 | 0.0006 | NS | NS | NS | 0.3380 |

Means within a column section followed by the same letter are not significantly different (LSD, P<0.05, 0.10).