2013 Tulelake Onion Research Updates

Rob Wilson
IREC Director/Farm Advisor
White Rot Studies

• Allison Ferry and Mike Davis Trials
  - Sclerotia Germination Stimulants & Fungicide Studies

• Fungicide Tank-mixes
  - Does tank-mixing fungicides at planting have an additive effect on white rot suppression?
  - Do foliar fungicide applications after planting improve white rot suppression?
Total and Clean (white rot free) Onion Yield for Fungicide Tank-mixes tested at IREC in 2013

(5 sclerotia per kg of soil)

- Clean Onion Yield
- Diseased Bulb Yield

Onion Yield (Tons/Acre)

- Follicur in-furrow AND Fontelis at 3, 6, & 9 leaf stage
- Follicur + Fontelis in-furrow
- Fontelis in-furrow
- Follicur + Fontelis in-furrow
- Follicur in-furrow AND Fontelis at 3, 6, & 9 leaf stage
- Follicur in-furrow
- Follicur in-furrow AND Luna at 3, 6, & 9 leaf stage
- Follicur (1/2 rate) in-furrow
- Follicur + Luna in-furrow
- Follicur + Cannonball in-furrow
- Luna in-furrow
- Untreated

Legend:
- abc: Significance level for Diseased Bulb Yield
- ab: Significance level for Clean Onion Yield

Note: The chart shows the yield comparison for different fungicide treatments, with significance levels indicated by different letters.
Onion Weed Control Study
Study Objectives

• Determine the appropriate DCPA (Dacthal) rate for kochia control in Tulelake soil (silty clay loam)

• Determine the appropriate DCPA (Dacthal) rate for kochia control in Tulelake soil (silty clay loam) when used in combination with Pendamethalin (Prowl H20)

• Evaluate weed control and crop safety of Pendamethalin (Prowl H20) applied before onion emergence in Tulelake soil

• Investigate sulfentrazone for weed control in onions
Treatment application timings

• Post-Plant (broadcast at 45 GPA) after onion planting immediately before the 1st irrigation

• Loop (broadcast at 45 GPA) when over 95% of the onion stand reached the loop stage

• The entire trial area was treated with GoalTender at 4 fl. oz/A at the 1.5 leaf stage and Goal 2XL + Buctril at the 2.5 leaf stage
Treatments highlighted in blue included Prowl applied post-plant.
Onion Weed Control Highlights

• Reduced Dacthal rates (2.5 pt/A) were effective at lambsquarter, pigweed, and kochia control when combined with Prowl H20 applied at loop and a Goal postemergence program on sandy and silty clay loam soil types.

• On silty clay loam soil, Dacthal efficacy is greatly improved when combined Prowl H20. The high rate range is needed if Dacthal is used alone on Tulelake soil.

• Prowl H20 application immediately after planting provided improved weed control and excellent crop safety on Tulelake silty clay loam soil (Prowl Section 24c for Northern Counties)
Maggot Control in Onions

- Study objectives were to compare insecticides and insecticide application methods (in-furrow at planting versus seed treatment) to the current in-furrow standard (Lorsban)

- Make sure seed treatments are compatible with in-furrow fungicides and insecticides
Average Onion Stand Across 2011-2013 For Insecticide Treatments Tested all Three Years at IREC

- Admire Pro (imidacloprid) in-furrow
- Entrust (spinosad) in-furrow
- Untreated raw seed
- Untreated seed with Thiram
- Cruiser (thiamethoxam) seed trt
- Lorsban 15-G in-furrow
- Lorsban 4E in-furrow
- FarMoreFl500 (thiamethoxam + spinosad) pelleted seed trt
- Sepresto (clothianidin+imidacloprid) seed trt
- Regard (spinosad) seed trt

Onion Stand Density (plants per plot)

Values shown are means ± SE across three years.
Average Onion Yield Across 2011-2013 For Insecticide Treatments Tested all Three Years at IREC

- Admire Pro (imidacloprid) in-furrow
- Entrust (spinosad) in-furrow
- Untreated raw seed
- Untreated seed with Thiram
- Cruiser (thiamethoxam) seed trt
- Lorsban 15-G in-furrow
- Lorsban 4E in-furrow
- FarMoreFI500 (thiamethoxam + spinosad) pelleted seed trt
- Sepresto (clothianidin+imidacloprid) seed trt
- Regard (spinosad) seed trt

Onion Yield (Tons/Acre)
Compatibility of Insecticide Seed Treatments with Commercial Grower Practices

- Admire Pro (imidacloprid) in-furrow
- Vydate (oxamyl) in-furrow
- Regard (spinosad) seed trt + Admire Pro in-furrow
- Regard (spinosad) seed trt
- Regard (spinosad) seed trt + Folicur in-furrow
- Regard (spinosad) seed trt + Folicur & Lorsban 4E in-furrow
- Regard (spinosad) seed trt + Vydate in-furrow

Onion Stand Density (plants per plot)
Maggot Summary

- Products with clothianidin (Sepresto) and spinosad (Regard and FarMore) applied as a seed treatment provided superior protection from maggot damage compared to the current standard Lorsban over a three period.

- Spinosad seed treatment was much more effective than in-furrow applications of spinosad.

- Syngenta labeled FarMore FL-500 and OI-100 for onion seed treatment in CA:
  - FarMore FL-500 (fludioxonil-Maxim, azoxystrobin-Dynasty, mefenoxam-Apron, spinosad-Regard, and thiamethoxam-Cruiser) applied as pellet form.
  - OI-500 (spinosad-Regard) applied as film coat or encrustment.

- Seed treatments were compatible with fungicide applied in-furrow.
Thank You

- California Garlic and Onion Research Advisory Board
- Alan Taylor, Cornell University
- Tulelake Grower Cooperators
- Steve Orloff
- Matt Barber, Summer Intern
- IREC Staff