

# Managing Tomato Leaf Mold in High Tunnel Production

Chris Smart, Rachel Kreis, Holly Lange

Cornell University, Geneva NY



# Tomato Leaf Mold – *Passalora fulva*



# Symptoms



# Severe Symptoms



# Cultural Controls

- Pathogen grows best at high relative humidity (85%)
  - Use vents and/or fans and roll up sides to reduce humidity
  - Space plants to increase air movement
  - Trellis and prune to increase airflow in and around the plant.
- Remove and destroy crop residue at the end of the season
- Sterilize trellising stakes and any other equipment that comes into contact with plants – commercial sanitizers work well
- Clean/sanitize the high tunnel walls at the end of the season

# Research High Tunnels in Geneva

- Two 96' tunnels
  - Replicated trials
- Split between tomatoes and strawberries
- Because they are research tunnels, we can inoculate
- Project looking at resistant varieties and control strategies (Smart, Reid, Ivy, Rusinek, Menasha, Stewart)
- Leaf mold trial in 2016, and again in 2017 in Geneva



# Leaf Mold Trial



- Tomatoes (BHN 589) were transplanted into tunnel on April 19
- Inoculated with leaf mold pathogen on Aug 10
- Weekly sprays of 5 OMRI-approved fungicides began Aug 9

# Inoculation



Kellie Damann

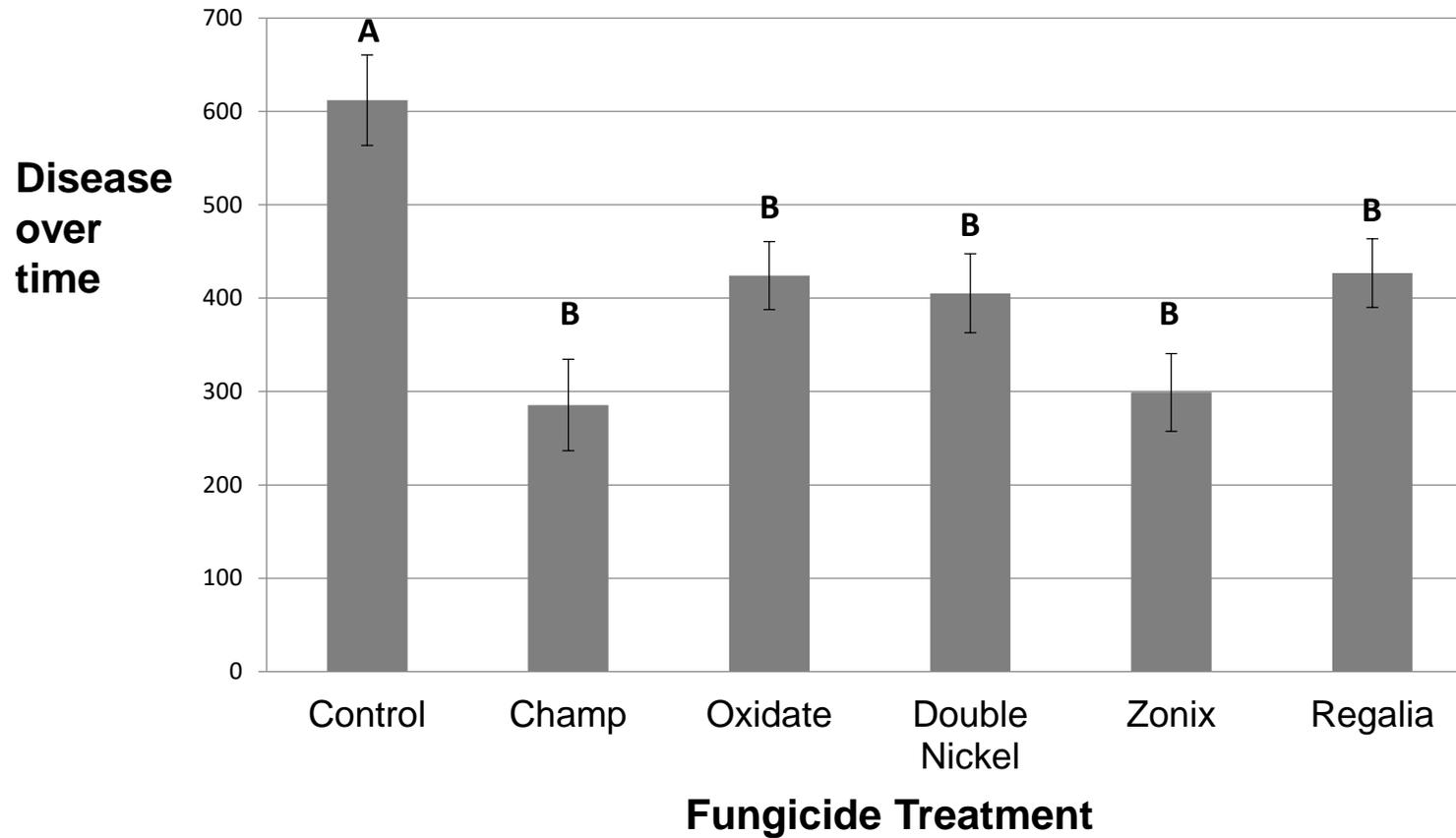


Holly Lange

# Leaf Mold Products Tested

Treatment	Active Ingredient	rate/A	cost/A
Champ	Copper Hydroxide	2#/A	\$12
Double Nickel	<i>Bacillus amyloliquefaciens</i>	.5-6qt/A	\$132
OxiDate	Hydrogen dioxide	128oz/100gal	\$70
Regalia	<i>Reynoutria sachalinensis</i> extract	4 qt/A	\$125
Zonix	Rhamnolipid biosurfactant	38oz/50 gal	\$108

## 2016 Organic Fungicide Trial for Tomato Leaf Mold in High Tunnel Production



# Early Symptoms



# Severe Symptoms



# More Severe Symptoms



# Tomato Varieties

## Resistance is the best control strategy

- Sweet 100, SunGold, BHN 589 very susceptible
- Red Duce and Natures Bites observed (by Jud and Amy) with leaf mold for the first time this year
- Quite a few resistant varieties available  
[hightunnels.cals.cornell.edu](http://hightunnels.cals.cornell.edu)
- We are working to better understand the diversity of the pathogen in NY so we can confidently recommend resistant varieties



Photo: Cordelia Hall

# Yield in Susceptible Varieties



- Amy Ivy working with North Country growers
- Variety Big Beef
- Large yield even with leaf mold

# Spinach Downy Mildew Alert!



**The 'late blight' of spinach re-emerging in NE.  
Found in high tunnel crops.**

**See it? Report it! Manage it!!**

***Meg McGrath mtm3@cornell.edu***

# Thanks!

- NY State Specialty Crop Block Grant
  - NY Farm Viability Institute
- Smart Lab members
- Extension educators and growers involved with demonstration trials
- Everyone that submitted samples
  - Please send more!

