

# Garlic Rust: Fungicides, Management

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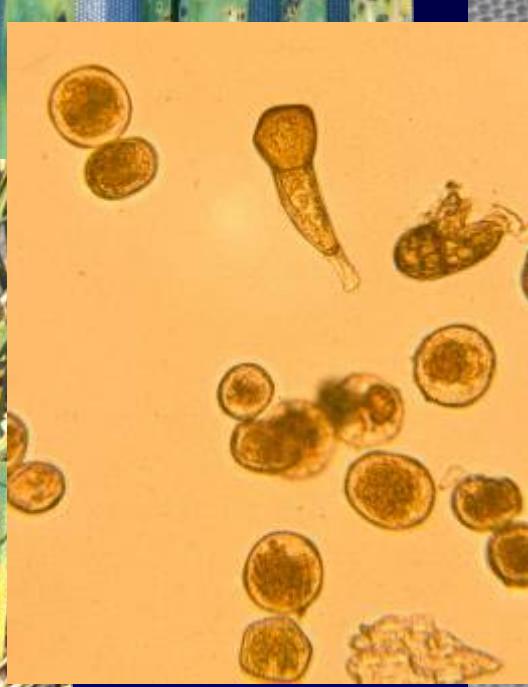


Rust on garlic



# **Garlic rust in California**

- 1990s: severe in CA
- Fungicides registered; disease managed
- 2007 through present: rust still around
- Periodic outbreaks
- Questions about fungicide effectiveness
- Questions about rust mgmt. improvement
- Questions about source of rust, race/strain, host range





Rust on leek



# Different strains of allium rust?

garlic  
rust from  
late 1990s

garlic  
rust from  
2007-2012

Infect garlic?

yes

yes

Infect leek?

no

yes



## Rust fungicide trial: 2011 (Koike and Smith)

	<u>Severity*</u>
Quilt XCEL 21 fl oz	0.9
Quadris 12 fl oz	0.9
Toledo 6 fl oz	1.1
Quilt / Toledo alt.	1.2
Quadris / Toledo alt.	1.6
Q8Y78 18 fl oz	1.6
Fontelis 1 pt	1.8
Fontelis 1.5 pt	1.9
Picoxy 12 fl oz	2.1
Cabrio 12 fl oz	3.1
Untreated	4.2

LSD (P=0.05) = 0.9

\* 0=0% leaf surface, 1=1 to 10%, 2=11 to 25%, 3=26 to 50%,  
4=51 to 75%, 5=76 to 100%



2011

untreated



2011

Toledo



2011

untreated



2011

Quilt

# 2012 Fungicide trials

- **Quadris 12 fl oz. alternate w/ Toledo 6 fl oz**
  - Start spraying early in March, April, or May
  - Spray at intervals of 2 weeks or 3 weeks
  - All applied with organic silicate adjuvant
- **Results:**
  - Very light rust disease levels
  - Mostly no significant differences
  - Need higher rust pressure to separate treatments

## Rust fungicide trial 1: 2012 (Koike and Smith)

	<u>Severity*</u>
Quadris/Toledo, 2 wk, May	0.00
Quadris/Toledo, 3 wk, March	0.10
Quadris/Toledo, 2 wk, March	0.15
Quadris/Toledo, 3 wk, April	0.15
Quadris/Toledo, 2 wk, April	0.40
Quadris/Toledo, 3 wk, May	0.45
Untreated	1.80

LSD (P=0.05) = 0.74

\* Leaf 7: 0=0% leaf surface, 1=1 to 10%, 2=11 to 25%, 3=26 to 50%,  
4=51 to 75%, 5=76 to 100%

## Rust fungicide trial 2: 2012 (Koike and Smith)

	<u>Severity*</u>
Quash 4 oz	0.00
Merivon 8 fl oz	0.20
Actigard 1 oz	0.30
Regalia 32 fl oz	0.30
Sonata 4 qts	0.30
Indar 12 fl oz	0.35
Untreated	0.60
Endura 6.8 oz	0.65

LSD (P=0.05): NS

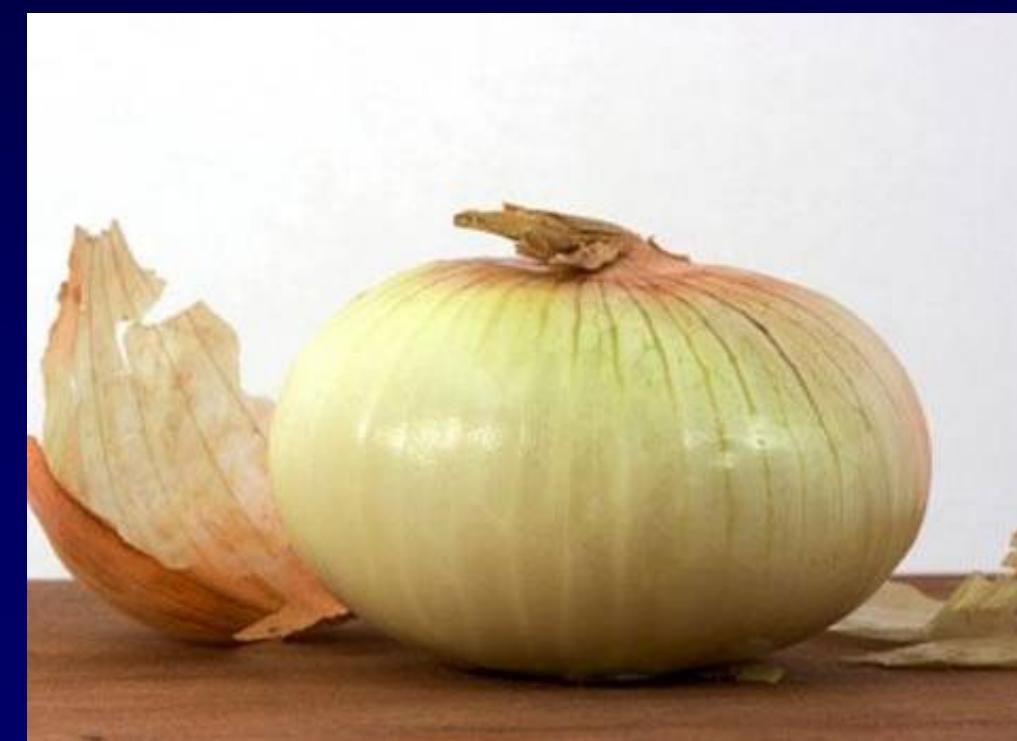
\* Leaf 7: 0=0% leaf surface, 1=1 to 10%, 2=11 to 25%, 3=26 to 50%,  
4=51 to 75%, 5=76 to 100%

# Garlic rust management

- Monitor the crop and disease occurrence
- Monitor weather (warm temp., leaf wetness)
- Fungicides:
  - When to start spraying? 1<sup>st</sup> spray: preventative
  - Spray intervals?
  - Rotate products, coverage max., adjuvant
- Cultural practices

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# Thank You

## Are there any Questions?

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