



Tomato Powdery Mildew

(*Leveillula taurica*, *Oidiopsis sicula*)



Photo by Scott Stoddard



Yield impact?

- Drying out/loss of foliage
 - Sunburn of fruit
 - No yield loss documented in processing tomatoes
 - Fruit quality?
-

Tomato Powdery Mildew in 2007

- Higher incidence than previous years
 - Abundant sporulation
 - “Mature green” industry highly impacted
 - Variability in processing varieties?
 - Difficult to control at some locations
-

What was different in 2007?

- Different species of mildew? (coastal mildew?)
 - New strain?
 - Fungicide resistance?
 - The weather?
-

Dept. of Plant Pathology
University of Arizona



Oidium neolycopersici

Occurs in greenhouses and
can be a minor problem in
coastal-grown tomatoes





Not a different species

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Fungicide efficacy trials

- Field trials conducted by
 - Gene Miyao (UCD campus 2007)
 - Jan Mickler (Stanislaus Co. 2006)
 - Scott Stoddard (Merced Co. 2007)
 - Brenna Aegerter (San Joaquin Co. 2007)
 - Conducted using a backpack sprayer and the equivalent of 50 GPA spray volume
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Mickler - Vernalis 2006:

Quadris/Rally rotation was best
Microthiol Disperss was second;
reduced mildew by 50 to 70% (5
applications)

Miyao - UCD campus 2007:

Quadris or Cabrio
applied once 6 wks prior to harvest
reduced mildew by over 30%

Merced and San Joaquin Counties 2007:

Good control with a Rally/Cabrio
rotation

Powdery mildew chemical control

- Early treatment
 - Good coverage
 - Support plant health
 - Avoid resistance development
-

Resistance Management

| Group Code | Chemical group name | Common names | Product examples | Risk |
|------------|----------------------------------|---|--|--------|
| 3 | Demethylation inhibitors (DMI) | myclobutanil | Rally | medium |
| 11 | Quinone outside inhibitors (QoI) | azoxystrobin, trifloxystrobin, pyraclostrobin | Quadris, Flint, Cabrio | high |
| M | M2 - inorganic | sulfur | Microthiol Disperss, Thiolux, etc. | low |

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Other materials – very low risk

Biofungicides

Bacillus pumilus strain (Sonata)

Bacillus subtilis strain (Serenade)

Others

Potassium bicarbonate (Kaligreen, Armicarb, Milstop and others)

JMS stylet oil

neem oil (Trilogy)

Sporan

Prev-Am

Oxidate

Group codes are on labels

NVA 2003-04-089-0208

BASF

GROUP

11

FUNGICIDE

SPECIMEN

*Cabrio*TM
EG fungicide

For use in berries, bulb vegetables, cherry, cucurbit vegetables, filberts, fruiting vegetables, pistachios, root vegetables and strawberries

Active Ingredient:

Pyraclostrobin (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy)methyl]phenyl]methoxy-, methyl ester) 20.0%

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How to Manage Pests

- Home & garden
- Agriculture
- Weather data & products
- Degree-days
- Interactive tools & models

Educational Resources

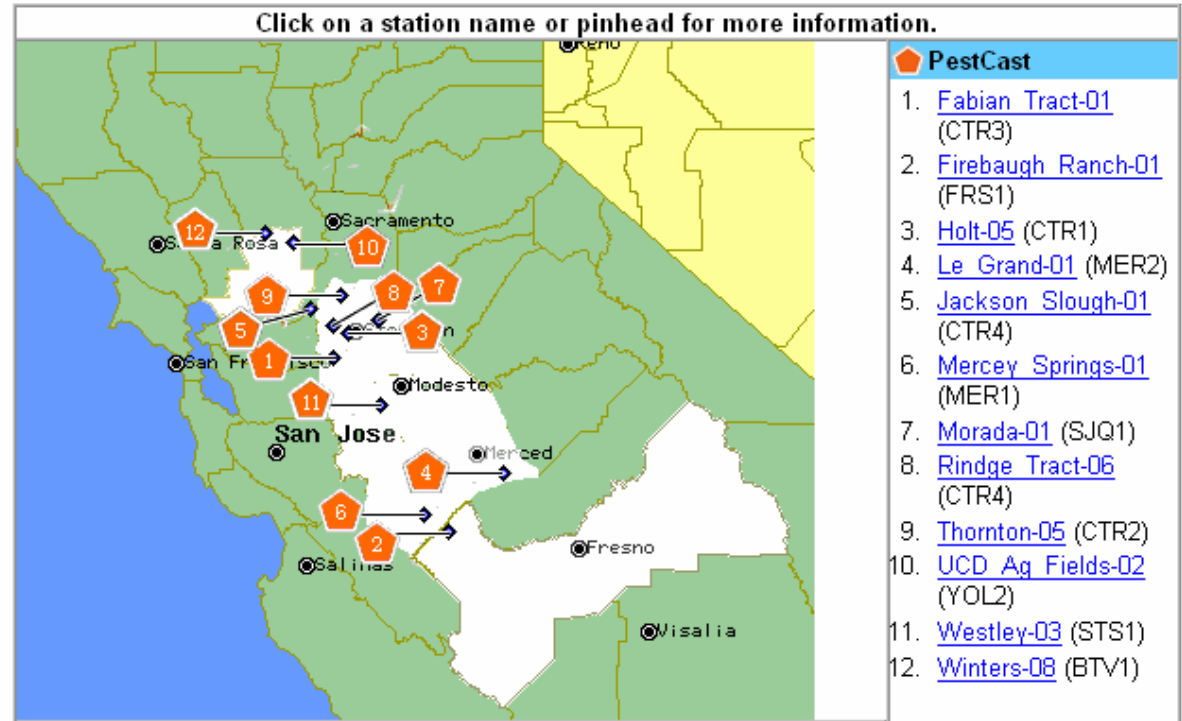
- Publications & more
- Workshops and events
- PCA exam helper
- Pesticide use and safety

Research and IPM

- Grants programs
- Funded-project results

- What's new
- In the news
- Announcements
- Site index
- Help
- Acknowledgments
- UC ANR: more topics

2006 California Tomato Network Weather Stations



- PestCast**
1. [Fabian Tract-01](#) (CTR3)
 2. [Firebaugh Ranch-01](#) (FRS1)
 3. [Holt-05](#) (CTR1)
 4. [Le Grand-01](#) (MER2)
 5. [Jackson Slough-01](#) (CTR4)
 6. [Merced Springs-01](#) (MER1)
 7. [Morada-01](#) (SJO1)
 8. [Rindge Tract-06](#) (CTR4)
 9. [Thornton-05](#) (CTR2)
 10. [UCD Ag Fields-02](#) (YOL2)
 11. [Westley-03](#) (STS1)
 12. [Winters-08](#) (BTV1)

Legend

| Networks and Stations | Map |
|--|------------|
| * Inactive | County |
| ● Automatic (daily, current data) | Water |
| ▲ TouchTone (daily, current data) | Expressway |
| ⬠ PestCast (daily & hourly, current data) | Highway |
| ▲ Climate (daily, at least 3.6 months old) | Connector |

What was different about 2007?

- Weather-based model categorized many more days as conducive to powdery mildew development – esp. **July 13 to August 27**
 - Milder temperatures – mildew is suppressed by high temperatures
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 - The weather? **Yes, very conducive**
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Acknowledgements

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Joyce Strand and Marty Martino, UC IPM

Chuck Rivara & California Tomato Research Institute
California Tomato Commission

Our cooperating growers and PCAs!!
