



## TOMATO INFO

**LOCAL FIELD NOTES:  
POWDERY MILDEW**

### LOCAL FIELD NOTES

Tomato powdery mildew severely infested a number of local fields in the past several weeks (mid August). The disease level is the highest I've seen in recent years.

Mildew is a difficult disease to manage. Infection occurs a week or so before symptoms as growth of the fungus is internal in leaves. Symptom development most closely coincides with the fungal spore reproduction. Thus, by the time the visual clue is apparent, fungal development is far advanced and ready to spread further.

Symptoms: Initially, the most common symptoms on leaves are small irregular, scattered, canary yellow-colored blotches on leaflets. As the disease progresses, the infected areas become necrotic and can cause entire leaves to desiccate. In extreme cases, plant can turn from lush green to crispy, dry leaves. With a 20-power hand lens, the longer, more slender stalks with football-shaped spores can be seen amongst the sparse tomato hairs on a leaflet. Spore production is more abundant on the underside of leaflets. At an advanced stage, mildew symptoms are not as clear.

The UC IPM website shows symptoms as well describes management strategies. <http://ucipm.ucdavis.edu/PMG/r783100411.html> The effective strobilin-type fungicides like Quadris, Cabrio, and Flint have similar modes of action while Rally can be alternated with these. Additionally, Cabrio and Quadris are active against blackmold.

In a current field test, where we are evaluating fungicides for blackmold fruit rot control, Quadris, Cabrio and other Quadris-like fungicides were effective in lowering mildew infection rate to about 20% whereas the non-treated control was above 50%. Our application likely coincided with the bulk of the infection period.

Multiple years of tests by advisor Jan Mickler in Stanislaus County indicates preventive treatments are the best.

For growers using a multiple fungicide application approach for fruit rots, the value of having the first application choice as Quadris or Cabrio could play well in preventively reducing mildew infections.

Additionally, advisor Brenna Aegerter in San Joaquin County is evaluating a weather-based predictive model for tomato powdery mildew. Her persistent effort could prove valuable for this hard-to-predict disease.

For now, a simplistic calendar approach would be to target the central harvest period from mid August to mid September as the period to monitor most closely. In July, the

pathogen is probably only building and during the late season, some defoliation may be welcomed.

### **OTHER OBSERVATIONS**

At a Fusarium wilt disease management meeting, UC Pathologist Mike Davis emphasized that sanitation was an important tool in reducing spread of the pathogen. Reducing movement of contaminated soil was emphasized, but more important was limiting movement of diseased plant tissue. While Fusarium wilt, race 3 resistant varieties are highly effective, the number of choices is limited.

Knowing this, limiting spread of diseased plant tissue into clean fields is wise. The source of spread could include harvesters, vine diverters, vine trimmers and flail-mowers. Scrape off the debris especially stem pieces.

Root knot nematode problems are increasing in a number of fields. Resistance-breaking populations are likely overcoming our nematode resistant varieties. Symptoms are clear: severe galls on roots from weak or dead plants in patches within a field. The dieback of plants would generally occur late in the plant growth stage. The nematode problem is restricted to sandy soils.

Submitted by,

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TOMATO INFO NEWSLETTER  
August 30, 2007