



# TOMATO INFO

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## PEST ACTIVITY IN LOCAL FIELDS MID MATURITY VARIETY TRIAL

### PEST MANAGEMENT NOTES IN LOCAL FIELDS

Two diseases, Verticillium wilt and tomato powdery mildew, are currently impacting our area.

Verticillium wilt is a soil-borne fungal pathogen that favors cooler temperatures. Vert has long overcome the genetic resistance of our current varieties. The growth of the fungus can partially block the plant's vascular system. The result is reduced plant vigor as well as leaf necrosis. Impact from Vert is more pronounced during the 100°F hot spells when canopy loss can become extensive. The greatest loss of plant canopy typically coincides with the fruit sizing and ripening stage.

A symptom of Verticillium wilt in tomatoes is a 'V'-notch yellowing pattern on a leaflet from the tip or the side of a blade. The yellowing turns to necrosis and extends to other leaves, usually older, lower leaves. Examining stems near the soil level by splitting branches or cutting through the vascular tissue usually reveals a tan-color discoloration that can extend up the stem for a short distance. These symptoms are more readily detected during the fruit-sizing period.

With Verticillium, the immediate concern is with sun-related fruit damage. Yield is also likely lowered as plant vigor is reduced. The flexibility to hold fruit longer in the field to schedule harvests is shortened. With sunburn damage, when coupled with dew periods, blackmold fruit rot potential increases.

An overall strategy to reduce the impact of Verticillium is not clear. Rotation to non-susceptible crops like wheat and corn may help. Variety selection appears to have a place with varying levels of susceptibility. A slightly less severe irrigation cut-off schedule may help maintain better plant vigor by attempting to reduce plant stress. This approach is speculative; and may increase fruit rots as well as lower soluble solids.

Tomato powdery mildew is readily found in our local area. While we may have been lulled into believing mildew was a lesser pathogen, be aware. We've not experienced widespread problems for many years; and in some years, the incidence has been nearly nonexistent. What to look for? The symptoms of mildew are yellow spotting on leaflets. A field description of likening mildew symptoms with 'dipping a small brush into a John Deere-yellow paint can and flinging the paint onto a plant' is a good one (except the stems nor fruit wouldn't be spotted). With a 20-power hand lens, examining the underside of the leaflet for football-shaped spores on thin stalks is confirming. Morning is a preferred time to look for spores compared to later in the day.

To treat or not? The mildew control program is largely preventive. With a lag period of about 2 weeks between infection and leaf symptoms, in many cases, treatment with a fungicide is too late. As incidence is variable from year to year, a blanket preventive control approach seems uneconomical with \$50 tomato prices. An economical plan would be to wait for early symptoms/signs of mildew before treating. The most vulnerable time is likely the middle 1/3 of the harvest schedule in our area (from early

August to early September). Earlier, there is likely less of a spore load and later, the canopy is less important as days become shorter and temperatures normally lower. In any case, if leaf drying is extensive or leaf symptoms are covering most of the canopy, mildew damage will be high, but it's too late to effectively treat. Sulfur, Quadris® and Cabrio® are available for mildew control. I am not familiar with efficacy of the later two materials. Sulfur has not been highly effective. These fungicides are preventive. They will likely require multiple applications in most years when pressure is high. Quadris and Cabrio offer other protection including blackmold control. A weather-based predictive model has been developed by UC Pathologist Mike Davis together with former graduate student Pablo Guzman with funding support from CTRI. The information can be found at: <http://www.ipm.ucdavis.edu/PMG/r783100411.html>

#### **TOMATO VARIETY TRIAL FIELD MEETING NOTICE**

Eighteen replicated and 12 observational mid maturity processing tomato varieties were transplanted April 27 in a commercial tomato field in the western Davis area. Transplants were established under harsh weather conditions: hot with strong northerly wind. Plants grew well with minimal stand loss. Vine growth was good during the season. Fruit size is exceptionally large. Yields appear to be high. Verticillium wilt is prevalent, causing canopy loss across many varieties especially during the fruit ripening stage.

**Mid Maturity Variety Evaluation Trial**  
**Grower: Jack Meek and Sons**  
**10:30 AM to noon**  
**Wednesday, August 18, 2004**  
**Western Davis, Russell Blvd, 1 mile west of CR 95**  
*(continue westward beyond UCD LTRAS)*

This will be our last variety trial showing for this season.

Transplants were supplied by Westside Transplants through Timothy, Stewart and Lekos Seed Company.

Directions: Field trial is ~6 miles west of Davis along Russell Blvd. From State Highway 113, take Covell Blvd (CR 31) exit heading west to Winters. At CR 95, turn left (southward) to Russell Blvd. At 'T' intersection, turn right heading westward for 1 mile past UCD Sustainable Ag, LTRAS facility. Continue beyond the 90° right-hand bend in the road. Turn off onto dirt road before a 90° left-hand turn. Signs will be placed along the route.

Mid maturity variety entries, J.H. Meek & Sons, west Davis, 2004.

Company	18 replicated		12 observational	
CTRI	CPL 4863-N	ϕVFFN		
Campbell			CXD 236	\$VFFN
Harris Moran			HMX 3859	\$VFFNP
			HMX 3863	\$VFFNP
Heinz	H 2401	\$VFFNP		
	H 2501	\$VFFNP		
	H 2601	\$VFFNP		
	H 5503	\$VFFNP		
	H 5803	\$VFFNP		
	<b>H 8892</b>	\$VFFN		
	<b>H 9665</b>	\$VFFNP		
Lipton	U 005	\$VFFNP	U 232	\$VFFNP
	U 941	\$VFFN	U 258	\$VFFNP
Nippon Del Monte			NDM 0098	\$VFFN
Orsetti	<b>Halley 3155</b>	\$VFF	BOS 47721	\$VFFN
			BOS 52295	\$VFFNP
			BOS 7025	\$VFFNP
Rogers	<b>La Rossa</b>	\$VFF		
Peto	PS 296	\$VFFNP	PX 345	\$VFFNP
	PS 607	\$VFFN		
Sunseeds	Sun 6119	\$VFFN	Sun 6365	\$VFFNP
	Sun 6360	\$VFFNP	Sun 6366	\$VFFNP
	Red Sky	\$VFFP		
United Genetics	UG 151	\$VFFN		

**Bold** = standards

Submitted by,

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