



TOMATO INFO

Field Notes
Field Meeting on Fusarium

FIELD NOTES

Tomato spotted wilt virus (TSWV) remains common in our area. Perhaps the incidence of spotted wilt is reasonably controlled because of heightened use of resistant varieties and from insecticide programs to control the thrips vector.

Curly top virus incidence in local fields is low and is typically scattered. In some southern San Joaquin Valley fields, levels above 30% were reported. A colleague described a Tracy-area tomato field with levels as high as 30% within spots from this beet leafhopper-vectored virus.

Powdery mildew pressure appears light to date with exceptions. But be vigilant. While sulfur dust is one of the best materials for mildew control as a preventive, the use of fungicides that have dual activity on mildew and on blackmold fruit rots will begin to have greater value as the season progresses.

Clearly, this spring has been the most days of strong northerly winds and few rainy spring days in recent memory. Impact: low bacterial speck incidence with no need for chemical treatments.

It's also interesting to see fields with buried drip irrigation systems that were supplemented with sprinkler or furrow irrigation. Clearly, supplying sufficient soil moisture for plant establishment requires water movement to be upward from the buried drip tape to reach the limited and shallow roots of those young seedlings. The best supplemental method was to use sprinklers to add water to wet perhaps to a 1-foot depth. Thereafter, the drip system could resume for the remainder of the season.

Extreme spikes of high temperatures were stressful on plants. After the late June week-long stretch of hot weather (Table 1), we started seeing many fields where plants shifted from vigorous to some level of lackluster.

Table 1. Davis weather station, daily maximum air temperature, 2013

	<u>Max temp °F</u>
7-Jun	104
8-Jun	106
28-Jun	100
29-Jun	105
30-Jun	102
1-Jul	101
2-Jul	99
3-Jul	105
4-Jul	106

Beyond the high temperature influence, I'm also seeing Fusarium wilt continuing to spread within and amongst fields. In the 3rd year of a campus-located field test where we introduced Fusarium wilt infected stem pieces in fall 2010, we observed Fusarium infected plants in the initial tomato planting the following year with progressively higher levels in each of the 3 years to date. In our third consecutive planting of tomatoes, our Fusarium infection level is now 20%.

The point is: keep from spreading Fusarium infected stem pieces on equipment. Predictable carriers are tomato harvesters and vine diverter harvest-aid equipment. While the CTRI-funded experiment did not separately compare movement of infested soil, we presume the pathogen can establish in a new field setting from imported soil or plant tissue. Once established, the pathogen is long lived.

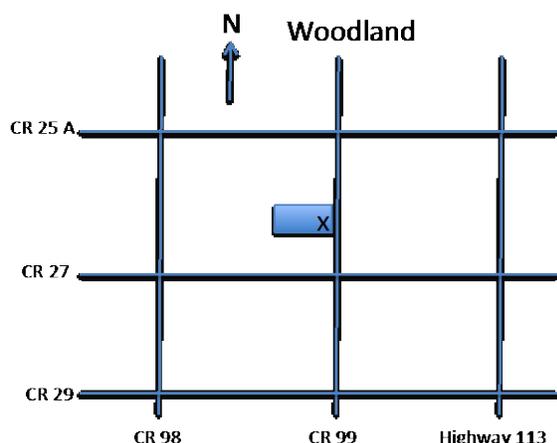
FIELD MEETING ANNOUNCEMENT

Tomato Variety Evaluation Trial in a Fusarium Infested Soil
 10:45 am to noon, **Tuesday, 13 August 2013**
 South Woodland area
 ~0.5 miles north of CR 27 x west side of County Road 99
 A light lunch will be available for the first 25 attendees.

Fifteen replicated early-maturity processing tomato varieties were transplanted on double rows per bed on April 24 in a commercial field planted to CXD 282 with Fusarium wilt race 3 resistance. Cooperator is Don Beeman along with his manager Salvador Duenas. Stand establishment and plant growth was very good. Irrigation is entirely with buried drip on 80-inch centered beds. Previous crop was tomatoes.

We expected to see Fusarium crown and root rot along with Fusarium wilt. The primary disease is Fusarium wilt. Variety differences among the susceptible lines are striking. The resistant lines include CXD 282 and a Monsanto's SV 0335.

Included will be a display and a discussion of the 3 Fusarium diseases of tomatoes we have in our area: Fusarium wilt, Fusarium crown and root rot, and Fusarium foot rot. In some fields, the yellowing of leaves normally associated with Fusarium wilt is also seen this year from plants suspected to be infested with Fusarium crown and root rot. We're working with UC Plant Pathologist Mike Davis to determine the Fusarium species. Accurate diagnostics is important, as only Fusarium wilt has a manageable remedy of resistant varieties at the present time.



Directions: From Highway 113
 -take CR 27 exit heading west 1 mile to CR 99.
 -turn north toward Woodland on CR 99 for ~0.5 mile.

Signs will be posted near the field. Parking area is within the field. Parking space is also on east side of CR 99.

BE CAREFUL. Traffic can be moving fast as well as busier because of road construction blocking CR 98 from CR 31 to 27.

Table 2. Variety evaluation trial in Fusarium wilt race 3 infested soil, Don Beeman Farms, Woodland, 2013

	variety	
1	AB 2	VFFP
2	AB 311	VFFNPtsw
3	BQ 268	VFFNP
4	CXD 282	VFFF3NP
5	DRI 319	VFFNPtsw
6	H 1175	VFFN
7	H 2401	VFFNP
8	H 5608	VFFNPtsw
9	H 8504	VFFNP
10	HM 1892	VFFNP
11	HM 7883	VFFNP
12	N 6366	VFFNP
13	N 6404	VFFNPtsw
14	N 6407	VFFNPtsw
15	SV 0335TM	VFFF3NPtsw

Submitted by,

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