University of California Cooperative Extension, Yolo County
70 Cottonwood Street, Woodland, CA 95695 530-666-8143
http://ceyolo.ucdavis.edu
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TOMATO INFO

Field Observations
Field Meeting Aug 1

Field Observations

The spread of Fusarium wilt, especially race 3, continues in both the number of affected fields and incidence within fields. Variety evaluations specific to race 3 resistant cultivars are being conducted by UC Farm Advisors in Sutter, Yolo, San Joaquin, Merced and Fresno counties. This work is supported with California Tomato Research Institute funds and with assistance from Ag Seeds and TS&L. Genetics of disease resistance is an important tool. A field meeting is planned for Monday, August 1 (details on page 2).

Sanitation is a grower-controlled tool which has near-future impact. Harvest equipment can move Fusarium-infested plant debris. Take time at least to remove plant debris from harvest equipment including vine diverters. While the pace of harvest can be hectic, the investment in cleanup will slow the spread. All of us are very aware that 'tomato' ground is being reduced by continued planting of almonds, walnuts and pistachios. Sanitation practices aren't solely targeting the Fusarium wilt pathogen, but include other pathogens, as well as nematode and weeds. Sanitation is a step towards sustainability.

Mechanical vine trimmers are locally being used more commonly. While a practice used primarily during the fruit sizing period, the mechanical wounding exposes plants to easier paths of bacterial infection, particularly under dewy and wet weather conditions. As another mechanism of moving infected plant debris, vine trimmers and perhaps vine trainers to some degree, both should be cleaned of plant debris between fields.

Recent heat waves with extended days of 100°F plus have taken a toll. A number of early-ripening-stage fields are declining with 'premature vine senescence.' Plant vigor is reduced and leaves are desiccating. With canopy cover breaking down, the level of sun-damaged fruit is increasing.

Fields under drip irrigation have not escaped vine decline. But with less disruption in irrigation during vine training and trimming, plants should fare far better during these high temperatures whereas furrow irrigated fields suffer during the critical fruit-sizing period.

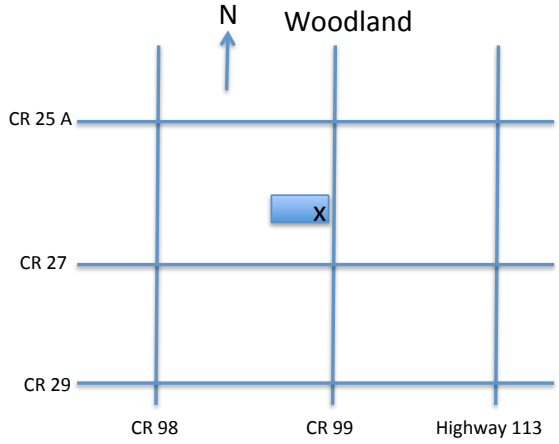
There is also good news! While Fusarium wilt, race 3 is on the rise, the incidence of Fusarium crown and root rot (*Fusarium oxysporum* f.sp. *radicis-lycopersici*) has been at a low level for the past few years. We anticipated this destructive disease to spread with major impact, but it has not. Bacterial speck activity was low this year. Spotted wilt virus, with a few exceptions, is under control (attributable perhaps to plant genetic resistance). Curly top remains at a low level in our area. To date, powdery mildew has not been reported as a problem. In part, the use of sulfur and the number of preventive sulfur dust applications likely are helping. Russet mite activity appears to be customarily sporadic. In my own travels and from conversations with local Pest Control Advisors, fruitworm activity has been earlier than expected.

FIELD MEETING ANNOUNCEMENT

Fusarium wilt, race 3 resistant variety evaluation trial
11:00 am to noon, **Monday**, **1 August 2016**
South Woodland area
~1mile north of CR 27 x west side of County Road 99
A light lunch will be available for the first 30 attendees.

Fifteen replicated mid-maturity processing tomato varieties were transplanted on double rows per 80-inch centered beds. Transplanting was on April 7th in a commercial field where the variety is BQ 141 with Fusarium wilt race 3 resistance. Cooperator is Don Beeman and his manager Salvador Duenas. Stand establishment and plant growth was very good. Irrigation is entirely with buried drip. Previous crop was wheat. Previous tomato planting was in 2014.

Plant health differences are apparent among the varieties. The predominant diseases are Fusarium wilt and Verticillium wilt. There is a moderately low incidence of Fusarium foot rot (Fusarium solani). The viruses, Tomato spotted wilt virus and Curly top virus, are scattered at a low level, especially Curly top. The susceptible line is H 8504 with only VFFN. Two tolerant lines, DRI 319 and HM 3887 are faring better.



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

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

BE CAREFUL. Traffic is sporadic on CR 99, but moves briskly. Beware.

Submitted by,

Gene Miyao
Farm Advisor, Yolo, Solano & Sacramento counties

Table 1. Fusarium wilt race 3 variety trial list
Don Beeman Farms, Woodland, 2016

	variety	resistance
1	H 8504	VFFNP susceptible
2	HM 3887	VFFNsw tolerant
3	DRI 319	VFFNPsw tolerant
4	BQ 141	VFFF3NPsw
5	BQ 142	VFFF3NPsw
6	BP 16	VFFF3NPsw
7	BP 2	VFFF3NPsw
8	SVS 8232	VFFF3NPsw
9	SVS 2493	VFFF3NPsW
10	H 1310	VFFF3NPsw
11	BQ 406	VFFF3NPsw
12	HM 58801	VFFF3Nsw
13	H 1539	VFFF3Nsw
14	N 6428	VFFF3Nsw
15	N 6429	VFFF3NswLv

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Fig 1 & 2. Fusarium wilt with typical yellowing of branches and leaves (left-side photo). Lower stem cut crosswise and exposed to show dark vascular discoloration (right-side photo).