



TOMATO INFO

Field Observations:

Curly top virus
Dusting sulfur damage
Resistance-breaking spotted wilt virus

Field Observations

I've continued to work part time, but in a much-reduced capacity. Earlier this season, it became clear that Curly top virus has become more prevalent compared to the historical norm for our area of a fraction of 1% incidence. The virus is vectored by the beet leafhopper. Fortunately, tomato is not a preferred host. Especially in the western part of the local production area, the incidence has commonly exceeded 1% including some fields with much higher levels.

Symptoms include severe stunting; dull green leaves, often with tinges of purpling; thickened-looking, down-turned leaves and may include premature ripening of fruit which do not size.

The likely scenario for next year is that the virus level returns to its normal low.



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.

Dusting sulfur

With the several rounds of extreme high temperatures (May 31 and June 17 & 18) in our lower Sacramento Valley, I've visited a couple of tomato fields where dusting sulfur appears to have caused extensive damage to foliage including some damage to stems. While many sulfur labels caution to avoid applications in high temperatures, I previously had not witnessed any appreciable damage attributed to dusting sulfur. Reinforcing that lack of concern has been many occasions where sulfur has been excessively applied to the point plants appear to be whitewashed in sulfur powder without any visual damage. Those areas of overdose are commonly at headlands or where tractor operators stop to adjust a boom hose or slow tractor speed at end of rows to begin a turn.



However, what appears to have occurred is an application during one of these extreme high temperatures with a modestly high rate and in field situations with margin soil moisture. There are likely some additional combinations of factors occurring to create the 'perfect storm'. A chemist familiar with sulfur volatility and activity likely would know about temperature effects. Is sensitivity of a variety also a factor? *(note: related 3 photos are from different fields this season).*



While I don't have a clear answer for why the problem occurred, my reasoning is only backed by limited observations for this particular year. My primary purpose is to reduce further damage to unsuspecting sulfur applicators. High temperature at the time of application was likely the primary cause. Rate could be close behind. A UC toxicologist warned me: dose is the poison. Could our ground rig dusters be directing a higher dose along the sides of the plant if 2 hoses are directed at a 45° angle to each bed?



There was some speculation of late blight. While there are some similarities to the fungal disease, late blight is not the issue

Grower Alert 2021: Resistance-breaking Tomato spotted wilt virus

UC Davis Plant pathologist Bob Gilbertson identified *Tomato spotted wilt virus* from plant samples submitted by UC Colusa/Sutter Farm Advisor Amber Vinchesi. The tomato field was north of Knights Landing and were from 3 fields all planted to varieties with Sw5 genetics to provide resistance to TSWV. The extent of this outbreak was a relatively low percentage, but it does indicate resistance has been broken and will likely spread. For the current season, most plants are well developed to the point spotted wilt likely will have limited impact on the crop. However, those late plantings where canopy is less than 50% of groundcover and remains very vegetative, protection from thrips might be needed. Most growers should wait to see some TSWV-symptomatic plants before beginning an insecticide treatment for those late developing fields. However, should a widespread breakout occur this year, be on the alert. I suspect the development will be slow for our lower Sacramento Valley region. There could be individual fields with high disease levels which will be unfortunate for the individual, but will be a signal to all others to be prepared.

View '[Grower Alert](#)' authored by Bob Gilbertson.

<https://ucanr.edu/sites/cecapitolcorridor/files/354753.pdf>

UC Fresno Farm Advisor Tom Turini has been actively evaluating insecticides and variety tolerance/susceptibility. The value of the forecasting model which UC Davis plant pathologist Neil McRoberts has developed may become more apparent in his predictions of thrips populations.

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