

2145 Wardrobe Ave. • Merced, CA 95341 • (209) 385-7403  
FAX (209) 722-8856 • [cemerced@ucdavis.edu](mailto:cemerced@ucdavis.edu) • <http://cemerced.ucdavis.edu>

## IN THIS ISSUE:

- ✓ Upcoming meetings
- ✓ Production Notes
- ✓ Bindweed
- ✓ Potassium
- ✓ CTGA meeting agenda

### Special Note:

Information on irrigation, fertilizers, and IPM is available on the Vegetable Research Information Center website at [http://vric.ucdavis.edu/veg\\_info\\_crop/tomato.htm](http://vric.ucdavis.edu/veg_info_crop/tomato.htm)

CA 2013 production: 12.11 million tons  
2014: 14.01 million

2012/2013 rainfall 8.3"  
2013/14 rainfall was only 5"  
2014/2015 ytd 4.75" (95%)

Scott Stoddard  
Farm Advisor



## Upcoming Meetings of Interest:

- 3 Feb 2015 (Tues), UCCE Classroom, 1:30 pm - 3:30 pm. 2nd metam stewardship class. Required for all growers/applicators who will use metam (metam sodium and metam potassium) this year. Contact Merced County Agriculture Commissioner for more information at 209-385-7431.
- 29 January 2015 (Thurs). N. San Joaquin Valley Processing Tomato Production meeting in conjunction with CA Tomato Growers Association annual meeting, DoubleTree Hotel, 1150 9th St, Modesto. 8:00 am to 11:00 am. Registration required for CTGA luncheon. [See back page for schedule.](#)
- 4 - 5 Feb 2015 (Weds-Thurs). CA Plant and Soil Conference and CA CCA Annual Meeting. Fresno Hotel & Conference Center, Fresno, CA Registration required, \$190 includes lunch both days. <http://calasa.ucdavis.edu>.

## General Notes:

In general, Merced County had a good year, especially for processing tomatoes. Based on PTAB reports, 2014 production was 1.16 million tons from 21,000 acres (contracted). If the acreage estimate is correct (probably actual area was higher), that would give an average yield over 55 tons/A, which is exceptional. This production is 60% higher than our 5 year average, largely a result of production moving out of Westland Irrigation District into the more favorable Exchange Contractors Irrigation Districts (Central California Irrigation District, San Luis Canal Company, Firebaugh Canal Water District, and Columbia Canal Company) in response to the drought.

The state, and the world in general, processed a lot of tomatoes last year, but because carry-in was very low at the start of 2014, processors anticipate another big season for 2015. Provided there is water, the California processing tomato industry will likely contract for another 13.8 - 14 million-ton year.

**Herbicide problems and Fusarium** were the majority of problems I observed in 2014 on tomatoes. Late season powdery mildew was problematic in a few fields, especially fresh market tomatoes. Curly top, which impacted production so much in 2013, was minor, very likely because there were so few weeds in the foothills to support the vector for this disease, the beet leafhopper. TSWV was also a minor pathogen, though TSWV infected plants could be found in most fields. Early infections are easily misdiagnosed as alfalfa mosaic.

January, 2015

The University of California, in accordance with applicable Federal and state laws and University policy, does not discriminate on the basis of race, color, national religion, sex, disability, age, medical condition (cancer related), ancestry, marital status, citizenship, sexual orientation, or status as a Vietnam-era veteran or special disabled veteran. Inquiries regarding this policy may be directed to: Affirmative Action Director, University of California, Agriculture and Natural Resources, 1111 Franklin St. 6<sup>th</sup> Floor, Oakland, CA 94607-4200 (510) 987-0097.

Other than occasional glyphosate drift, **herbicide** issues I dealt with were related to drift from the pyridine-carboxylic class, such as clopyralid (Transline) and aminopyralid (Milestone). The source is likely canals, ditch banks, ROWs, natural areas, and non-crop land that were sprayed to control weeds prior to transplanting tomatoes. Symptoms include stunting, leaf curling, and leaf crinkling. These herbicides have long plant backs, and there is little that can be done to help the impacted plants during the growing season.

**Fusarium.** Crown and Root Rot, *Fusarium 2*, and *Fusarium 3* continue to be a growing problem for the tomato industry. Fusarium crown and root rot has always occurred infrequently throughout California's production regions, but has recently become more prevalent and severe. According to Tom Turini, Fresno County farm advisor, Fusarium wilt and Fusarium crown and root rot have been detected in Fresno County this year, and varieties with resistance to Fusarium wilt Race 1 and 2 can be damaged by either of these pathogens. With the widespread use of resistant varieties, Fusarium disease in Fresno County tomatoes was a rare event prior to 2014.

*Fusarium* typically causes a yellowing of the leaves, followed by wilting and eventually, death. The symptoms frequently occur on one side of the plant first. When infected plants are cut, the interior of the stem has orange to brown discoloration, but sometimes not throughout the entire plant and it may be relatively subtle. Root and crown rot is distinguished from Fusarium wilt in tomatoes by the presence of a lesion on the stem at the soil line. Because *Fusarium* can look like *Verticillium* and sometimes even *Phytophthora*, laboratory tests should be conducted for correct diagnosis.

Race 3 was previously only a problem in the northern production areas, but has now been confirmed in multiple areas in Merced County and as far south as Firebaugh in Fresno Co. Currently, there is no resistance to Race 3 in commercial varieties, though we know that some varieties are more susceptible (H9780 is a good example). The seed companies are working towards F3 resistance, and several new lines show promise.

Additional information can be found at the UC IPM website at <http://www.ipm.ucdavis.edu/PMG/r783101011.html>

**Bindweed management.** Field bindweed cannot be controlled in tomatoes with our existing arsenal of registered herbicides, only suppressed. Research trials with myself, Tom Lanini (UC Davis), and Lynn Sosnoskie (UC Davis) have given bindweed control of 50 - 90% in processing tomatoes. The best combinations evaluated thus far:

- Glyphosate (Roundup) to emerged bindweed prior to transplanting. Lynn Sosnoskie showed significant improvement at the end of the season when this was done — overall it improves control 10 - 20%.
- Treflan PPI. Trifluralin at 2 pints per acre pre-plant incorporated has been the best single herbicide to suppress bindweed, usually providing about 50% control as compared to untreated controls. Note that Treflan has worked better on bindweed than Prowl H2O.

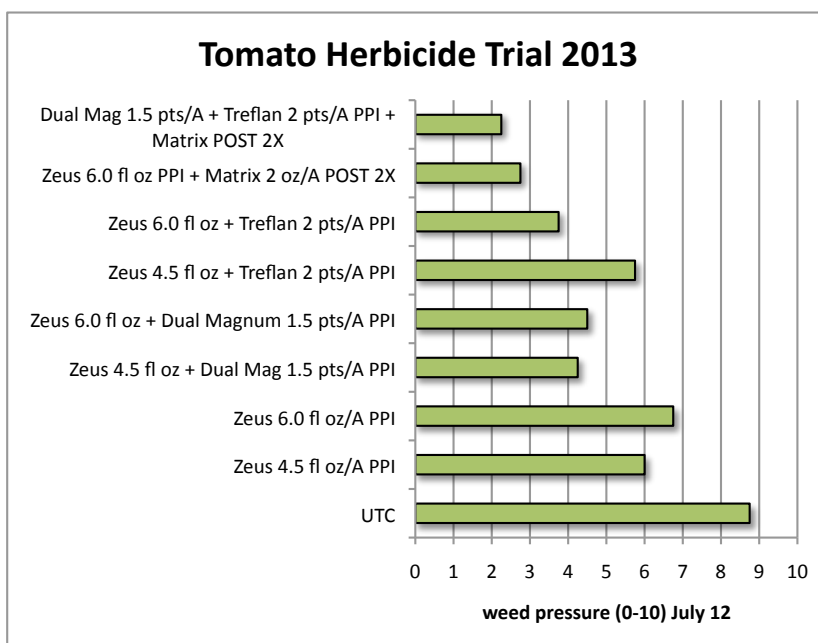


Stunted plants at the edge of a field next to a canal show symptoms of toxicity caused by synthetic auxin herbicides.



Fusarium symptoms are often one sided, causing yellow leaves on just part of a plant, though eventually the whole plant succumbs and dies.

- Matrix (rimsulfuron), 2 oz per acre, applied after transplanting just when the field bindweed is starting to reappear on the top of the beds, and again 10 - 14 later. This is therefore a POST application, and so a surfactant should be added. This double shot of Matrix has worked very well in my tests in the last 2 years, while still being within label rates (label allows maximum 4 oz/acre per year on tomatoes). Overall weed control is also improved with this program (see Figure, right). Note there will be plant-back restrictions with this use of more than 10 months with the following crops: beans, sweet corn, cotton, and cucumbers. Melons are 12 months, but wheat is only 4.



## Got Potassium?

Gene Miyao, veteran farm advisor in Yolo County, has been researching the benefits of compost in processing tomatoes and has concluded that one of the many benefits is due to potassium (K). The following excerpt is from his last newsletter.

**Self-Assessment of Potential Benefit of K:** Collect soil samples from top foot. For drip irrigated fields, sample within 6 inches of drip line to measure nutrients from the active root zone. Our limited tests indicate that soils with less than 200 ppm K (from an ammonium acetate extraction lab procedure) are candidates for a potential yield response to K applications. Soil K levels below 150 ppm are more likely to respond. A secondary indicator to the ppm K measurement is percent K on the cation exchange capacity. Fields with K levels below 2% are better candidates for a response. The combination of less than 200 ppm K coupled with less than 2% K help refine the prediction.

As there may well be high variation within a field, the few samples may not accurately reflect the K status. Thus, fertilizing with K across a dozen rows as a test strip may be a practical pilot method of assessing whether a field is K responsive. Harvest those rows separately into empty trailers and record weights relative to harvested row distance and compare to neighboring non-K fertilized rows. Net fruit weight receipts along with trailer identification from the processor and grade station can be tracked.



We've had success with sidedressing K as a preplant application in drip irrigated fields. What rate? One of our test fields had a linear response with rates from 50 to 800 lbs. of K20 per acre. A rate between 50 to 200 lbs/A seems reasonable given the uncertainty.

**Note:** If applying K through the drip line, applications should begin as early as 6 weeks after planting and repeated for 4 to 5 weeks. Applications should be before 'full-bloom' to be well ahead of fruit-sizing period when K demand is high. Preseason soil sampling appears to be a timelier and better indicator compared to in-season, plant tissue sampling. In my experience, by full bloom, tissue sampling may be an indicator of a problem, but is too late for a corrective action.

# UC Cooperative Extension Northern San Joaquin Valley Processing Tomato Meeting

*held in conjunction with*

## **The California Tomato Growers Association (CTGA) Annual Meeting**

**Thursday, January 29, 2015                      8:00 - 11:00 am**

**Modesto Double Tree Hotel  
1150 9th St, Modesto, CA, 95354  
<http://ctga.org/CTGA-News>**

### **PROGRAM**

- 7:30** Registration
- 8:00 Scott Stoddard, farm advisor, Merced & Madera Counties. Weed control, plantback, and crop phyto concerns with tomato herbicides.
- 8:20 Gene Miyao, Farm Advisor, UCCE Yolo, Solano, & Sacramento counties. Evaluation of composted poultry manure and potassium.
- 8:40 Joe Nunez, Farm Advisor, Kern County. Evaluation of nematicides for root knot nematode control in tomatoes.
- 9:00 Tom Turini, Farm Advisor, Fresno County. Stink bug management update.
- 9:20 coffee break
- 9:40 Mike Davis, CE Specialist and Professor, UC Davis Plant Pathology Dept. Update on Fusarium diseases of tomato.
- 10:00 Brenna Aegerter, Farm Advisor, UCCE San Joaquin County. Salinity management.
- 10:20 Mark Lundy, Farm Advisor, Colusa, Sutter & Yuba Counties. Exploring the potential for sensor-based fertigation scheduling in sub-surface drip-irrigated tomatoes.
- 10:40 Jeff Mitchell, Cropping Systems Specialist, UC Davis Plant Science Dept. After fifteen years of cover cropping and reduced tillage, how have soil properties changed?
- 11:05 visit vendors.
- 12:00 CTGA luncheon.

### **Continuing Education Units (CEUs) CDPR: 2.0; CCA: 3.0**

*This Cooperative Extension sponsored meeting is free and open to the public. The meeting room and refreshments are generously provided by the California Tomato Growers Association, Inc.*

*Pre-registration is required to attend the California Tomato Growers Association Annual Meeting.  
Please contact CTGA at (916) 925-0225 or [ctga@sbcglobal.net](mailto:ctga@sbcglobal.net)*

Hope to see you there



Scott Stoddard  
Farm Advisor