

# University of California

Agriculture and Natural Resources  
Cooperative Extension, Stanislaus County

## VEGETABLE VIEWS



SPRING 2018

### New Vegetable and Irrigation Advisor: Dr. Zheng Wang

**A**s the newest Vegetable and Irrigation Farm Advisor for the UC Cooperative Extension in Stanislaus County, it is an honor to have this opportunity of serving the county and the people who live in it. It was a 20-hour flight from China, my home country, to San Francisco when my family and I arrived about a month ago. Just five months ago I left the U.S.

when I finished my previous job at The Ohio State University. Re-entering the country where I have spent about ten years pursuing my graduate degrees is exciting, especially as I start a new adventure in a new state. At this moment, you may start wondering who I am and what brings me to Stanislaus County.

My name is Zheng Wang, which is a widely-used name in China. I know that many people, including my friends, colleagues, and even fast-food store cashiers pronounce my name differently. However, since each pronunciation is unique, it is clear that they are calling me. My goal of becoming an agronomist/horticulturalist was deeply impacted by my parents, which sounds like a stereotypical story told by numerous speakers on different talk shows. Nonetheless, the truth is that as the son of a family of doctors, I have witnessed and heard thousands of cases of how my parents pulled their patients back from the edge of death. Even when I was a kid, I knew the mission of a doctor was to help people live healthier. With this understanding, I knew my mission was to help produce

healthier crops so that people who eat them can live healthier.

With this in mind, I came to the U.S. ten years ago and started my route of becoming a horticulturalist. During this period, I procured my Master's and PhD degrees in Kentucky and continued my career as a post-doctoral researcher at The Ohio State University working on various vegetable crop projects.

Whether Arugula to Zucchini or Bare ground to Zone tillage, throughout my career, the happiest moment is when I deliver my research results, findings, and related knowledge to people who are not in academia but interested and in need of them in a friendly, understandable way. I want to and must be the bridge to transfer and disseminate science-based knowledge to the wide agricultural community. That is why I choose to work in the extension community, and that is why I came here.

In general, there are three major philosophies I apply to being an extension advisor. I call them PHB. First, do everything Proactively. My philosophy is that only doing my own experiments on

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**Zheng Wang, PhD**  
Vegetable and Irrigation Advisor  
zzwwang@ucanr.edu  
(209) 525-6822  
3800 Cornucopia Way  
Suite A  
Modesto, CA 95358



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at UCANR's research sites and waiting for the results and solutions to various needs is largely inefficient and impracticable. I am now working to identify and grasp the most concerning, immediate needs of the agricultural industry, growers, and other stakeholders associated with vegetable production and irrigation management as my top priority. Assessing these needs and delivering solutions will be based on multi-faceted extension approaches, including on-

farm visits, online surveys, phone calls, publications, research trials, and advisor-grower on-farm collaborations.

Secondly, I understand that the foremost factor of successful extension activities is **H**uman. In other words, my job here is to maintain and broaden the interactive relationship with the clientele effectively and efficiently. I want to be a friend of my clientele and a reliable resource whenever questions concerning vegetable operations

pop up. I can either directly help or forward them to other reliable resources for a satisfied answer.

Lastly, when I conduct extension and educational activities, I prefer the "**B**ite-sized learning style" as this is what many universities and educational

agencies are advocating and endeavoring. According to my experience, providing a small bite of important, learner-concerned information as I educate engages people the most during the learning-adopting process. In the near future, I will initiate both short- and long-term projects, from which updated and new findings, knowledge, and topics will be disseminated to the stakeholders in different educational approaches. Rather than delivering everything at once, I will choose to provide small pieces of important information during the education process in order to give people time to digest and be interested in wanting to know more, ask more, and engage more.

I hope you have a feel for who I am through this introduction. Currently, I have started assessing critical needs. Please feel free to contact me (209-525-6822; [zzwwang@ucanr.edu](mailto:zzwwang@ucanr.edu)) with questions and comments. Herein, I hope to bring more attention to the County's vegetable production!



Organic tomato field at The Ohio State University-Ohio Agricultural Research and Development Center in Wooster, Ohio, in July 2017

## The Resistance-breaking Strain of *Tomato Spotted Wilt Virus* Detected in Fresno County---A Precaution to Stanislaus Vegetable Growers

**T**omato Spotted Wilt Virus (TSWV) is a viral disease causing serious economic losses in many plants. The virus has a wide range of hosts covering many ornamentals, vegetables, weeds, and field crops, and is mainly transmitted by thrips. In Central California region, the western flower thrips is the major vector. Today, TSWV is one of the most threatening chal-

lenges faced by vegetable growers. Damages caused by TSWV on different vegetables have been reported across the nation. Currently, using TSWV-resistant varieties is considered as one of the most effective approaches to prevent the disease and as one of the important links in the entire process of integrated disease management.

A notice concerning detections of

a TSWV resistance-breaking strain (a strain that can cause a high disease incidence on resistant varieties) in three lettuce fields in the Cantua Creek area within Fresno County in March 2018 was reported by Tom Turini, Fresno County Vegetable Crops Farm Advisor. In fact, according to Turini's report, this strain was first detected in 2016 in a fresh market tomato

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## Continued: Tomato Spotted Wilt Virus

cultivar with resistance to TSWV around the Cantua Creek area. Related detection results in 2016 were published in the Journal of Plant Disease, the April 2017 issue. In 2017, the distribution of this new strain increased to the Huron area of Fresno County and affected processing and fresh market tomatoes. By the end of the 2017 growing season, tomatoes in Merced and Contra Costa Counties were also affected.

This resistance-breaking strain was detected in three consecutive years on different crops. Particularly this year, detections in lettuce may provide evidence of the overwinter ability of the strain. The situation occurring in Fresno County should bring precautions to vegetable growers, especially tomato growers, in Stanislaus

County because 1) the wide range of hosts and fast viral transmission by thrips make the disease management difficult, and 2) costly damage occurred only due to late detection or unawareness of initial symptoms. Equipping growers with basic knowledge concerning TSWV and its management is necessary. The University of California Statewide Integrated Pest Management Program (UC-IPMP) provides general information from disease symptoms to management throughout growing seasons (Check the additional resources below for details). At present, discussions about different management options are still underway, according to Turini's report. Since detection occurred in a small number of fields without being reported universally, using TSWV-resistant varieties should remain a reliable approach.



**Yellow necrotic rings, bronzing of leaves, and plant stunting are common symptoms of TSWV infections.** Photo credits: *The American Phytopathological Society and Tomato News.*

More information about this resistance-breaking strain will be provided as new updates are available. Contact Dr. Zheng Wang (209-525-6822; [zzwwang@ucanr.edu](mailto:zzwwang@ucanr.edu)), Vegetable and Irrigation Farm Advisor, or Dr. Jhalendra Rijal (209-525-6811; [jrijal@ucanr.edu](mailto:jrijal@ucanr.edu)), Area IPM Advisor, with related questions.

## Tips of Preventing TSWV for Your Vegetable Crops

1. Keep using TSWV resistance varieties. When selecting varieties, use the most current seed catalog, pay more attention to the variety disease package (disease abbreviations and resistance levels), and do not confuse TSWV with other diseases, such as ToMV (Tomato Mosaic Virus) and TMV (Tobacco Mosaic Virus) since they have similar spellings.
2. Keep accurate, comprehensive records. Avoid planting susceptible crops within or near a field known or previously reported with TSWV and/or thrips outbreaks.
3. Recognize symptoms as early as possible. Yellow necrotic rings and bronzing of young leaves are warnings of disease infections. Remove the infected plants and destroy them immediately to prevent further development.
4. End-of-season management. Remove weeds, plant residuals, and debris that can potentially serve as thrips hosts after the season is over. For fields infected by thrips and TSWV in the season, soil can be fumigated to eliminate associated population.

### Additional Resources

Tom Turini's report: [http://www.tomatonews.com/en/tomato-resistance-breaking-tswv-detected-in-2018\\_2\\_330.html](http://www.tomatonews.com/en/tomato-resistance-breaking-tswv-detected-in-2018_2_330.html).

The University of California Statewide Integrated Pest Management Program (UC-IPMP) (<http://ipm.ucanr.edu/PMG/r783102211.html>).

Tomato Spotted Wilt Virus, Vegetable MD Online, Cornell University: <http://vegetablemdonline.ppath.cornell.edu/factsheets/>

[Virus\\_SpottedWilt.htm](#).

Tomato Spotted Wilt Virus, University of Georgia: <http://tomatospottedwiltinfo.caes.uga.edu/vegacrops/tospoviruses/history.html>.

Tomato Spotted Wilt Virus, The American Phytopathological Society: <https://www.apsnet.org/edcenter/intropp/lessons/viruses/Pages/TomatoSpottedWilt.aspx>.

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Stanislaus County

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*Zheng*

Zheng Wang, Farm Advisor  
UCCE Stanislaus County

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University of California  
Cooperative Extension  
3800 Cornucopia Way, Suite A  
Modesto, CA 95358