

Virtual presentations on soilborne plant-pathogens attracted a record number of attendees.

J. Ole Becker, Department of Nematology, UC Riverside, CA

The 66th Annual Conference on Soilborne Plant Pathogens (CSPP) and the 51st California Nematology Workshop were held on March 23-24, 2021, organized as a combined virtual event because of travel and meeting restrictions related to the covid-19 pandemic. With a record number of 230 registered attendees, an average of 130-150 participants followed the live presentations on their home screens. The participants were from universities (research, cooperative extension), federal, state, and county agencies, plant-protection industry, technical service organizations, private practice and consulting companies, growers, and the general public. The meeting attracted people from all over the country, and surprisingly even a few international attendees from Australia, Mexico, Canada, Poland, and Sri Lanka. As always, the organizers gratefully acknowledge the financial support of the industry.

The organizers had offered practice sessions for the PowerPoint presentations during the previous weeks to alleviate potential technical Zoom problems. Consequently, the 35 talks went without a hitch. Among the various topics, 13 dealt with or touched on plant-parasitic nematode issues. Two invited speakers, Thomas Gordon and Becky Westerdahl, both from UC Davis, presented their career retrospectives of working with soilborne plant pathogens, specifically with *Fusarium oxysporum* and plant-parasitic nematodes, respectively.

This year, 19 students from 13 different universities took part in the Martin Stoner Memorial Student Scholarship competition. Three winners each received a \$500 award; none of the participating students were charged the CSPP registration fee. All had the opportunity to present their research. The many excellent talks predict a bright professional future for our discipline. The detailed CSPP 2021 program is attached to this report.

In the afternoon of the first day, members and guests met virtually for the California Nematology Workgroup. With 52 participants, the meeting was well attended. Chair Andreas Westphal, UC Riverside, was unanimously reelected. Invited guest speaker Mike Stanghellini, Director of Research & Regulatory Affairs, TriCal, gave a presentation entitled "Telone fumigation and the future of CA agriculture". Afterward, Howard Ferris, UC Davis, led a discussion about Nematode Analytical Labs in California. An updated lab list is posted on the Workgroup's website (https://ucanr.edu/sites/CA_Nematology/California_Diagnostic_Nematology_Laboratories/).

Bob Beede, UCCE Farm Advisor Emeritus, emphasized the need for outreach to a new generation of growers and pest control advisors who have little experience with nematodes. Antoon Ploeg, UCR, presented his ongoing research on the response of various vegetables to *Meloidogyne floridensis*, a recently discovered invasive root-knot nematode species in California. Ole Becker, UCR, reported about investigations of cyst nematode hyperparasites of the genus *Hyalorbilia* (formerly *Dactylella*).

The next California Nematology Workgroup will be held at Cal Poly Obispo during the next CSPP at the end of March 2022.

The 66th Annual Conference on Soilborne Plant Pathogens
and
The 51st California Nematology Workshop

Tuesday March 23 – Wednesday March 24, 2021

<http://soilfungus.wsu.edu>

**ALL TIMES LISTED ARE FOR THE LOS ANGELES, CALIFORNIA TIME ZONE, WHICH IS PACIFIC DAYLIGHT TIME
(PDT; UTC-7 hours)**

Tuesday March 23, 2021

- 7:30-8:00 am Practice for presenters. Presenters will be sent a separate zoom meeting link. Zoom link for the main meeting both days for everyone else:
<https://wsu.zoom.us/j/99193062090?pwd=Nkg0VTNEY2F3dDJyV3laYXAvQ1NRdz09>
Meeting ID: 991 9306 2090 and Passcode: 207198
- 8:00-8:15 am **Opening Remarks:** Tim Paulitz
- 8:15-9:00 am **Keynote Talk: Career Retrospectives of Soilborne Pathogens**
Thomas Gordon, UC Davis. *Fusarium oxysporum*: Where it comes from and what it does.
trgordon@ucdavis.edu
- 9:00-10:45 am **Session I.** Session Chair: Kelley Paugh, UC Davis. krpaugh@ucdavis.edu (six 15-minute talks below)
- Fusarium avenaceum* colonization of wild oat (*Avena fatua* L.) caryopses induces proteome-wide defense responses in the pathogen and host. Patricia Okubara, USDA-ARS.
pokubara@wsu.edu
- Evaluating resistance-based management strategies for *Fusarium falciforme*, an emerging vine decline pathogen of California processing tomato. Alyssa Brackrog, UC Davis.
albrackrog@ucdavis.edu
- Soil quantification of *Fusarium oxysporum* f. sp. *vasinfectum* race 4 and infection response in cotton cultivars. Jennifer Chagoya, Texas A&M. jcchagoya@ag.tamu.edu
- Screening cotton cultivars for resistance to Fusarium wilt disease. Jessica Dotray, Texas A&M. jessica.dotray@ag.tamu.edu
- Effect of rotation crop on survival of *Fusarium oxysporum* f. sp. *lycopersici* and development of Fusarium wilt in tomato. Kelley Paugh, UC Davis. krpaugh@ucdavis.edu
- Root-knot nematode management in a pepper-squash plasticulture system using fumigant and non-fumigant nematicides. Chinaza Nnamdi, University of Georgia.
Chinaza.Nnamdi@uga.edu
- 5 MIN LIGHTNING TALK.** Nematicide use-decline: Exploring the past to understand the present. Ole Becker, UC Riverside. obecker@ucr.edu

Brief discussion (10-minutes)

10:45-11:00 am **Break**

11:00 am-1:20 pm **Session II. STUDENT PRESENTATIONS.** Session Chair: JP Dundore-Arias, CSU Monterey Bay. jdundorearias@csumb.edu (eight **15-minute** talks below)

Tim Paulitz will announce the winners of the student competition (5 minutes).

Wheat rhizosphere bacteriome reveals genotype-specific recruitment and suppression against *Rhizoctonia solani* AG8. Christine Dilla-Ermita, Washington State University. c.ermita@wsu.edu

Identifying inoculum reservoirs for *Ceratocystis fimbriata* in sweetpotato production systems. Madison Stahr, NC State University. mnstahr@ncsu.edu

The role of irrigation in disease development and management of Macrophomina charcoal rot on strawberries. Lindsey Pedroncelli, UC Riverside. lpedr004@ucr.edu

Influence of spatial planting arrangement of winter rye cover crop on corn seedling disease and corn productivity. Sarah Kurtz, Iowa State University. smkurtz@iastate.edu

Evaluating the spatiotemporal dynamics of soilborne *Fusarium oxysporum* f. sp. *vasinfectum* race 4 inoculum. Roy Davis, Texas A&M. davi64345@tamu.edu

Comparison of egg hatching rates of *Meloidogyne* species and screening of soybean germplasm for resistance to *M. enterolobii*. Tanner Schwarz, NC State University. tschwar@ncsu.edu

Understanding soil fungus-soybean cyst nematode egg interactions through microscopic and transcriptomic examinations. Dong-gyu Kim, University of Minnesota. kimx4617@umn.edu

Pyramiding cover crop rotation of sunn hemp or rye with tillage practices for suppression of plant parasitic nematodes, fungal soilborne diseases and weeds in a bare-ground vegetable production system. Josiah Marquez, University of Georgia. Josiah.Marquez@uga.edu

5 MIN LIGHTNING TALK. Mining the mycobiome of the soybean cyst nematode for biological control. Kathryn Bushley, University of Minnesota. kbushley@umn.edu

Brief discussion (10-minutes)

3:00-5:00 pm

Meeting of the California Nematology Workgroup (separate meeting; optional).

M\Zoom meeting link:

<https://ucanr.zoom.us/j/97832916071?pwd=aTAzcEtObzY4RXMrUUt1bmhOWDZqUT09>

Meeting ID: 978 3291 6071 Passcode: 888515

Wednesday March 24, 2021

- 7:45-8:00 am Please click the meeting link so you can open up zoom and troubleshoot any issues before the event starts. We plan on starting promptly at 8 am. Presenters will be sent a separate link. Zoom link for the main meeting both days for everyone else:
<https://wsu.zoom.us/j/99193062090?pwd=Nkg0VTNEY2F3dDJyV3laYXAvQ1NRdz09>
Meeting ID: 991 9306 2090 and Passcode: 207198
- 8:00-8:45 am **Keynote Talk: Career Retrospectives of Soilborne Pathogens**
Becky Westerdaal, UC Davis. From Temik to transgenic: A nematological odyssey.
bbwesterdaal@ucdavis.edu
- 8:45-10:45 am **Session III.** Session Chair: Andreas Westphal, UC Riverside- Parlier.
andreas.westphal@ucr.edu (Seven 15-minute talks below)
- Host status of selected vegetable crops for a California *Meloidogyne floridensis* population. Antoon Ploeg, UC Riverside. antoon.ploeg@ucr.edu
- The host-specific impact of root exudates on virulence of potato cyst nematode, *Globodera pallida*. Joanna Kud, University of Idaho. jkud@uidaho.edu
- Use of remote sensing technology to evaluate the effectiveness of different fungicides to manage Phomopsis stem canker of sunflower. Ruchika Kashyap, South Dakota State University. Ruchika.Ruchika@jacks.sdstate.edu
- Effects of fumigants and biofumigants on replant disease of American ginseng (*Panax quinquefolius* L.). Amy Fang Shi, University of Guelph. fshi@uoguelph.ca
- Impact of acetaminophen on soil borne plant pathogens in soils containing *Solanum melongena*. Nathan McLain, UC Riverside. nmcla001@ucr.edu
- Novel species of actinobacteria isolated from acid forest soil with high activity against fungal phytopathogens. Magdalena Świecimska, Nicolaus Copernicus University, Toruń. magda.swiecimska@gmail.com
- Bacteria and fungi that correlate with Huanglongbing (HLB) tolerance in Florida. James Borneman, UC Riverside. borneman@ucr.edu
- 5 MIN LIGHTNING TALK.** Our fourth prune springtime without replant problems, bacterial canker or fumigants. Michael McKenry, UC Riverside emeritus. mvmckenry83@gmail.com
- Brief discussion (10-minutes)
- 10:45-11:00 am **Break**

11:00-1:15 pm

Session IV. Session Chair: Peter Henry, USDA-ARS, Salinas. peter.henry@usda.gov (eight 15-minute talks below)

Genomic diversity of *Agrobacterium tumefaciens* strains isolated from walnut orchards in California. Amisha Poret-Peterson, USDA-ARS. Amisha.poretpeterson@usda.gov

Novel and available genetics to manage soilborne pathogens using grafted vegetable plants. Frank Louws, NC State University. flouws@ncsu.edu

Biochar induced bacterial and fungal microbiome promotes plant growth and mediates systemic resistance in tomato against soilborne disease. Amit Jaiswal, Purdue University. jaiswal3@purdue.edu

Root rot mitigation in pulse crops. Carmen Murphy, Montana State University. carmenmurphy@montana.edu

The impacts of biofungicides on *Pythium* species and their associated microbiome in the soil. Emma Gachomo, UC Riverside. egachomo@ucr.edu

Leveraging comparative genomics to develop *Methylobacterium* spp. biocontrol products for *Pythium* spp. and *Fusarium virguliforme* in soy. Allison Jack, NewLeaf Symbiotics. ajack@newleafsym.com

The unknown relationship between potato mop-top virus and its soil-borne vector. Jennifer Rushton, Colorado State University. J.Rushton@colostate.edu

Soil-borne disease diagnosis and management: recent advances and future directions. Kandiah Pakeerathan, University of Jaffna. pakeerathank@univ.jfn.ac.lk

5 MIN LIGHTNING TALK. Effect of 6-Methoxy-2-benzoxazolinone on *Pythium* species and corn seedling growth and disease. Jyotsna Acharya, Iowa State University. jacharya@iastate.edu

Brief discussion (10-minutes)

The Conference on Soilborne Plant Pathogens would like to thank our corporate sponsors for their support.