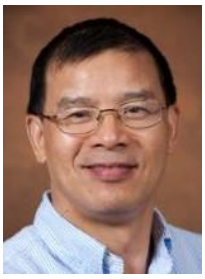
UF | IFAS Extension
UNIVERSITY of FLORIDA

In-Service Training (IST#: 32032)/CEU Roundup (FDACS CEU #: 32604)
CCA Tracking #: FL 54068 thru FL 54072

New Technology for Commercial Vegetable and Fruit Production (X)
Wednesday, February 23, 2022




FDACS CEUs				CCA CEUs	
Maximum CEUs			***5.0***		
Ag Row Crop	5.0	Limited Urban Fertilizer	5.0	***Maximum CEUs***	***5.0***
Ag Tree Crop	5.0	Private Applicator	5.0	Crop Management	1.5
Commercial Structutual Fumigation	5.0	Raw Ag Commodity Fumigation	5.0	Nutrient Management	1.0
Demo & Research	5.0	Soil & Greenhouse Fumigation	5.0	Pest Management	2.5

1. Dr. S. Ramasamy: **Sustainable crop production technologies for ethnic vegetables**
2. Dr. G. Vallad: **After 100 years of bacterial spot research, what have we learned?**
3. Dr. Z. Grabau: **Recent developments in nematode management in potato production**
4. Dr. G. D. Liu: **Why does fertigation improve fertilizer use efficiency?**
5. Dr. I. Ampatzidis: **Artificial intelligence for precision agriculture**

Instructions

1. Enroll at https://ifas-fertigators.catalog.instructure.com/courses/2022-feb---new-technology-for-commercial-crop-production. Once enrolled, you will be automatically emailed a canvas link to log into the course. Please start completing the pre-test for the first presentation.
2. If you have enrollment problems, contact **Daniel Mainwaring** at ExtensionOnline@ifas.ufl.edu
3. If you have any internet connection issues, please contact **Dennis Brown** at (352)317-1701 or dennisb@ufl.edu
4. To receive credit for attending, please complete the pre- and post-tests before and after each of the presentations, and final survey.
5. Please get connected at 9:45 am EST.

New Technology for Commercial Crop Production (X)

In-Service Training

Agenda

Wednesday, February 23, 2022

Title: **New Technology for Commercial Crop Production (X)**

Delivery Format: **Canvas/Zoom**

Dr. Wendy Mussoline: Moderator

9:45-10:00 AM	Gather, Welcome, Introductions
10:00-10:10 AM	Sign-in and Pre-test
10:10-10:20 AM	Dr. Christopher Gunter, **Program Overview**
10:20-11:10 AM	Dr. Srinivasan Ramasamy (World Vegetable Center): **Sustainable crop production technologies for ethnic vegetables**
11:10-12:00 AM	Dr. Gary Vallad: **After 100 years of bacterial spot research, what have we learned?**
12:00-1:00PM	Lunch break
1:00-1:50 AM	Dr. Zane Grabau: **Recent developments in nematode management in horicutural crops**
1:50-2:40 PM	G. David Liu: **Why does fertigation improve fertilizer use efficiency?**
2:40-3:30 PM	Dr. Ioannis Ampatzidis: **Artificial intelligence for precision agriculture**
3:30-3:45PM	Post-test and survey
3:45PM	Adjourn

Proposers:

Dr. Guodong (David) Liu
(*Primary Contact*)
Associate Professor and Extension Specialist
for Crop Nutrition
Horticultural Sciences Department

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Approved CEUs

FDACS CEUs				CCA CEUs	
Maximum CEUs			***5.0***		
Ag Row Crop	5.0	Limited Urban Fertilizer	5.0	***Maximum CEUs***	***5.0***
Ag Tree Crop	5.0	Private Applicator	5.0	Crop Management	1.5
Commercial Structutual Fumigation	5.0	Raw Ag Commodity Fumigation	5.0	Nutrient Management	1.0
Demo & Research	5.0	Soil & Greenhouse Fumigation	5.0	Pest Management	2.5

Speakers' Presentation Description

Title: Sustainable crop production technologies for Asian ethnic vegetables

Specialist: Dr. Srinivasan Ramasamy

Presentation description:

Asian ethnic vegetables include leafy brassicas (pak-choi, heading and non-heading Chinese cabbages), yard-long bean, vegetable soybean, wax gourd, bitter gourd (or bitter melon), etc. Production of these vegetables is mainly constrained by the pests and diseases. Hence, the farmers rely predominantly on the use of chemical pesticides, which pose serious threats to human and environmental health. Integrated pest management (IPM) packages based on healthy seedling production, resistant cultivars, protected cultivation, pheromone and colored sticky traps, bio-control agents and bio-pesticides offer sustainable solutions. Successful use of IPM packages in the production of Asian ethnic vegetables will be discussed.

Title: After 100 years of bacterial spot research, what have we learned?

Specialist: Dr. Gary Vallad

Presentation Description: Talk will review the history of tomato bacterial spot research with a focus on taxonomy, epidemiology, and integrated disease management.

Title: "Recent developments in nematode management in horticultural crops"

Specialist: Grabau, Zane (University of Florida)

Presentation Description: Plant-parasitic nematodes are one of the major threats to horticulture production in the Southeast. A basic understanding of the different types of plant-parasitic nematodes, how to recognize symptoms, and resources for confirming nematode infestations are foundational to nematode management. Nematode management relies on a few basic strategies including crop rotation, resistant cultivars, and nematicide application, but tools available to implement these strategies are evolving. New crops and cover crops are being explored for nematode management, and new nematicide chemistries are available.

Title: Why does fertigation improve fertilizer use efficiency?

Specialist: Dr. David Liu (University of Florida)

Presentation Description: This talk will focus on fertigation for improving nutrient use efficiency for vegetable production using potato as an example. Fertigation through

center pivot irrigation saves nitrogen fertilizer significantly. This talk will also cover problems in fertigation and solutions as well.

Title: Artificial Intelligence applications for precision agriculture

Specialist: Yiannis Ampatzidis, ABE, SWFREC, IFAS/UF

Presentation Description: This talk presents emerging technologies for precision agriculture applications. It explains how artificial intelligence, automation, and robotics can be used to enhance precision management of recourses. Examples of emerging technologies presented here include smart and variable rate sprayers for pest and disease management, robotic harvesters for fruit and vegetables, UAVs for precision nutrient management and disease detection (among others).

Speaker's Bio-Sketch

Dr. Christopher Gunter: professor and department head of Horticultural Sciences at UF. Chris received his B.S. from Purdue University, M.S. and Ph.D. from the University of Wisconsin-Madison. All the degrees are in horticulture. Dr. Gunter joined UF/IFAS in June 2021.

Dr. Srinivasan Ramasamy is the **Lead Entomologist** and the Flagship Program Leader for Safe and Sustainable Value Chains at the World Vegetable Center, Taiwan. Obtained more than 28 million USD for Research and Development projects. Coordinated research and formation of linkages among more than 20 countries in six continents (Asia, Africa, Europe, Oceania and North and South America). Partners include universities, private sector, farmer groups, NGOs, governmental and international organizations. Supervised and trained >75 students, Postdoctoral Fellows, interns, research technicians and associates from around 15 countries. Offered training to NGOs, National Agricultural Research and Extension Organizations, private sector, farmers, and farmer's groups (organized and/or involved in >25 training events in 10 countries). Published more than 170 papers including research and review articles, book chapters, field guides and Conference Proceedings to his credit.

Dr. Gary Vallad: Professor and State Extension Specialist of Plant Pathology at the University of Florida, received a B.S. in Biotechnology and Microbiology and a M.S. in Crop and Weed Science from North Dakota State University, and a Ph.D. in Plant Pathology from University of Wisconsin-Madison. Dr. Vallad's research and extension program at the Gulf Coast Research and Education Center focuses on the diagnosis and management of diseases common to vegetable and ornamental production with an emphasis on the development and implementation of integrated disease management strategies. Dr. Vallad has published over 200 research and extension articles. He currently serves as an editor for the APS Press Editorial Board, and the journals PhytoFrontiers and European Journal of Plant Pathology, and was a past editor for Phytopathology and the Journal of Plant Pathology.

Dr. Zane Grabau: (University of Florida), Assistant Professor-Nematology. As a research-extension specialist, his work focuses on nematode management and ecology in agronomic (peanut, cotton, corn, soybean) and horticulture crops (potatoes, sweetpotatoes, and carrots among others), primarily in the North Florida region. Zane received his Master's and PhD. from the University of Minnesota in Plant Pathology with thesis and dissertation work on field management of soybean cyst nematode. Applied, field-based investigations of integrated nematode management are the core of his program at the

University of Florida. He has developed strong connections with Florida growers and stakeholders by involving them in his program and extending research results to them.

Dr. G. David Liu: Associate Professor and State Extension Specialist in nutrient eco-management of vegetable and fruit crops. David received his Ph.D. in Plant Nutrition from the Chinese Academy of Agricultural Sciences, M.S. in Plant Physiology and Biochemistry, and B.S. in Crop Sciences both from Hunan Agricultural University. David's academic interests include improving nutrient and water use efficiencies for commercial crop production. David works closely with state and county faculty and growers to enhance the sustainability of agriculture and environment as a component of best management practices (BMPs).

Speakers' BioSketch

Dr. Yiannis Ampatzidis: Associate Professor in the Agricultural and Biological Engineering Department of University of Florida (UF). He leads the Precision Agriculture Engineering program at Southwest Florida Research and Education Center (SWFREC). His current research focus is on smart and digital agriculture, artificial intelligence (AI), UAVs, machine vision for plant stress and disease detection, mechatronics, automation, robotics, precision agriculture and machine systems with special interest in development, implementation and evaluation of agricultural machines and control systems for high value crops.