

In-Service Training (IST#: 32154)/CEU Roundup (FDACS CEU #: 35045) CCA CEU Tracking #: FL 54355 thru FL 54360

New Technology for Commercial Vegetable and Fruit Production (XI) Wednesday, February 22, 2023



Instructions

- 1. Enroll at <u>https://ifas-fertigators.catalog.instructure.com/courses/2023-feb---new-technology-for-commercial-crop-production-xi</u>. 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 <u>ExtensionOnline@ifas.ufl.edu</u>
- 3. If you have any internet connection issues, please contact **Dennis Brown** at (352)317-1701 or <u>dennisb@ufl.edu</u>
- 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 8:45 am EST.

New Technology for Commercial Crop Production (XI) In-Service Training

Agenda

| Wednesday, February 22, 2023 | | | | | | | |
|------------------------------|---|--|--|--|--|--|--|
| Title: | New Technology for Commercial Crop Production (X) | | | | | | |
| Delivery Format: | Canvas/Zoom | | | | | | |
| | Dr. Wendy Mussoline: Moderator | | | | | | |
| 9:00 AM: | Gather, Welcome, Introduction | | | | | | |
| 9:00-9:10 AM | Sign-in and Pre-test | | | | | | |
| 9:10-9:20 AM | Dr. Chris Gunter: Program Overview | | | | | | |
| 9:20-10:10 AM | Dr. Paul Fisher: Commercial production of ginger and turmeric | | | | | | |
| 10:10-11:00 AM | Dr. David Liu: A General Introduction to Ethnic Vegetable Crops | | | | | | |
| 11:00-11:50 AM | Dr. Jeffrey Williamson: Growing blueberry and blackberry in a | | | | | | |
| | changing climate | | | | | | |
| <u>11:50-1:00PM</u> | Lunch break | | | | | | |
| 1:00-1:50 PM | Dr. Nicholas Dufault: Managing soilborne diseases: A case study using | | | | | | |
| | Fusarium wilt of watermelon | | | | | | |
| 1:50-2:40 PM | Dr. Natalia Peres: Non-chemical alternatives for management of | | | | | | |
| | multiple diseases and fungicide resistance in strawberry | | | | | | |
| 2:40-3:30 PM | Dr. Johan Desaeger: Integrated Nematode Management Options for | | | | | | |
| | Florida | | | | | | |
| 3:30-3:50PM | Post-test and survey | | | | | | |
| 3:50PM | Adjourn | | | | | | |

Proposer:

Dr. Guodong (David) Liu

(*Primary Contact*) Associate Professor and Extension Specialist for Crop Nutrition Horticultural Sciences Department 1233 Fifield Hall, P.O. Box 110690 Gainesville, FL 32611-0690 (352)273-4814 <u>guodong@ufl.edu</u>

Approved CEUs

| FD | CCA CEUs | | | | |
|------------------------------|----------|------------------------------|-----|-----------------|------------|
| Maximum CEUs 6.0 | | | | | |
| Ag Row Crop | 6.0 | Private Applicator | 6.0 | Maximum CEUs | <i>6.0</i> |
| Ag Tree Crop | 6.0 | Commercial Lawn & Ornamental | 2.0 | Crop Management | 4.0 |
| Raw Ag Commodity Fumigation | | Limited Urban Fertilizer | 1.0 | Pest Management | 2.0 |
| Soil & Greenhouse Fumigation | 6.0 | | | | |

Presentation Description

Title: Commercial Production of Ginger and Turmeric

Specialist: Dr. Paul Fisher (University of Florida/IFAS)

Presentation description: Ginger and turmeric are interesting niche crops with high market demand as a locally produced product. UF IFAS has been working for several years to address challenges that include increasing yield through season extension, preventing root diseases, managing heat stress, and reducing labor to clean and process.

Title: A General Introduction to Ethnic Vegetable Crops

Specialist: Dr. G. David Liu (University of Florida/IFAS)

Presentation description: Ethnic vegetable crops are much more profitable than traditional vegetable crops. They are emerging and rapidly expanding in Florida. Many vegetable growers are interested in these new crops, but these crops look odd to most of Floridians. This presentation will give a general introduction to major ethnic vegetable crops grown in Florida and examples of nitrogen application to a few ethnic vegetable crops.

Title: Growing Blueberry and Blackberry in a Changing Climate

Specialist: Dr. Jeffrey Williamson (University of Florida/IFAS)

Presentation description: Florida's unique climate allows for early and/or off-season production of certain crops. Blueberry is an example of an early-season crop that has been profitable for Florida growers. Blackberry may also have potential for carefully timed production relative to the current markets. With blueberry, the mild winters in Florida allow for early-season production when supply and demand forces result in high fruit prices.

However, producing temperate crops such as blueberry and blackberry in a humid sub-tropical climate presents challenges. In Florida, winter chill accumulation can range from 0 to several hundred chill units depending on the year and location. Low-chill cultivars are usually required for commercial scale production. Several low-chill berry breeding programs (public and private) focus on developing improved cultivars for subtropical and high-altitude tropical production. In Florida, blueberry growers are likely to use either the traditional deciduous production system, or the evergreen production system. The advantages and disadvantages of each system will be discussed. A commercial blackberry industry in Florida will depend largely on development of new low-chill cultivars suitable for Florida's climate. In north Florida, some blackberry production exists based on currently available moderately low-chill cultivars. However, for most of Florida, lower-chill cultivars will be needed as the foundation of a new commercial industry for Florida.

Title: <u>Managing Soilborne Diseases: A Case Study Using Fusarium Wilt of</u> <u>Watermelon</u>

Specialist: Dr. Nicholas Dufault (University of Florida/IFAS)

Presentation description: Soilborne plant diseases have become increasing difficult to manage with the loss of traditional chemical and cultural techniques, such as, methyl-bromide and long-term crop rotation. The management of soilborne diseases starts with varietal/cultivar selection, however, it does not end there. Having an improved understanding of the pathogen is critical to knowing which variety to select as well as what other integrated management technique can be paired to limit the effects soilborne diseases. This presentation will use the disease Fusarium wilt to describe what management techniques are available when managing soilborne diseases, what are the efficacies and deficiencies of these techniques, and how to integrate these tools in and management program. By the end of this presentation, attendees will know more about the integrated management of soilborne plant diseases and how to utilize various techniques to manage them.

Title: Non-chemical Alternatives for Management of Multiple Diseases And Fungicide Resistance in Strawberry

Specialist: Dr. Natalia Peres (University of Florida/IFAS)

Presentation description: In this presentation, Dr. Peres will provide an overview of the current scenario of resistance of various strawberry pathogens to multiple fungicide classes and will present her work on non-chemical alternatives such as heat treatment using aerated steam, UVC light, cultivar resistance, etc.

Title: Integrated Nematode Management Options for Florida

Specialist: Dr. Johan Desaeger (University of Florida/IFAS)

Presentation Description: Plant-parasitic nematodes (PPN) are one of the main limiting factors to agricultural production. Especially in Florida, because of its warm, humid climate and often sandy soils, PPN can cause severe damage to many crops. Many of the traditional nematicides are facing increasing regulatory pressure which stresses the need and urgency for alternative approaches. Integrated Nematode Management (INM) is a multi-layered system that offers a more sustainable alternative for reducing the negative impact of PPN. INM employs a diversity of practices, consisting of five main pillars, crop rotation, cultivar choice, soil management, targeted control and monitoring. Each pillar contains numerous tools that prevent, reduce populations or enhance plant tolerance to nematode damage.

<mark>Speaker's Bio-Sketch</mark>

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 2021.

Dr. Wendy Mussoline has been serving as the UF/IFAS Commercial Agriculture Extension Agent for Putnam County since October 2017. Her primary responsibilities are to help commercial growers and ranchers remain economically and environmentally sustainable through science-based research. She completed her post-doctoral research with Dr. Ann Wilkie (UF Soil & Water Sciences) focused on the bioenergy potential from agricultural feedstocks, particularly sweet potato. She completed her doctorate in Environmental Engineering from the Erasmus Mundus Joint Doctorate Program (EMJD) in Europe. Her research was to maximize the energy potential and enhance degradation kinetics of the lignocellulosic feedstock, namely rice straw, in order to improve biogas production and electricity generation through anaerobic digestion.

Dr. Paul Fisher is a Professor and Floriculture Extension Specialist at the Environmental Horticulture Dept., University of Florida, in Gainesville FL. He has over 30 years' experience in applied research and farm advising for the commercial greenhouse and controlled environment industry. He is director of the Floriculture Research Alliance at University of Florida (FloricultureAlliance.org), which is a university/industry group focused on greenhouse propagation and production efficiency. Dr. Fisher is the team leader of Greenhouse Training Online which provides certificate courses for grower professional development. He is the outreach lead of CleanWateR3.org, a multi-university group solving problems in irrigation water quality and conservation. Dr. Fisher is a co-author of books on pH Management and Greenhouse Lighting and has over 350 articles on specialty horticulture crops in the trade press and scientific journals and consults for horticulture-related companies in the U.S. and internationally.

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).

Dr. Jeffrey Williamson is a professor and Extension specialist in the Horticultural Sciences Department at the University of Florida. He received is graduate degrees from Auburn University (MS) and Clemson University (PhD). His primary research interests relate to adaptation of commercial blueberry production to sub-tropical climates and reducing inputs to increase production efficiencies. More specifically, his research has included use of plant growth regulators to ameliorate plant stress from insufficient winter chilling, blueberry nitrogen nutrition, crop water use in sub-tropical blueberry production systems, blueberry rootstock development and evaluation, and evaluation of new machine harvesting technologies for fresh blueberry production. He works closely with the Florida Blueberry Growers' Association where he serves on their BOD, as liaison editor for The Blueberry News (a quarterly industry magazine) and coordinates statewide blueberry grower meetings. He teaches two undergraduate courses in deciduous fruit production. He also participates in graduate student education, Master Gardener training, and 4-H education in the general area of fruit science.

Dr. Nicholas Dufault, associate professor of plant pathology and Extension specialist for field and vegetable crops at the University of Florida, received

his graduate degrees in plant pathology at the Pennsylvania State University. During the past 10 years, he has focused on epidemiology and management of fungal pathogens in peanuts, potatoes, and watermelons. Dr. Dufault has authored 35 journal publications and more than 100 Extension media/publications in the last 10 years. He has served as a member on several editorial boards and periodically reviews extension publications on Crop Protection Network.

Dr. Natalia Peres is a Professor at the University of Florida Gulf Coast Research and Education Center (GCREC). She has an active applied research and extension program focused primarily on the management of fungal diseases of strawberry. She is also responsible for the Diagnostic Clinic at GCREC serving the strawberry, ornamental, and vegetable industries in the area. Her research and extension programs focus on the development of integrated management approaches to reduce losses to growers in Florida, but recommendations extend across regions affecting many growers, including strawberry nurseries. She has developed the widely adopted web-based Strawberry Advisory System, which provides recommendations for strawberry growers on the need for fungicide applications based on the weather conditions. Her program is internationally known and has attracted students and visiting scientists from many countries. She has authored or co-authored over 150 peer-reviewed articles in scientific journals as well as technical extension bulletins and published multiple book chapters. In addition to numerous awards from the University of Florida, she received the American Phytopathological Society (APS) William Boright Hewitt and Maybelle Ellen Ball Hewitt Award (2007), the APS Lee Hutchins Award for Excellence in Fruit Research (2014) and was recently recognized as an APS Fellow (2020).

Dr. Johan Desaeger, associate professor of plant nematology at the University of Florida, received his graduate degrees in Belgium at the University of Gent and the University of Leuven. He has worked in nematology for over 25 years, first in Kenya with the World Agroforestry

Center (ICRAF), and then in the US in industry and academia. His research and extension programs at the University of Florida are focused on developing integrated nematode management (INM) programs for central and south Florida. Crop focus includes vegetables, small fruits and other high-value and alternative crops. Dr. Desaeger has authored 60 refereed journal publications, more than 150 extension publications, more than 40 popular press articles, six book chapters and co-edited one book on INM. He is also a member of several editorial boards and professional societies.