

In-Service Training ([IST#: 31188](#))/CEU Roundup ([FDACS Program # 22891/CCA ID: FL 52806](#))

New Technology for Commercial and Fruit Vegetable Production (V)

Conference ID: 7834010

Polycom from **1308** Fifield Hall, Gainesville, Florida to 12 off-campus host sites statewide

Wednesday, February 22, 2017



Dr. Philip F. Harmon

Innovations in plant disease diagnosis at
the UF IFAS Plant Diagnostic Center

Fertilizer and water quality
management for hydroponic crops



Dr. Jeffrey G. Williamson

Advances toward mechanical harvesting of
Florida blueberries for fresh markets

Fertilizer recommendations: soil
test to application



Dr. Tripi Vashisth

Peach production in Florida: challenges
and opportunities



Dr. Neil S. Mattson
Cornell University



Dr. Kelly Morgan

Instructions for local Hosts:

1. Please download and print the **Sign-in sheet; Pre-test; Post-test; and Survey**
2. Please have all of your participants fill out or complete
 - the sign-in sheet
 - the pre-test before the first presentation starts
 - the post-test and survey after the last presentation is completed
3. Please mail the above papers including **sign-in sheet, pre-test, post-test, survey** to **David Liu at PO Box 110690, 1253 Fifield Hall, Gainesville, FL 32611-0690 TODAY**
4. Please collect and email the questions from your participants to guodong@ufl.edu and the answers will sent to you
5. Please disseminate the CEU attendance forms

All of the materials plus related publications are available online at <http://hos.ufl.edu/faculty/gdliu/service-training>

Conference information

Conference ID: 7834290

Sip connections: [7834290@128.227.8.45](tel:7834290@128.227.8.45)

Polycom connections: 128.227.8.45##7834290

IT Professional: Mr. Dennis Brown

Cell phone: (352)317-1701

If you need any help please call Dennis.

All sites need to be manually got connected at 9 am EST.

New Technology for Commercial Crop Production (V)

In-Service Training

The Conference ID: 7834290

Agenda

Wednesday, February 22, 2017

Delivery Format: a face-to-face session based in Gainesville and a supporting webinar **available statewide**

Moderator: Dr. Tatiana Sanchez

10:00 AM:	Gather, Refreshments, Welcome, Introductions
10:00-10:10 AM	Sign-in and Pre-test
10:10-11:00 AM	Dr. Philip F Harmon, Innovations in plant disease diagnosis at the UF IFAS Plant Diagnostic Center
11:00-11:50 AM	Dr. Neil S. Mattson (Cornell University), Fertilizer and water quality management for hydroponic crops
11:50-1:00 PM Lunch break	
1:00-1:50 PM	Dr. Jeffrey G Williamson, Advances toward mechanical harvesting of Florida blueberries for fresh markets
1:50-2:40 PM	Dr. Kelly Morgan, Fertilizer recommendations: soil test to application
2:40-3:30 PM	Dr. Tripti Vashisth, Peach production in Florida – Challenges and Opportunities
3:30-3:50 PM	Post-test and survey
3:50 PM	Adjourn

For local site hosts:

3:50-4:30 PM	Please mail the sign-in sheet, pre- and post-test, and survey to David Liu at 1253 Fifield Hall, PO Box 110690, Gainesville, FL 32611-0690
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Proposers:

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Available CEUs

<u>FDACS CEUs</u>	
Private Applicator and Ag Pest Control	3
Ag Row Crop Pest Control	3
Ornamental and Turf	3
Maximum	3
<u>CCA CEUs</u>	
Nutrient Management	2
Soil Management	1
Pest Management	1
Crop Management	1
Total	5

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Related publications:
14. Soil Testing for Plant-Available Nutrients—What Is It and Why Do We Use It? (http://edis.ifas.ufl.edu/ss621)
15. Soil and Tissue Testing and Interpretation for Florida Turfgrasses (http://edis.ifas.ufl.edu/ss317)
16. Conversions of Parts per Million on Soil Test Reports to Pounds per Acre (http://edis.ifas.ufl.edu/hs1229)
17. Fertilizer Recommendation Philosophies (http://edis.ifas.ufl.edu/ss623)
18. What is 4R nutrient stewardship? (http://edis.ifas.ufl.edu/hs1264)
19. Introduction to Nutrient Management of Vegetable and Agronomic Row Crops (http://edis.ifas.ufl.edu/ss638)
20. Soil and Fertilizer Management for Vegetable Production in Florida (http://edis.ifas.ufl.edu/cv101)
21. 2017 Florida Blueberry Integrated Pest Management Guide (http://edis.ifas.ufl.edu/hs380)
22. Botrytis Blossom Blight of Southern Highbush Blueberry (http://edis.ifas.ufl.edu/pp119)
23. Bacterial Wilt of Southern Highbush Blueberry Caused by Ralstonia solanacearum (http://edis.ifas.ufl.edu/pp332)

24. Fungal Gummosis in Peach (http://edis.ifas.ufl.edu/hs1265)
25. Peach Rust (http://edis.ifas.ufl.edu/hs1263)
26. Peach Scab (http://edis.ifas.ufl.edu/hs1249)
27. Alternative Opportunities for Small Farms: Peach and Nectarine Production Review (http://edis.ifas.ufl.edu/ac018)
28. Frost Protection Irrigation for Florida Peaches: Economic Considerations (http://edis.ifas.ufl.edu/fe980)
29. Florida Peach and Nectarine Varieties (http://edis.ifas.ufl.edu/mg374)
30. Florida's Commercial Blueberry Industry (http://edis.ifas.ufl.edu/ac031)
31. Florida Subtropical Peaches: Production Practices (http://edis.ifas.ufl.edu/pdffiles/HS/HS34800.pdf)
32. A Recipe for Hydroponic Success
33. Soil pH Management for Optimum Commercial Fruit Production in Florida (http://edis.ifas.ufl.edu/hs1234)
34. Mechanical Harvesting and Postharvest Storage of Two Southern Highbush Blueberry Cultivars Grafted onto Vaccinium arboreum Rootstocks
35. Sample Submission Guide for Plant Diagnostic Clinics of the Florida Plant Diagnostic Network (http://edis.ifas.ufl.edu/sr007)
36. Mosaic Disease of St. Augustinegrass Caused by Sugarcane Mosaic Virus (http://edis.ifas.ufl.edu/pp313)

Speakers' Presentation Description and Bio-Sketch

Title: Innovations in plant disease diagnosis at the UF IFAS Plant Diagnostic Center

Description: The presentation will discuss plant disease diagnosis and management from collecting a sample to interpreting the diagnosis and management recommendations. I will focus on the various technologies used to come to a diagnosis, and the methods we use to include science-based pesticide and other management recommendations for our clientele.

Specialist: Philip F. Harmon, Ph.D. (University of Florida)

Dr. Philip F. Harmon, professor of plant pathology and extension specialist. He received his doctoral degrees from Purdue University. His research interests include diseases of warm season turfgrass species and disease management for southern highbush blueberry. In addition to providing efficient and effective disease management strategies for clientele, additional research goals include selection for turfgrass and blueberry disease resistance in collaboration with plant breeding programs. His extension efforts have focused on providing rapid and accurate diagnostic services to the turfgrass, small fruits, and ornamental plant industries. Recommendations given as part of diagnostic services include practical, research based, disease management solutions. He has served as an assigning editor for *Plant Disease Management Reports* and as an associate editor of *Applied Turfgrass Science*.

Title: Fertilizer and water quality management for hydroponic crops

Description: Hydroponic crops, whether they be in deep water culture, nutrient film technique or in soilless substrates have specialized water and fertilizer requirements. Water quality guidelines and the impact of open versus closed (recirculating) irrigation systems will be discussed. In order to maintain productive and quality crops, it is important to know how to properly maintain your nutrient solution. Strategies for managing pH and EC and common recipes for formulating nutrient solutions for a variety of crops (herbs, leafy greens, tomatoes, and cucumbers) will be given. Learn to identify and correct some of the most common nutrient disorders in hydroponics.

Specialist: Mattson, Neil, Ph.D. (Cornell University)

Dr. Neil S. Mattson – Earned a Ph.D. (2007) from University of California Davis and M.S. (2002) and B.A. (2000) from the University of Minnesota. He joined the Department of Horticulture at Cornell University as an assistant professor in 2007 and became associate professor in 2012. His position is 50% research, 40% extension, and 10% teaching and he serves as a statewide greenhouse specialist. His research is focused on the physiology of both floriculture and vegetable crops in the greenhouse environment. Particular research interests include strategies to reduce greenhouse energy use, sustainable and organic fertilization practices, nutrient management, and plant abiotic stress physiology. He has authored or co-authored 42 peer review journal articles and 77 extension articles (bulletins, trade journal articles); and has given more than 180 outreach presentations to >8,000 agriculture industry members. Mattson is co-director of Cornell's Controlled Environment Agriculture group, a founding member of e-GRO Edibles and a contributing member of e-gro.org. Mattson

maintains a commercial greenhouse website at www.greenhouse.cornell.edu and a CEA website at www.cornellcea.com.

Title: Advances toward mechanical harvesting of Florida blueberries for fresh markets

Description: Florida's commercial blueberry industry is based on early-ripening berries produced for the fresh market. Labor for hand-harvesting is the single largest production cost for Florida blueberry growers and labor availability has been limited in recent years. As other production regions with inexpensive labor such as Mexico and parts of South America target Florida's production window, Florida growers must lower their production costs to remain competitive. Reducing labor inputs through mechanized harvesting could significantly reduce production costs for Florida blueberry growers. Blueberries are commonly machine harvested for the processing market, but Florida's blueberry industry is based solely on fresh berry production and machine harvesting for the fresh market presents quality problems. This presentation will review and discuss several recent and ongoing research projects that are investigating various aspects of machine harvesting blueberries for fresh markets.

Specialist: **Jeff Williamson, Ph.D.** (University of Florida)

Dr. Jeff Williamson, professor, Horticultural Sciences Department, IFAS, University of Florida, received his graduate degrees in horticulture from Auburn University and Clemson University. He has worked on multiple aspects of blueberry culture and management over the past 20 years including, PGR use, soil management systems, irrigation and fertilizer practices, and adaptation of machine harvesting practices for fresh fruit markets. During the last 10 years he has worked on several state and multi-state blueberry projects evaluating cultivar adaptability to machine harvesting, berry damage and other losses associated with machine harvesting, development and testing of a mechanical harvesting platform for small and medium-sized growers, and grafting techniques which may lead to more efficient machine harvesting of fresh blueberries. During the last 10 years, he has authored, or co-authored, 30 journal articles and numerous Extension and popular articles on temperate fruit crop production with emphasis on blueberry.

Title: Fertilizer recommendations: soil test to application

Description: Nitrogen and phosphorus are essential nutrients for plants and animals and are the limiting nutrients in aquatic environments. The correct balance of both nutrients is necessary for a healthy ecosystem; however, excessive nitrogen and/or phosphorus can cause significant water quality problems. Typically, nitrogen is the limiting nutrient in spring and surface water systems. Therefore, even modest increases in nitrogen concentrations above optimum levels can lead to algae blooms, and deplete oxygen levels causing fish kills as we experienced in south Florida in 2016. The presentation will outline the 2016 **Florida Springs and Aquifer Protection Act**, known as the “**Water Bill**”, designed to provide for the protection and restoration of outstanding Florida waters and springs. The **Department of Environmental Protection (DEP)** is required to complete **basin management action plans (BMAPs)** and the **Department of Agriculture and Consumer Services (DACs)**

implementation of **best management practices** (BMPs). The presentation will further describe waterbodies (springs, lakes or streams) that do not meet the established **Water Quality Standards** (WQSs) are deemed impaired and DEP must establish a **total maximum daily load** (TMDL) for the waterbodies. A TMDL is a scientific determination of the maximum amount of a given pollutant that can be absorbed by a waterbody and still meet WQSs. Nonpoint sources are unconfined sources that include leaching or runoff from agricultural lands or residential areas. BMAPs are one of the primary mechanisms the DEP uses to achieve TMDLs. The program will conclude with descriptions of BMPs that are designed to improve nutrient use efficiency and reduce commercial impact on water quality.

Specialist: Kelly Morgan, Ph.D. (University of Florida)

Dr. Kelly T. Morgan, professor of crop irrigation and nutrient management at the University of Florida, received his graduate degrees from the University of Florida in Soil and Water Science and Agricultural Engineering Departments. Dr. Morgan has worked with the Institute of Food and Agricultural Sciences, University of Florida for 26 years specializing in improving water and nutrient use efficiency in the sandy soils of central and south Florida. The impact of N and P movement and transformation at a field scale on water quality is of primary concern in the region. Studies to assess nutrient application rates and timing, irrigation management, and use of controlled released fertilizers and irrigation management computer applications have been implemented to increase nutrient use efficiency and minimize nutrient loss to the environment. Dr. Morgan currently leads the Florida Best Agricultural Management Practices extension program and the Florida Automated Weather Network. He has published over 65 peer reviewed journal papers, 10 book chapters, and nearly 200 other publications.

Title: Peach production in Florida: – Challenges and Opportunities

Description: This presentation will focus on multiple aspects of subtropical peach production in Florida. Peach production in Florida can often be challenging due to climatic conditions and high disease pressure. In this presentation will discuss the best peach production strategies to obtain good yield and quality fruit. Various subtopics discussed during presentation are site selection, fertilization and irrigation, plant growth regulators, and pest and disease management.

Specialist: Tripti Vashisth, Ph.D. (University of Florida)

Dr. Tripti Vashisth is assistant professor in horticultural sciences and citrus horticulture extension specialist at Citrus Research and Education Center, University of Florida. She received her PhD from University of Georgia in horticultural sciences. After her PhD, Dr. Vashisth worked as a postdoctoral associate with Mercy Olmstead focusing on peach production in Florida. Since 2014 she has been working on her current position and focuses on citrus and alternate crop production in Florida. Dr. Vashisth is involved in various citrus and peach production research projects. She has collaboration with number of Florida peach and citrus growers. She has published number of refereed publications and extension manuscripts.

IFAS IST/CEU Day – February 22, 2017

New Technology for Commercial Crop Production (V) (IST#: 31188/FDACS Program ID: 22891/CCA ID: FL 52806)

	Host Site	Phone Number	Location	FDACS/CCA CEU Provider/Contact	Email Address
1	Main campus	325-273-4814	2550 Hull Rd., Gainesville, FL 32611	Guodong Liu	guodong@ufl.edu
2	CREC	863-956-5890	700 Experiment Station Rd., Lake Alfred, FL	Jennifer Dawson	jdawson@ufl.edu
3	Lake County Extension	352-343-4101	1951 Woodlea Rd. Tavares, FL 32778	Juanita Popenoe	jpopenoe@ufl.edu
4	Miami-Dade Extension	305-248-3311	18710 SW 288 th ST, Homestead, FL 33030	Qingren Wang	qrwang@ufl.edu
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6	Volusia Co. Ext.	386-822-5778	Conference 1 UF/IFAS Extension in Volusia County 3100 E. New York Ave. Deland, Fl. 32724-6497	Joe Sowards	sowards@ufl.edu

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12	Suwannee Valley Agricultural Extension Center	386-362-1725 ext. 112	7580 CR 136, Live Oak, FL 32060-7434	Patrick A Troy	ptroy@ufl.edu
13	St. Johns Co. Ext.	904-209-0430	3125 Agriculture Center Dr, St. Augustine, FL 32092	Bonnie Wells	bcwells@ufl.edu