

SEPTEMBER 2021 | VOL. 21:07

Citrus from the Ridge to the Valley

CENTRAL FLORIDA CITRUS EXTENSION

September 2021

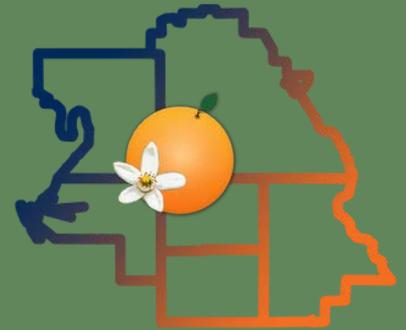
Fall is just around the corner. The official first day of fall is September 22, 2021. Inside this issue we have your fall weather outlook and the hurricane season update. Nutritional information this month focuses on the differences between the sources of phosphorus in your soil, what forms are available to the tree, and how that is interpreted in soil test results. Disease management information focuses on brown rot and how to best manage this disease in your grove.

Mark your calendars and plan to attend the 2021 Citrus Nutrition Day on October 12 from 9am-12pm. This event will be held at the Citrus Research and Education Center in Lake Alfred. This event is free to attend, but pre-registration is required. Lunch will be included. See the enclosed flyer for information on the the topics that will be discussed and the registration link. Hope to see you there!

Welcome new Highlands County Extension Agent



We are happy to welcome Lourdes Pérez Cordero as the new UF/IFAS Extension Agent for Highlands County, covering commercial citrus production. Her office is located at the UF/IFAS Extension office at 4509 George Blvd. in Sebring. Her office number is (863) 402-6540 and email address is lperezcordero@ufl.edu.



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Fall Weather Outlook

BY CHRIS OSWALT

Believe it or not, we are less than four weeks from the official beginning of autumn. The latest NOAA weather outlooks for temperature and rainfall have us looking at an increased probability of above-average temperatures for September (fig 1). The rainfall outlook (fig 2) has us looking at an equal chance or probability for above, below, or normal rainfall. In addition, the El Nino forecast is for a 60% chance of continuing in a neutral El Nino condition for the period from August to September with a 70% chance of a transition into a La Nina condition for the winter period (November to January 2022). Technically we are in a NOAA La Nina Watch condition as of the last week of August. So, in planning for this winter, La Nina conditions are, on average, usually warm and dry winters with plenty of sunshine.

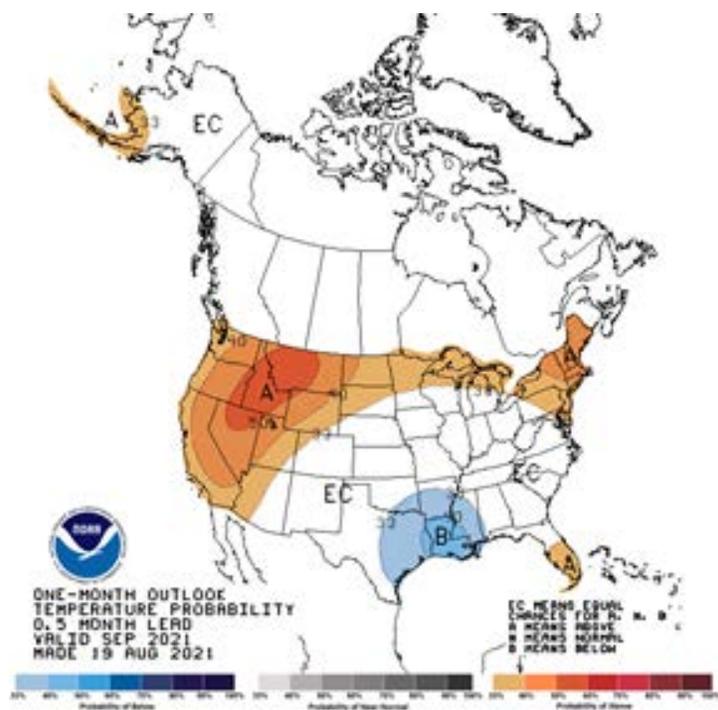


Figure 1

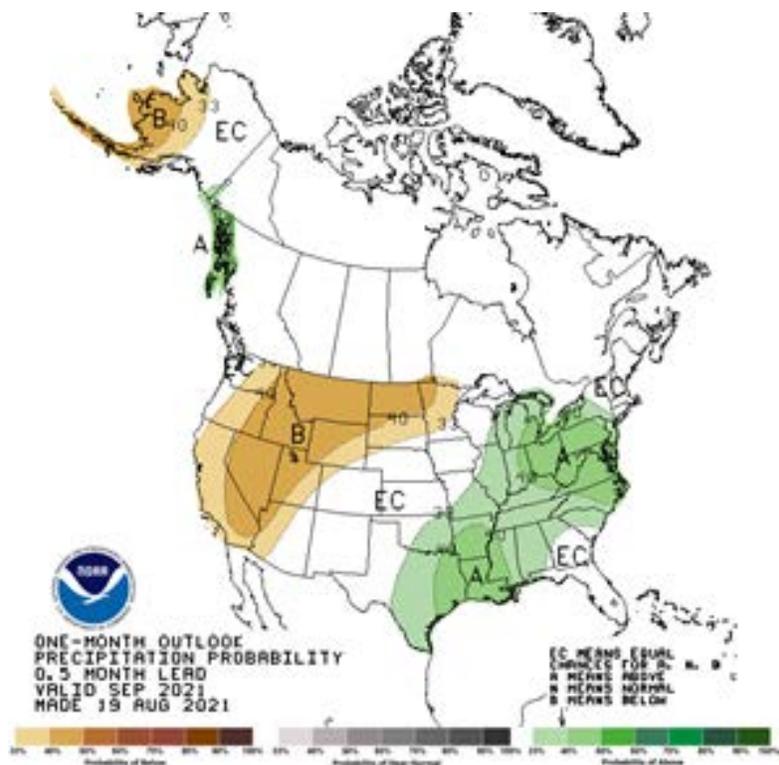


Figure 2

Hurricane Forecast Update

BY CHRIS OSWALT

Since things have been so active in the Atlantic thus far this season, it would be good to see how the experts are reacting to these developments and the effect on their previous forecasts. Recently, Hurricane Ida made landfall in Louisiana as a major hurricane. Our thoughts and prayers are with the people of Louisiana, the citrus growers, and fellow extension colleagues located in the delta area.

The following table includes the latest updated hurricane forecasts from Colorado State University and NOAA. It seems they have hedged their bets upward with conditions as they are.

2021 Atlantic Hurricane Season	Colorado State University April 2021	Colorado State University August 2021	NOAA May 2021	NOAA August 2021
Named Storms	17	18	13-20	15-21
Hurricanes	8	8	6-10	7-10
Major Hurricanes (Cat 3/4/5)	4	4	3-5	3-5





The 2021-22 Florida Citrus Production Guide

The new 2021-2022 Florida Citrus Production Guide, is available for pickup at your local UF/IFAS Extension Offices. The beginning section of the production guide covers general information that growers will find helpful, including pesticide resistance and management, PPE statements on pesticide labels, WPS reference information, plus much more. The guide is also divided into the following sections:

- Horticultural Practices
- Mites, Insects, and Nematodes
- Diseases
- Weeds
- Pesticides

Each section gives detailed information relating to the individual topics. Growers get the essential information they can use in the field, such as symptoms to look for in the grove, monitoring techniques, and the current UF/IFAS management and control recommendations.

If you would like a copy of the new Florida Citrus Production Guide, please let us know!





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Citrus Nutrition Day

October 12, 2021
9 am to 12 pm

Join us for this in-person event and hear about citrus nutrition research updates and strategies for applying nutrients in Florida citrus.

8:30 am: Registration
9:00 am: Welcome, Dr. Michael Rogers
9:15 am: Nutrition Box Update, Jamie Burrow
9:45 am: An Update on HLB Nutrition Research, Dr. Davie Kadyampakeni
10:15 am: Break
10:30 am: An Update on Micronutrients Field Trial, Dr. Tripti Vashisth
11:00 am: Strategies to Improve Nutrient Uptake Efficiency, Chris Oswalt
11:20 am: What Growers Need to Know Now to Follow BMPs and How to Use SL253 Efficiently, Dr. Kelly Morgan
12:00 pm: Lunch sponsored by Harrell's Fertilizer

UF/IFAS Citrus Research and Education Center
Ben Hill Griffin, Jr. Citrus Hall
700 Experiment Station Road
Lake Alfred, Florida

Registration Required
Pre-register by October 7, 2021 by using
the link below
<https://www.eventbrite.com/e/citrus-nutrition-day-tickets-169519576617>

For more information, contact Jamie Burrow
jdyates@ufl.edu
863-956-8648

PHOSPHORUS

Phosphorus, pH, and Soil Testing

BY CHRIS OSWALT

This month I wanted to discuss the fate of phosphorus present in Florida citrus soils, including the availability and solubility of this phosphorus and how we can interpret it in a standard soil test.

The amount of phosphorus in soil is closely related to the potential availability of this phosphorus to plants. First, we need to understand how phosphorus is held in the soil. Potentially available soil forms of phosphorus are dependent on soil pH (figure 1): some is available or soluble (fertilizer forms), some will be tied up or bound in other compounds (aluminum, iron, and calcium), and some could be in the sparingly soluble rock form. We now have three potential forms of phosphorus in the soil potentially present at any given time to some degree.

In higher pH, alkaline soils, phosphate ions react with soil calcium ions resulting in a decreased solubility of phosphorus (a process called phosphorus fixation). Due to the rapid phosphorus fixation at high soil pH, applications of soluble phosphorus in these soils will only be available to plants for a short time. In this situation lowering the soil pH will decrease the amount of fixed phosphorus, resulting in additional previously insoluble phosphorus becoming available.

Conversely, in acidic soils with lower soil pH, phosphorus faces a similar issue, but through a different mechanism. Under lower soil pH levels, soluble phosphorus will bind with iron, aluminum, and manganese ions to form hydroxy phosphates, which are insoluble and unavailable to the plant. In this situation, raising the soil pH to 6.5 will disassociate these ions, resulting in phosphorus availability.

Another source of phosphorus in the soil (not readily plant-available) is relatively insoluble phosphate rock that is predominately mined in and around the central Florida citrus production region. These mined phosphate rock deposits include carbonate fluorapatite (francolite), quartz, dolomite, and clay materials. This francolite material is the form mined in Florida and used in the production of phosphate fertilizers. This phosphate rock is processed further using acid to form soluble phosphate fertilizers.

The availability and solubility of phosphorus are closely related to pH, and at about the 6.5 pH level, phosphorus is most readily available. When pH levels vary (above or below) from this value, some of soil phosphorus can become insoluble and not available for plant uptake.



PHOSPHORUS

Phosphorus, pH, and Soil Testing

BY CHRIS OSWALT

In a soil test analysis, these factors can be the source of variability in determining how much of the soil phosphorus is soluble and available for citrus root uptake. Soil testing methods vary and try to determine the amount of phosphorus available in a soil sample. Actual plant response curves or extrapolated response data then try to approximate the plant available amount of soil phosphorus. Therefore, depending on the extraction methods, one could get different levels of extractable phosphorus. The actual amount of soil phosphorus reported by a specific soil test should be considered, along with the soil pH and soil conditions from which the sample was collected. The review of this information should be in concert with leaf tissue analysis for phosphorus. Thus, a grower can determine over time if the soil phosphorus level provides enough phosphorus to the tree or if the amount in the soil is not readily available for plant uptake. This information will allow growers to manage phosphorus fertilization better.

See "Nutrition of Florida Citrus Trees" SL 253 for more information on interpreting soil phosphorus analysis <https://edis.ifas.ufl.edu/pdf%5CSS%5CSS47800.pdf>.



Figure 1

Restricted Use Pesticide Licenses

BY AJIA PAOLILLO

The Florida Department of Agriculture and Consumer Services (FDACS) regulates and issues the Restricted Use Pesticide licenses here in Florida. In last month's issue of the newsletter, we had information on the new updated website address to register for exams and obtain vouchers <https://aesecomm.fdacs.gov/Default.aspx>

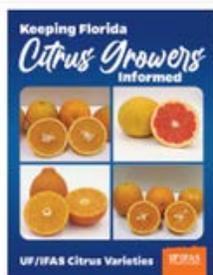
Starting on September 13, 2021, there will be another important change in this process. In the past one voucher number could be used for multiple exams (core, private, ag tree crop, etc.) and attempts. Now, users will be required to obtain a separate voucher number for each exam and each attempt at the exam. If applying for a new license or recertifying through examination for a renewal, you will need to visit the above website. Here you will fill in your information or confirm information for recertification. This is considered your application. With this new change, you can receive up to 5 voucher numbers for each application. Meaning you only have to put in your information once to receive up to 5 vouchers for the various exams you need to take or any subsequent attempts at passing these exams. If you fail an exam you will need another voucher number. It is very important to print out or write down all of your voucher numbers. These identify you on exam day and we cannot look up your voucher numbers. Remember, after registering for your exams(s), schedule your exam date and time online at a UF/IFAS Extension office <https://pesticideexam.ifas.ufl.edu/>.

If you have any questions or run into problems when registering for the exams or scheduling, please contact us or your local UF/IFAS Extension office.

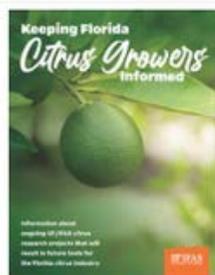
2021 Citrus Expo Presentations and Resources

Last month the 2021 Citrus Expo was held in person at the Lee Civic Center in Ft. Myers. The first-day educational seminars offered growers updates on citrus research projects. These presentations have now been posted on the UF/IFAS Citrus Research and Education Center's webpage and are available to view as a PDF document <https://crec.ifas.ufl.edu/citrus-research/presentations/citrus-expo-2021/>.

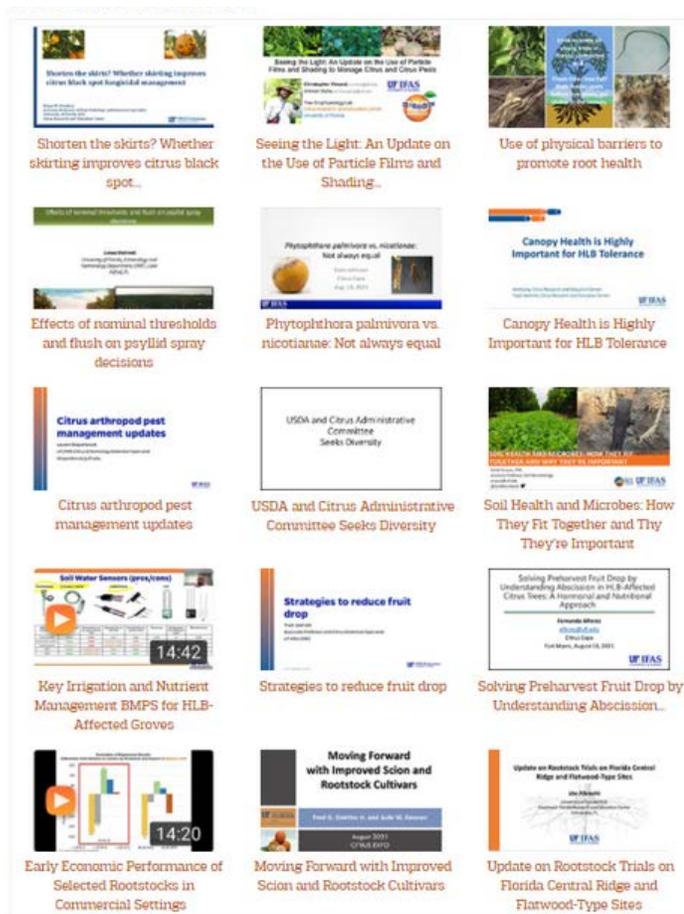
Here you can also find videos of the posters presented in the UF/IFAS booth, along with other short videos on research trials. There are two booklets featured that were available at the booth and are now online. One booklet contains information on the scion varieties released by the UF/IFAS citrus breeding program. The other booklet gives growers summaries on current research trials.



Citrus Varieties



Research Summaries



Managing Brown Rot

BY AJIA PAOLILLO

As we move into September, it is essential to remember that brown rot can impact yield, especially early varieties. Brown rot is caused by either *Phytophthora nicotianae* or *Phytophthora palmivora*. These species are in groves across the state, with *P. nicotianae* being more prevalent on the Ridge and *P. palmivora* in higher populations on Flatwoods soils. These are soil-borne pathogens that can be moved into the canopy by rain splash. Once the pathogen comes in contact with the fruit, it has the potential to cause brown rot if the fruit is not protected. The two *Phytophthora* species move differently in the canopy, with *P. nicotianae* typically affecting fruit on the lower part of the canopy. *P. palmivora* can essentially move up through the canopy by rain splash from infected fruit to healthy fruit.

Fruit drop can also contribute to the sources of inoculum in the grove. Once fruit hits the ground, it can become infected with *P. palmivora*. This rotting fruit gets splashed with rain which can reach the lower hanging fruit in the canopy. Unfortunately, fruit drop late in the season due to HLB is difficult to avoid and can contribute to this problem. However, low-hanging fruit may be knocked off the tree during the growing season by equipment such as herbicide booms. Cultural practices such as skirting can help by raising the height of the lower-level branches to allow for equipment and reduce fruit drop. This spatial difference can also lessen the inoculum in the tree coming from the soil or infected fallen fruit because the lower hanging fruit is farther from the ground.

Brown rot tends to be more of an issue with early varieties but can still occur with midseason and late varieties. Brown rot symptoms can occur between mid-August through October. Inoculation of healthy developing fruit can occur as early as July and is not easy to detect until fruit starts to color. If you have had brown rot in the past, chances are you have already applied a preventative application of a fungicide in late July. The products listed in the 2021-22 Florida Citrus Production Guide are Aliette, Phostrol, and ProPhyt, which are systemic and offer fruit protection for 60-90 days. Copper fungicides applied in August can offer 45-60 days of protection. As we move into the late summer and early fall, the amount of rainfall we have can impact the incidence of brown rot you may experience in your grove. If there is more rain than usual, there is a greater chance of brown rot occurring. Monitor your grove to determine if additional chemical controls may be needed in October due to rainfall and increasing incidences of brown rot. You may choose to apply the systemic fungicides mentioned earlier at half the label rate or copper fungicides. Always read the label of the product you choose to account for pre-harvest intervals during this time.

For more information on *Phytophthora* spp. and brown rot, please refer to the 2021-2022 Florida Citrus Production Guide <https://edis.ifas.ufl.edu/publication/CG101>



Image Credit: Florida Citrus Diagnostic Guide



Greasy Spot Rind Blotch

Citrus fruit regreening continues to reduce fresh packouts for some Florida blocks later in the season but is also now impacting packouts as early as December.

The symptoms are consistent with greasy spot (<https://edis.ifas.ufl.edu/pdffiles/PP/PP27000.pdf>; *Mycosphaerella citri*) but a direct causal relationship has not been proven and so the “greasy green” disorder (as some call it) may also be related to other possible factors such as variety, nutrient application method/amount, phytotoxicity from different tank mixes, field temperatures, etc. We need your input concerning conditions, cultivars, current practices, and any other observations you might have related to this disorder.

We are asking Florida fresh citrus growers and packers to complete a brief, anonymous survey related to their experiences with the disorder this past season. This will help us design research experiments next season (if funded) to understand the causal factor(s) and develop strategies to control this disorder.

Access the survey at: https://ufl.qualtrics.com/jfe/form/SV_etVlhE4eLqO49Tg



Please contact Dr. Mark Ritenour if you experience any problems or have questions about the survey.

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Syngenta Citrus Internships- Summer 2022

Company Overview

Syngenta is a leading agriculture company helping to improve global food security by enabling millions of farmers to make better use of available resources. Through world class science and innovative crop solutions, our 28,000 people in over 90 countries are working to transform how crops are grown. We are committed to rescuing land from degradation, enhancing biodiversity and revitalizing rural communities. There's never been a more important time to join Syngenta.

Program Overview

When you are a citrus intern with Syngenta, you will gain hands-on experience in the ag industry. This is a paid internship that also provides a vehicle for work use. You will be assigned to a mentor and a territory for your summer project. You will gain experience with territory management along with pest and disease identification. The internship presents opportunities to gain sales and marketing experience, exposure to the citrus industry, as well as opportunities within Syngenta Crop Protection.

Intern Focus

- Pest scouting support (miticides/insecticides)
 - Minecto Pro, Voliam Flexi, Agri-Flex, & Agri-Mek
- Soil sampling support (fungicides)
 - Ridomil & Orondis

Qualifications

- Seeking future employment in the Florida Agriculture Industry.
- Basic familiarity with production agriculture.
- Basic familiarity with pest, disease, and weed control.
- Basic computer skills.
- Willingness to work outdoors.
- Self motivated, detail oriented, honest, and personable.
- Ability to relocate to or originally from one of the following counties; Polk, Highlands, Hardee, Desoto, Hendry, Collier, Lee, Okeechobee, Martin, Osceola, St. Lucie, or Indian River.
- Sophomore or Junior level (Seniors will be considered).
- Satisfactory results of a pre-employment background check, drug test, and driving record evaluation.

Zach Langford

Florida Citrus Internship Coordinator
Syngenta Retail Rep
407-212-5631

zach.langford@syngenta.com



Chad Warrick

Syngenta Retail Rep
830-832-5269

chad.warrick@syngenta.com



Follow QR Code or link to apply:

<https://www.surveymonkey.com/r/SyngentaCitrusIntern>

Core Exam Review Class

September 30, 2021
8 am to 12 pm

UF/IFAS DeSoto County Extension
2150 NE Roan St
Arcadia, FL 33426

Cost: \$10 class
\$36 class & study guide

This review class will discuss the required information for the Core exam for Restricted Use Pesticide Licenses in Florida.

Registration

Advanced registration is required through Eventbrite

<https://bit.ly/3kUCq7m>

Class size is limited to 6 people.

4 Core CEUs for Restricted Use Pesticide license holders are available for this class

For more information or to schedule your exam, please contact
Ajia Paolillo, UF/IFAs Multi-County Citrus Agent
(863) 251-4763 ajiacunningham@ufl.edu

2021 Fall Food Safety Events



Produce Safety
ALLIANCE



Produce Safety Alliance Grower Training

A one-day course for fruit and vegetable growers and packers who fall under FSMA's Produce Safety Rule.

- 9/21/21– Ft. Pierce PSA Training
<https://psa092121.eventbrite.com>
- 10/19/21 Naples PSA Training
<https://psa101921.eventbrite.com>
- 11/10/21– Monticello PSA Training
<https://psa101921.eventbrite.com>
- 11/17/21– Belle Glade PSA Training
<https://bit.ly/3fxotdx>

Remote- Produce Safety Alliance Grower Training

A three-day, three-hour virtual course for fruit and vegetable growers and packers who fall under FSMA's Produce Safety Rule.

- 8/30-9/2/21– Remote PSA Training
Sold Out
- 11/30-12/2/21– Remote PSA Training
<https://psa113021.eventbrite.com>

Bridging the GAPS: Approaches for Treating Water On-Farm

Join this one-day course with extension specialists across the Southeast to learn about approaches for treating water on-farm and implementing systems to meet requirements of the Produce Safety Rule.

- 9/22/21- Fort Pierce BTG Training
<https://bridgingthegaps092221.eventbrite.com>



Preventive Controls for Human Food- Preventive Controls Qualified Individual (PCQI) Training

This three-day course for those covered under FSMA's Preventive Controls for Human Food Rule

- 11/2-11/4/21–Lake Alfred
Contact: taylorlangford@ufl.edu for registration.

Questions?

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Katelynn Stull
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To stay up to date with upcoming food safety events visit:

<https://www.eventbrite.com/organizations/events>

Eventbrite registration questions? Contact Sarah McCoy at sarahmccoy@ufl.edu

2021

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