MAY/JUNE 2023 | VOL.23:05

Citrus from the Ridge to the Valley

CENTRAL FLORIDA CITRUS EXTENSION

May/June 2023

Hurricane season is just around the corner, and the first seasonal hurricane forecast has been released. Colorado State University's Tropical Weather and Climate Research hurricane forecast is the most widely known. Next up would be that of the National Oceanic and Atmospheric Administration's National Hurricane Center, which will have that one in the next issue of our newsletter. Hurricane season begins next week (May 15) and runs through November 30. For more information on the hurricane forecast, please read the article about the latest forecast and what it may mean for us here in central Florida.

Spring will give way to summer here in about 6 weeks, and we look forward to that more consistent summer rainfall providing a much-needed boost to citrus tree health. With all the antimicrobial trunk injections done thus far, these summer rains will hopefully get the trees going back in a positive direction.

Several grower meetings are coming up in the next month or so, and the list is as follows:
May 17, 2023, Polk County Citrus Growers OJ Break
May 24, 2023, Online Citrus Seminar
May 25, 2023, Citrus Production School
June 21, 2023, Polk County Citrus Grower Forum

There is information on registration, CEUs, locations, etc., for these meetings included in this newsletter.

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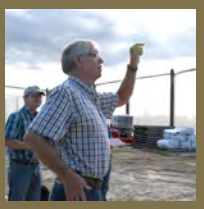

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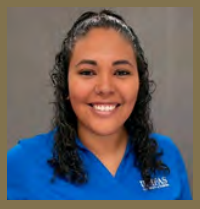


May 2023 OJ Break

UF | IFAS Extension
UNIVERSITY of FLORIDA

May 17, 2023
10:30 am to 12:00 pm

UF/IFAS Citrus Research & Education Center
BHG Citrus Hall
700 Experiment Station Rd
Lake Alfred, FL

Antimicrobials for Citrus Greening Disease and Vector Management and Citrus Black Spot - What We Need to Know

Dr. Kristen Pelz-Stelinski and Dr. Megan Dewdney from the UF/IFAS Citrus Research and Education Center, will discussing these important topics, especially with citrus black spot with the recent Polk County location.

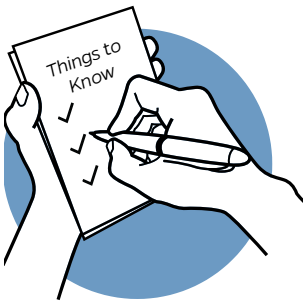
10:30 am	**Check-in, BHG Citrus Hall**
10:35 am	**Antimicrobials for Citrus Greening Disease and Vector Management**
11:00 am	**Citrus Black Spot - What We Need to Know**
12:00 pm	**Lunch**

Pre-registration is required by Friday May 12, 2023 using Eventbrite:

https://May2023OJBreak.eventbrite.com

Or Contact Joy Spencer to register 863-519-1041

1.5 RUP CEU in Private, Ag Tree, Ag Row, and Demo & Research will be available.
1.5 Pest Management Certified Crop Advisor CEU's will be available.



Please Take Note...

2023 Florida Citrus Growers' Institute Presentations Now Posted Online

The 2023 Florida Citrus Growers' Institute was held on April 4th in Avon Park at the South Florida State College campus. The educational presentations were recorded and are now available online at the citrus agent's website: https://citrusagents.ifas.ufl.edu/archived-presentations/2023/ . You may also access archived presentations from past years Institute programs on the citrus agent's website. So, if you missed the presentations or would just like to review the information, please click on the videos and view the slides.

Thank you again to all the speakers, sponsors, and growers that made the 2023 Florida Citrus Growers' Institute possible!

USDA Emergency Conservation Program Application Deadline Extended

BY AJIA PAOLILLO

The US Department of Agriculture (USDA) has extended the window for application until **May 22, 2023** for the Emergency Conservation Program (ECP) for damages associated with Hurricane Ian in September 2022. The ECP can provide producers up to 75% of the cost to restore their farm from hurricane damages. As stated in the USDA news release from March 27, 2023:

"The approved ECP practices under this authorization for Hurricane Ian recovery include:

- Removing debris from farmland;
- Grading, shaping, releveling, or similar measures:
- Replacing or repairing permanent fences; and
- Restoring conservation structures and other installations"

For more information please click here to view the full news release https://www.fsa.usda.gov/state-offices/Florida/news-releases/2023/usda-extends-deadline-for-emergency-conservation-program-applications-from-florida-producers-in-28-counties?utm_medium=email&utm_source=govdelivery and contact your Farm Service Agency (FSA)representative.

Upcoming Events

Online Citrus Seminar - May 24, 2023

Coordinator: Dr. Mongi Zekri, Multi-County Citrus Extension Agent, UF-IFAS, SW Florida
Date & time: Wednesday, May 24, 2023, 11:00 AM – 12:00 Noon **Location:** Immokalee IFAS Center
Title: Exploring citrus management practices to impact soil health
Speaker: Dr. Sarah Strauss, Assistant Professor in Soil Microbiology, UF-IFAS Southwest Florida Research and Education Center, Immokalee.

This presentation will discuss the concept of soil health, including how soil microbes play a role in it and how we might measure it. The presentation will also discuss management practices including cover crops and compost that can be used to potentially improve soil health and will examine questions we still have about long-term impacts and optimization of these practices.

To register and attend via Zoom, here is the Zoom link:
https://ufl.zoom.us/j/95657599543?pwd=THdoRXJudWJISXZBbG1QRC9tUDMwZz09
After registering, you will receive a confirmation email containing information about joining the Zoom meeting.
For additional information please contact Dr. Mongi Zekri maz@ufl.edu
1 CEU for pesticide license renewal and 1 CEU for certified crop advisors

Citrus Production School - May 25, 2023

We will be having another Citrus Production School seminar this month on May 25, 2023. The event will be held in Arcadia at the Turner Agri-Civic Center Exhibit Hall from 10am - 12pm. During the first half of the seminar, Dr. Ramadas Kannisery from the UF/IFAS SWREC will be discussing some updated strategies to reduce weed growth and improve year-long weed management in young and mature groves. The second half of the seminar will feature Mr. David Royal from the Nature Conservancy discussing how to effectively implement Best Management Practices and utilizing soil moisture sensors in citrus groves to conserve water and resources. Please see the flyer on the next page for more information.

Please register for this event through Eventbrite by Tuesday May 23, 2023: https://citrusprodschoolmay2023.eventbrite.com
There is no cost to attend and lunch will be provided.

2 RUP CEUs in Private, Ag Tree, Ag Row, and Demon & Research will be available.
CEUs for Certified Crop Advisors have been requested.

If you have any questions or need more information, please contact Ajia Paolillo ajiacunningham@ufl.edu

Polk County Citrus Grower Forum - June 21, 2023

BY CHRIS OSWALT

I wanted to reach out and invite area citrus growers to a citrus grower forum to be held on Wednesday, June 21, 2023. It will begin at 11:00 a.m. at BHG Citrus Hall at the UF/IFAS Citrus Research and Education Center in Lake Alfred. As a reminder our grower forum format will be a little different than our traditional Citrus Grower OJ Break meetings. We are planning on inviting individuals and manufacturers who have had some different experiences in dealing with HLB. Some of these may involve practices and or products they feel would be worth sharing with the larger grower community. In this format the products and discussions may or may not reflect a recommendation or an endorsement of a product or service by the University of Florida. Please keep this in mind as you participate in these grower forums. We want to do this in an effort to expand and share the current knowledge and experiences growers are having in dealing with HLB.

For the June 2023 Polk County Citrus Grower Forum we have Dr. Brian Thompson, CEO from Elemental Enzymes will be here to discuss their citrus peptide branded as Vismax. So please bring any questions you may have about this new technology. Lunch will be provided by Nutrien Ag Solutions. Event flyer and a registration information will be sent out next month.

CITRUS PRODUCTION SCHOOL

UF IFAS Extension UNIVERSITY of FLORIDA

May 25, 2023

10:00am - 12:00pm

During the first half of the seminar, Dr. Ramadas Kannisery from theUF/IFAS SWREC will be discussing some updated strategies to reduce weed growth and improve year-long weed management in young and mature groves. The second half of the seminar will feature Mr. David Royal from The Nature Conservancy discussing how to effectively implement Best Management Practices and utilizing soil moisture sensors in citrus groves to conserve water and resources.

Location:

Turner Agri-Civic Center Exhibit Hall
2260 NE Roan St
Arcadia, FL 34266

Lunch will be provided and there is no cost for this class, however pre-registration is required by Tuesday May 23, 2023 using this Eventbrite link:
https://citrusprodschoolmay2023.eventbrite.com/

You may also register by contacting: Ajia Paolillo
UF/IFAS Extension Multi-County Citrus Agent
ajiacunningham@ufl.edu or 863-251-4763

2 CEUs for Restricted Use Pesticide License holders will be available in Private, Ag Tree, Ag Row, and Demo & Reasearch

CEUs for Certified Crop Advisors have been requested

2023 May/June Weather Outlook

BY CHRIS OSWALT

The National Oceanic and Atmospheric Administration (NOAA) has recently published its latest weather outlook for the May/June/July 2023, and the outlook for temperature and rainfall is particularly noteworthy. According to the outlook, there is a higher probability of above-normal temperatures during this period (as indicated in figure 1). This means that we may expect to experience warmer temperatures compared to what is typically seen during the May/June/July. The outlook for rainfall (depicted in figure 2) also presents a different picture, with a leaning to above-normal rainfall. This suggests that we may receive about normal amounts of rainfall that would be typical for May/June/July.

The El Nino Southern Oscillation (ENSO) forecast also plays a crucial role in shaping the weather outlook for this period. The forecast indicates that La Nina conditions have ended. We are currently under ENSO-neutral conditions. The forecast is for there to be a 62% chance of El Niño developing during May to July 2023.

In conclusion, the latest NOAA weather outlook for the May to July 2023 period suggests that we may experience warmer temperatures and above rainfall than what is typical for the period although the U.S. Monthly Drought Outlook has dry conditions abating for peninsular Florida for the May to July time period.

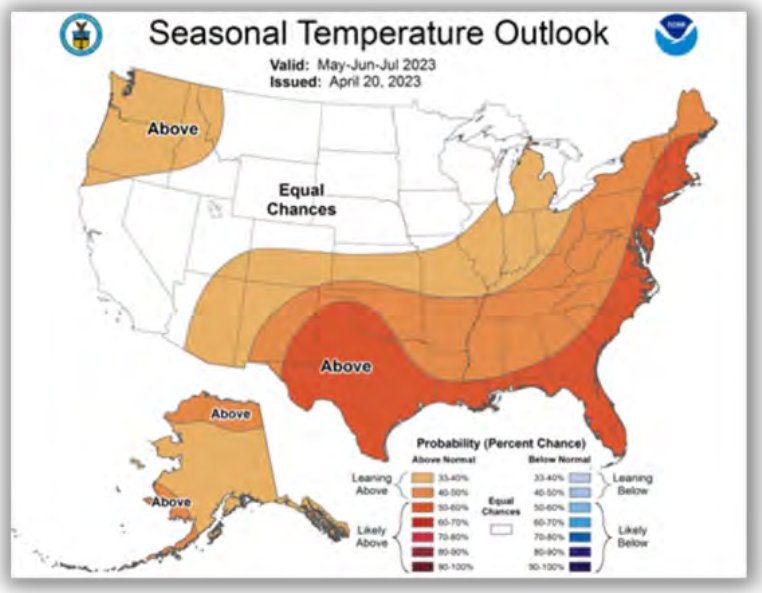


Figure 1. Summer 2023 temperature outlook

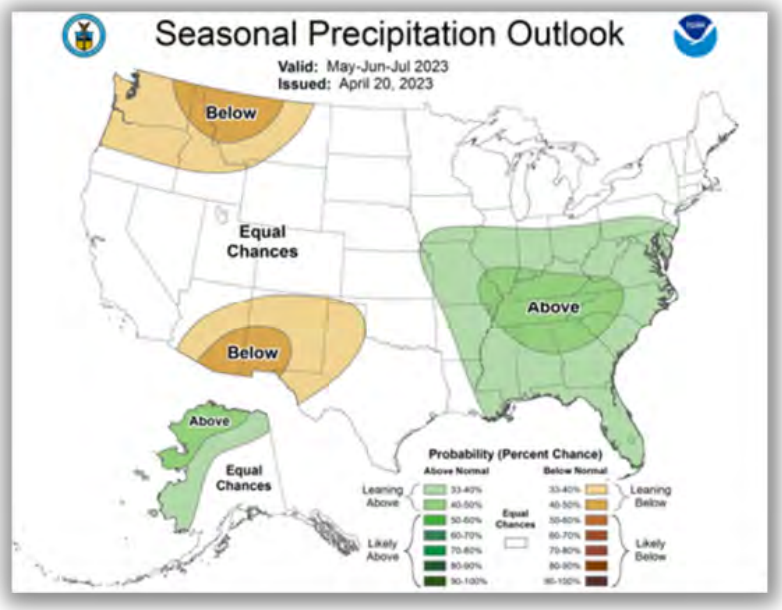


Figure 2. Summer 2023 precipitation outlook

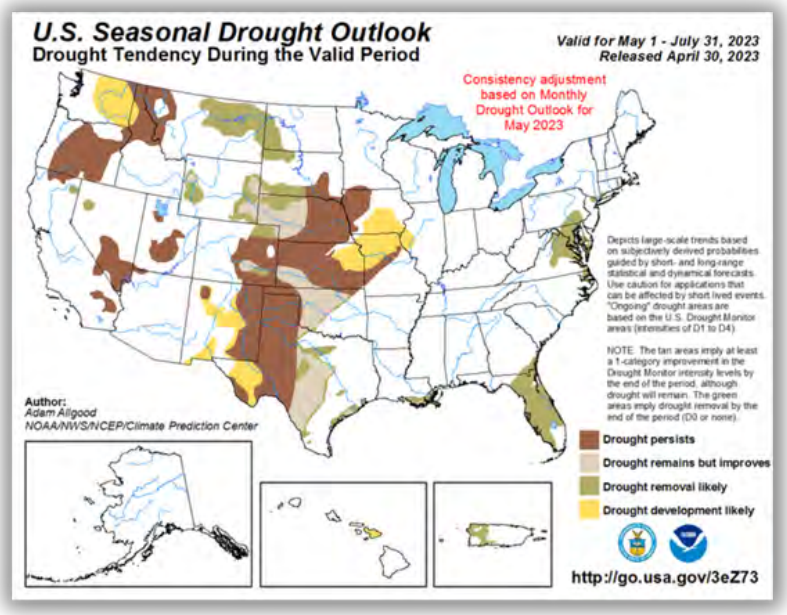


Figure 3. Summer 2023 drought outlook

2022 Hurricane Outlook Update

BY CHRIS OSWALT

One of the first 2023 hurricane forecasts from Dr. Phillip Klotzbach, Colorado State University, Tropical Weather & Climate Research was released in early April. Based on the prediction it looks to be a slightly below average hurricane season. This would not seem out of the ordinary since the El Niño Southern Oscillation (ENSO) forecast is for El Niño conditions to develop during the May to July time frame (62% chance). In El Niño years you get the typical zonal flow of air aloft causing to some degree issues for hurricane formation and intensification. El Niño looks to be developing into this summer. With having said all this the following table looks at CSU's forecast and the past 30 year or so average.

Forecast Parameters	CSU Forecast	Average for 1991-2020
Named Storms	13	14.4
Named Storm Days	55	69.4
Hurricanes	6	7.2
Hurricane Days	25	27.0
Major Hurricanes (3,4,5)	2	3.2
Major Hurricane Days	5	7.4

2022 Hurricane Outlook Update, ctnd.

BY CHRIS OSWALT

So in an effort to bring the probabilities a little closer to our geographical area CSU provided the following information for the state of Florida. For one of more storms there is an 87% probability of at least one named storm coming within 50 miles of Florida, a 58% probability of a hurricane and a 30% probability of a major hurricane. This compares to the climatological average (1880-2020) of at least one named storm at 86%, 56% for a hurricane and 29% probability of a major hurricane.

Getting further specific we can look at the probabilities at the coastal counties nearest to our area:

2023 Forecast Probabilities (%)				Climatic Average 1880-2020 (%)		
County	2023 Named Storm	2023 Hurricane	2023 Major Hurricane	Named Storm	Hurricane	Major Hurricane
Pasco	38	18	5	36	17	5
Hillsborough	38	18	7	36	17	7
Manatee	38	19	8	37	18	8
Sarasota	38	18	9	36	17	8
Charlotte	39	18	11	38	17	10
Lee	41	19	12	40	18	11
Brevard	44	18	6	42	17	6
Indian River	38	18	6	37	17	6
St. Lucie	38	16	6	36	15	6
Martin	39	18	7	38	17	7
Palm Beach	44	22	9	42	21	9

I did a little more digging into the available information and located the following website: https://coast.noaa.gov/hurricanes/#map=4/32/-80. At this site you can set your location and the radius out from that location to see the number of storms that have passed within that distance. You can also set the ENSO conditions for your time period of interest. So, I took a look at Bartow using the past 165 years (1852 to 2017) and a radius of 60 nautical miles. Over that time period there were a total of 89 storms (figure 1) ranging from tropical depressions to hurricanes.

When looking at the effect of ENSO condition (this was for the 67 years 1950 to 2017 of tracking ENSO) in neutral years there were 21 storms, in El Niño years there were 13 storms which included the 2004 hurricane season (Jeanne, Frances and Charley) and 10 storms during La Niña years.

2022 Hurricane Outlook Update, ctnd.

BY CHRIS OSWALT

You can also go back and determine the storm activity by month of the year. I did this again using Bartow and 60 nautical miles to determine the following numbers. (1852 to 2017)

Month of Year	Number of Storms
January	0
February	0
March	0
April	0
May	1
June	8
July	4
August	23
September	24
October	24
November	6
December	1

Based on the historical storm record the months of August, September and October are the busiest using Bartow in this example.

Figure 1. Historical storm tracks from Bartow, out 60 nautical miles

The Goals of Pest Mangement

BY AJIA PAOLILLO

Integrated Pest Management (IPM) uses a combination of methods to keep pest populations at an acceptable level, which are economical and have little effect on human health and the environment. IPM is a step-by-step process that identifies the target pest, monitors the population for action thresholds, chooses a management goal, implements the various methods, and evaluates the results. IPM encompasses insects and other arthropod pests, diseases, and weeds that are found in enclosed areas and open outdoor environments such as citrus groves. Insect and other arthropod pests can cause damage to plants by feeding on the foliage and fruit or by serving as a vector for a disease pathogen. Certain plant diseases can negatively affect tree health, which causes reduced productivity, yields, and possibly death. Weeds compete with trees for nutrients and water and can serve as alternate hosts for damaging insects.

The first step in choosing an IPM plan is identifying the pest you are trying to control. Accurately identifying the pest allows you to understand critical information such as its life cycle (figure 1) and effective control methods. The various methods used in an IPM program are physical and environmental modifications and cultural, mechanical, biological, chemical, and regulatory controls. There are thresholds to consider before implementing pest control measures when pest populations are damaging crops. The Action Threshold describes the pest population at which control measures need to be implemented. It is determined by the level of damage that is acceptable before health, environmental, or economic damage occurs. The Economic Threshold is the point at which the cost of controlling a pest equals the economic damage it is causing.

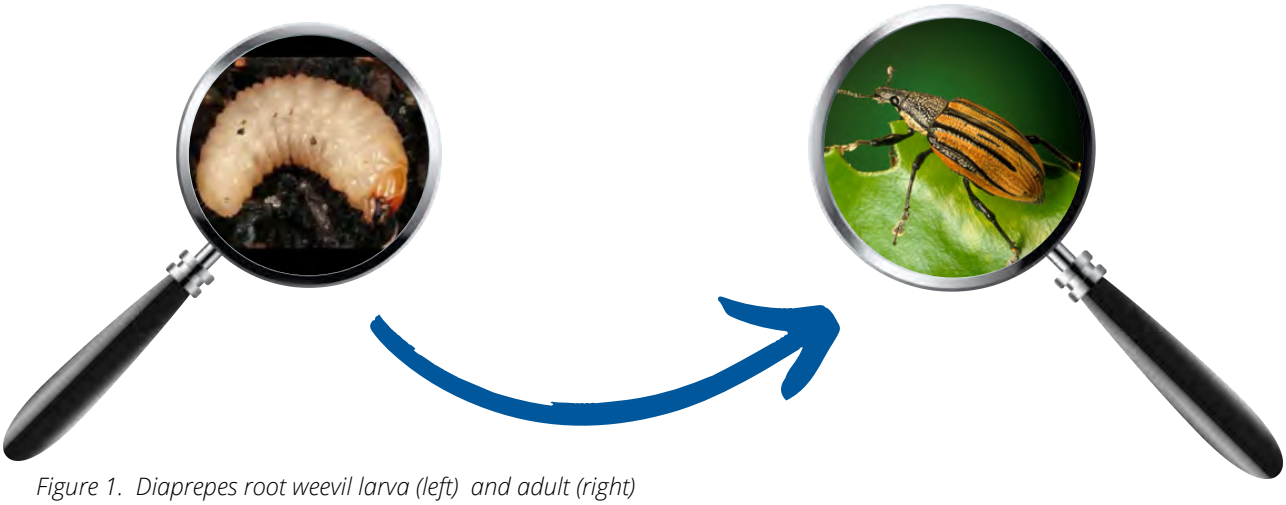


Figure 1. Diaprepes root weevil larva (left) and adult (right)

Whether you are battling with an insect, disease, or weed infestation, the economic damage the pest is causing will determine your action thresholds and guide you to appropriate control methods. The severity of damage a pest causes is an important consideration when choosing management options that are both environmentally conscious and economical. For example, the Asian Citrus Psyllid (ACP) is the vector for Candidatus Liberibacter asiaticus, the pathogen that causes HLB. As we know, this is the most devastating disease to hit the Florida citrus industry. Eradication efforts were unfortunately, not successful, as the insect population is widespread around the state. Chemical control is a method being utilized to manage ACP population levels. Researchers are looking into cultural practices such as tolerant and resistant citrus varieties as another way to manage this disease. They have also provided growers with recommendations for optimal tree nutrition. Another pest we manage in citrus is the rust mite, which is an arthropod; this pest causes a rust type blemish on the fruit peel. This mite can cause significant economic damage to fresh fruit growers because it affects the exterior appearance of the fruit, making it less marketable. On the other hand, if you grow fruit that will be processed into juice, this mite usually does not cause a large amount of economic damage because it does not affect the internal juice quality. Rust mite control varies, allowing for different population levels depending on the fruit variety and target market. This results in varying action and economic thresholds.

The Goals of Pest Mangement, cntd.

BY AJIA PAOLILLO

Scouting and monitoring techniques are very useful tools for identifying existing pest pressures and populations. They also help determine action thresholds. You will be able to establish action and economic thresholds unique to your agricultural operation with the information from scouting and monitoring. The next step in an IPM program is to determine, based on your thresholds, the level of pest control you are trying to achieve. This can be considered the "goal" of your pest management plan. Prevention, Eradication, and Suppression are three goals in pest management. Each one has different management options that can help you meet your goals. In many cases, a combination of one or more will yield positive results. How do you know what the goal of your management plan should be and what factors contribute to this decision?

Prevention is most effective for pest populations in which control measures are difficult or not usually successful. One method used in prevention is physical modifications to the growing environment, which create a barrier between the pest and crop. For instance, some citrus growers have started growing fresh fruit varieties in Citrus Undercover Production Systems (CUPS) to prevent inoculation from the Asian Citrus Psyllid (ACP). This design allows trees to be grown in-ground or in pots, under a tightly woven protective screen. This screen does not allow the ACP to pass through, thus creating a physical barrier between plant and insect. This same screen is utilized as individual plant covers (IPC), (figure 2) placed on young trees in traditional open-air citrus plantings. While the IPCs cannot protect the tree from the ACP forever, it provides a barrier from inoculation for a few years.

Figure 2. IPC used in the field for ACP protection
Photo credit: UF/IFAS

Depending on the target pest, other prevention method combinations can be used. Scouting, as previously mentioned, will allow you to identify developing populations in your grove. You may find a population hot spot that can be controlled before the pest becomes established. For instance, vines are difficult weeds to control, especially in large populations. Scouting in and around the grove for vines and pulling young seedlings will help prevent large-scale population establishment. With weed prevention, it is also important to control the weeds before they produce and disperse seeds over a large area. These actions are examples of cultural control methods. These practices, along with chemical controls such as pre-emergent herbicides for weed seeds and post-emergence herbicides for existing weeds, can help you get ahead of the issue.

Decontaminating personnel and equipment is another pest prevention method. For example, decontamination can be achieved through using a spray for Citrus Canker control on your personnel and equipment. When using decontamination practices to prevent insect populations, you should remove any visible insects from clothing, keeping in mind that some crawler stages can be very small. Be sure to decontaminate vehicles and equipment that were used in another location to wash off weed seeds and insects and kill diseases. If you know that you have an infestation of a target pest in one of your groves or blocks, visit that location last during the day, this will also help prevent the spread between locations.

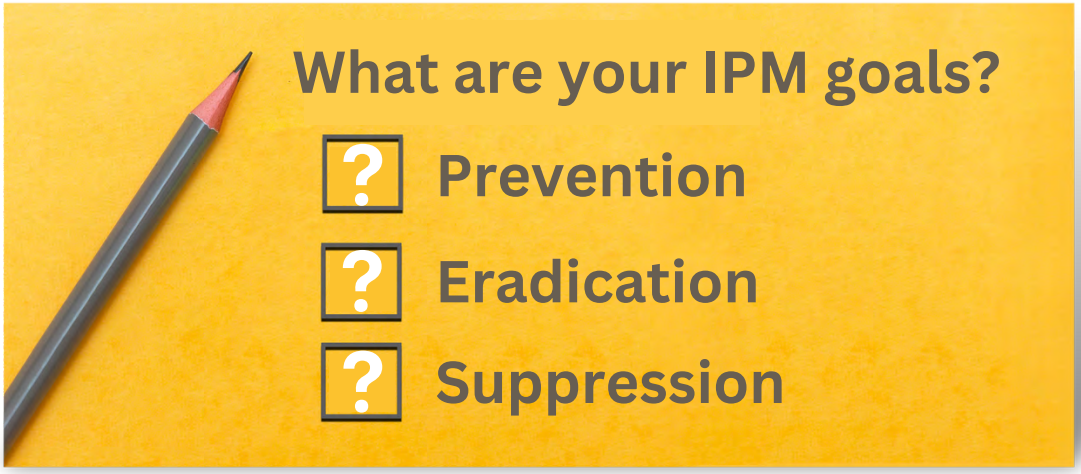
The Goals of Pest Mangement, cntd.

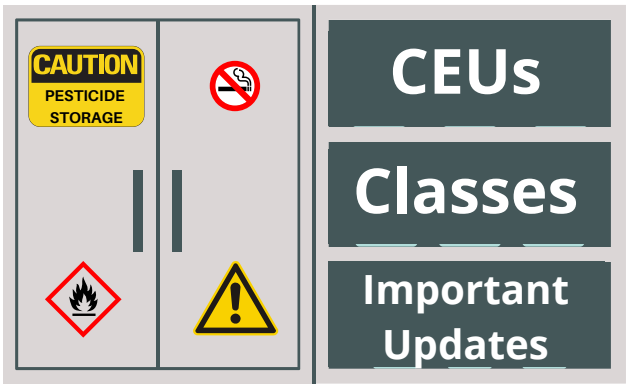
BY AJIA PAOLILLO

Some pests have a “zero” threshold and cannot be present in certain environments due to the severe human health, environmental, or economic damage they will cause. For instance, food establishments cannot have vermin or insects present, due to health hazards. Eradication is the pest management goal in these situations. Eradication is the complete removal or elimination of the target pest population from the location or environs. This method is mainly used for buildings such as homes, offices, restaurants, etc. These areas are confined, usually making eradication possible. Eradication in citrus groves and other open outdoor environments is more difficult to achieve. Eradication is usually the first goal when new invasive pests are introduced to our state and is done through regulatory agencies. For example, when the Mediterranean Fruit Fly was found in Florida an eradication program was launched and was successful. This pest posed a significant threat to many crops in Florida, including citrus. Its establishment would have had a negative economic impact on our agricultural industry. Eradicating some pests may not be successful depending on the life cycle of the pest, the rate of spread, and environmental conditions.

When eradication is not possible due to the large scale of the pest population, cost, or the potential negative environmental and economic impacts, suppression may be successful. Suppression is the practice of keeping pest populations at low enough levels to avoid reaching an action threshold. Most pest management programs utilize this method. Suppression tactics will vary with the type of pest, the damage it causes, and the acceptable population levels. Population suppression can be achieved by using chemical, mechanical, and cultural control methods, as well as biological control. When using chemical controls, it is important to be conscious of the effect the materials can have on non-target beneficial insects in the grove, such as honey bees, ladybeetles, and other species used for biological control. Biological control uses the pests’ natural enemies to keep populations low. Examples of biological control include insects and even fungi or bacteria. To sustain the natural enemy population used for biological control, the target pest must be present at some level to serve as a food source. All of the control methods used should be economical for the grower and not cause subsequent human health or environmental issues.

The three pest management goals of prevention, eradication, and suppression are effective ways to control many pests we face in agriculture. When implementing control measures for a specific pest, remember that accurately identifying the pest is the first key to successful management. You must understand the life cycle and growing pattern to successfully control a pest population. Prevention methods can be combined with suppression methods to achieve desired results when eradication is not practical. IPM utilizes cultural, mechanical, chemical, genetic, and biological controls to lower pest populations. Remember to evaluate the results of the methods used and determine how they can be adjusted to attain the desired pest population level. It is important to know which methods will work best in your unique operations and will yield the best results while being both health and environmentally conscious and economically feasible.





CEUs

Classes

Important Updates

The Pesticide Cabinet

Your central location for upcoming CEU workshops, pesticide license exam review classes, and more.

Don't forget to be earning CEUs!

Remember your pesticide license is only valid for 4 years.
You can renew by earning CEUs or taking the exams again.

How many CEUs do you need?

Everyone needs 4 CEUs in Core in addition to the required CEUs in your category

- Private - 4
- Ag Tree Crop - 8
- Aquatic - 16
- Orn & Turf - 12

- Natural Areas - 16
- Right of Way - 8
- Ag Row Crop - 8
- Demo & Res. - 4

Private Applicator and Core Pesticide Prep. Training

Date: Friday May 12, 2023 **Time:** 8am-5pm (Exam 1:30-5pm)
Location: UF/IFAS Extension Polk County
1702 S Holland Pkwy.
Bartow, FL 33830
Cost: $15/class (lunch included)
Instructors: Luis O. Rodriguez
Registration: https://www.eventbrite.com/e/private-applicator-core-pesticide-prep-training-tickets-611135000237

This class will review the required information for the Private and Core exams to obtain restricted use pesticide licenses in Florida

2 CEUs available in:
Core, Private, Ag Tree, and Ag Row
(Max of 4 CEUs)

General Standards Core Exam Review Class

Date: Thursday June 22, 2023 **Time:** 8:30am-12:30pm
Location: UF/IFAS Extension Hardee County
507 Civic Center Dr.
Wauchula, FL 33873
Cost: $15/class
Instructor: Ajia Paolillo
Registration: https://corereviewclass062223.eventbrite.com

This class will review the required information General Standards Core exam to obtain restricted use pesticide licenses in Florida

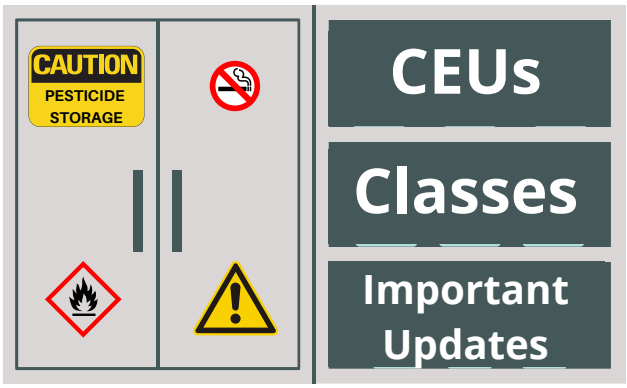
4 CEUs available in:
Ceneral Standards Core
487 or 482

General Standards Core Exam Review Class

Date: Wednesday June 28, 2023 **Time:** 8am-3pm
Location: UF/IFAS Extension Polk County
1702 S Holland Pkwy
Bartow, FL 33830
Cost: $10/class
Instructor: Luis O. Rodriguez
Registration: Click here to register on EventBrite

This class will review the required information General Standards Core exam to obtain restricted use pesticide licenses in Florida

4 CEUs available in:
Ceneral Standards Core
487 or 482



The Pesticide Cabinet

Your central location for upcoming CEU workshops, pesticide license exam review classes, and more.

CEU Article Update!

4 Core CEU's are always available online through Citrus Industry magazine
https://citrusindustry.net/ceu

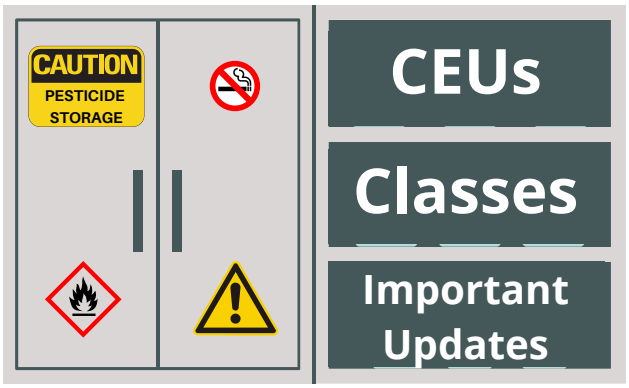
Important Note: Beginning February 2023, CEU articles will no longer be available in the printed copy of Citrus Industry Magazine. The articles and tests will only be available online at the above website. However, these past issues from 2022 still have printed articles that are eligible for CEU credit until their expiration date which is one year from the publication date:
August 2022, & November 2022.

Need CEUs?

We will be hosting the 2023 South Central Florida CEU's Days in July. For three consecutive Fridays, classes will be offered to fulfill CEU requirements for a variety of licenses and categories. See the flyer on the next page for more information and to register.

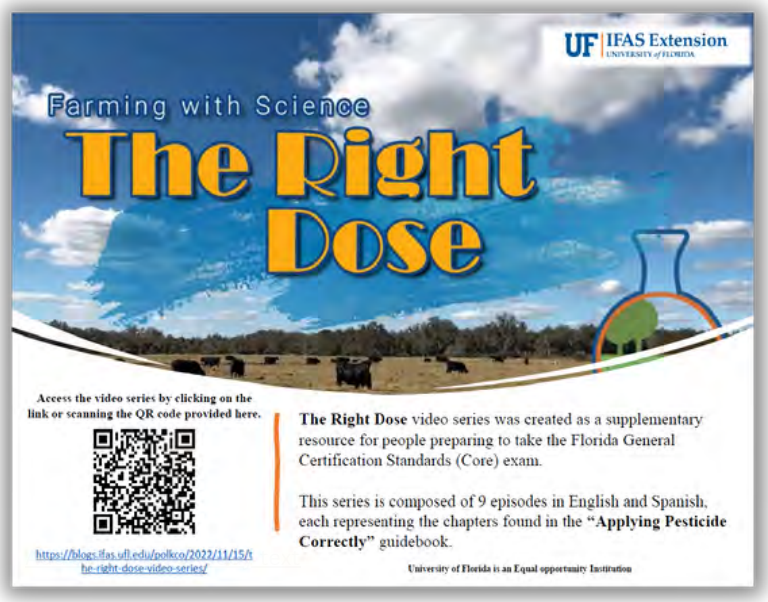
Looking for another way to learn your Core Exam material?

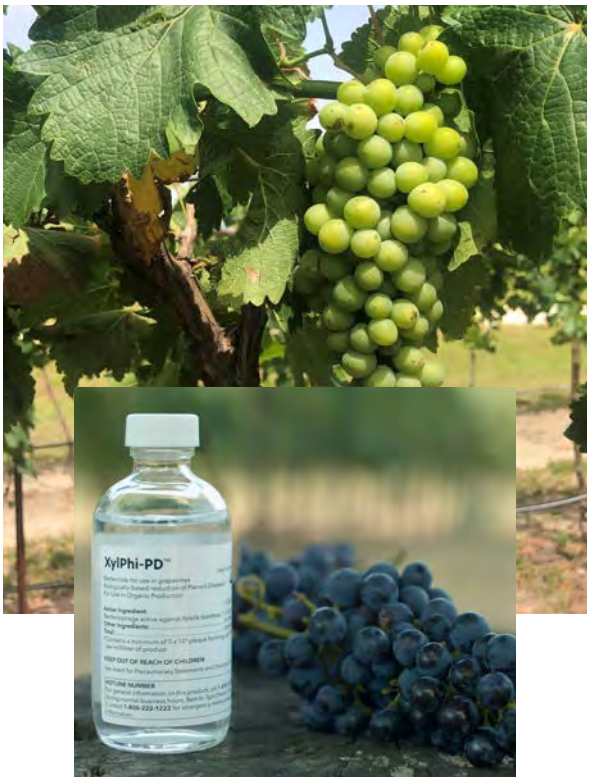
We have created a series of videos titled "The Right Dose" that are available on YouTube discussing each of the nine chapters found in the General Standards Core Exam Study Manual "Applying Pesticides Correctly" , The videos are available in both English and Spanish "La Dosis Correcta" and can be viewed at your convenience.
Please see the flyer on the next page, and scan the QR code to access the links to the videos.



The Pesticide Cabinet

Your central location for upcoming CEU workshops, pesticide license exam review classes, and more.





UF/IFAS Extension presents

GRAPE Field Day

Thursday, May 18, 2023
9:00 a.m. – 3:30 p.m.

2556 West Highway 318, Citra, FL 32113
Frank Stronach Conference Center
UF Plant Science Research
and Education Unit (PSREU)

Sponsored by A&P Inphatec (inphatec.com)

NO REGISTRATION FEE. REGISTER AT
https://tinyurl.com/ysdfbj43 or visit https://hos.ifas.ufl.edu/grape

PLEASE RSVP BY MAY 12
or call Lesley Reddick (352) 591-2678

TIME	AGENDA
9:30 a.m.	**Registration and Welcome** Dr. Ali Sarkhosh and UF/IFAS PSREU team
10:00 a.m. – 12:00 p.m.	**Vineyard Workshop: XylPhi-PD (Bactericides) Injection Demonstration for Management of Pierce's Disease in Grape. XylPhi-PD Labeled for Application in Grape in Florida in 2023.** Dr. Jean Rodriguez, Research Scientist at A&P Inphatec, LLC; Dr. Ali Sarkhosh, UF/IFAS Horticultural Sciences Department
12:00 – 1:00 P.M.	**LUNCH**
1:00 p.m.	**Pierce's Disease and Its Management Using XylPhi-PD (Bactericides)** Dr. Jean Rodriguez, Research Scientist at A&P Inphatec, LLC
1:30 p.m.	**Marketing and Promoting FL Grape Products** Melissa Hunt, FDACS/Division of Marketing and Development
2:00 p.m.	**Vineyard, Winery and Agritourism** Dr. Kevin Athearn, UF/IFAS North Florida Research & Education Center - Suwannee Valley
2:30 p.m.	**Grape Breeding Program at Florida A&M University** Dr. Islam El Sharkawy, FAMU/Center for Viticulture & Small Fruit Research
3:00 p.m.	**The Englishman's Grape** Dave Jarnagin, Hyldemoer + Co www.HyldemoerFarms.com
3:30 p.m.	**Adjourn**

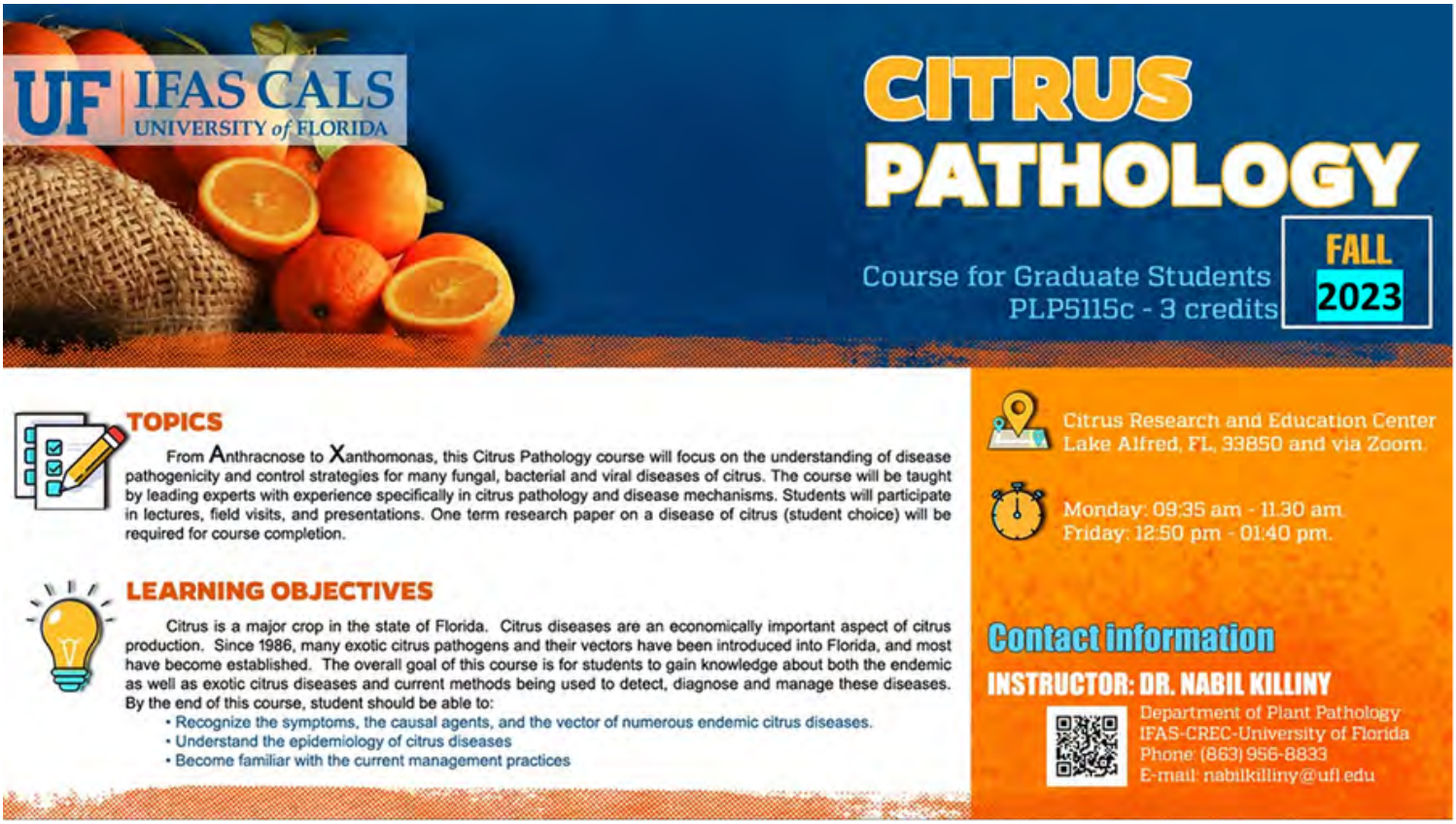
Questions?

Contact Dustin Huff
UF/IFAS Horticultural Sciences
dustinmhuff@ufl.edu
or (352) 273-2005

The University of Florida is committed to providing universal access to all of our events. For disability accommodations such as sign language interpreters, listening devices, and alternate formats of written material, please contact Lesley Reddick, l.reddick@ufl.edu, (352) 591-2678 at least one week in advance. Advance notice is necessary to arrange for some accessibility needs.

UF IFAS Extension
UNIVERSITY of FLORIDA

Graduate Classes Offered for Fall 2023



Graduate level: HOS 6545

In this course, you will:

- Learn the unique fundamentals of citrus biology.
- Practice applying citrus biology to better crop production.
- Enhance your written communication skills for extension and academia.

Format:

- Online, asynchronous to fit your schedule and location.
- Discussion-based, high engagement with peers and instructor.
- Lectures provided by experts in each topic.

Topics include:

- Citrus origins
- Environmental responses
- Crop load management
- Flowering
- Mineral nutrient management
- Physiology of huanglongbing

Please contact Dr. Christopher Vincent civince@ufl.edu for more information

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