

# Citrus from the Ridge to the Valley

CENTRAL FLORIDA CITRUS EXTENSION

## December 2021

It is hard to believe that we are at the end of 2021 already! We have a couple of events that are happening this month we hope you will attend:

- December 14th - UF/IFAS Citrus Field Day
- December 16th - Highlands County Ag Safety Morning

Registration links can be found in this newsletter. Time is running out to sign up, so act fast!

Also, in this issue you will find information on the winter weather outlook, virtual Farm Supervisor training, an Ag Water update, upcoming Food Safety grower trainings, and Fresh Fruit worker online training modules. The 2021-22 season Citrus Flower Induction Advisories are now being posted.

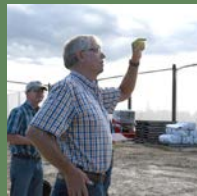
Hopefully this holiday season you can spend time with those most important to you. Thank you to our growers and newsletter sponsors for supporting our Extension programs. We wish you a safe and wonderful holiday, and Happy New Year!

## Happy Holidays!



**UF** | IFAS Extension  
UNIVERSITY of FLORIDA

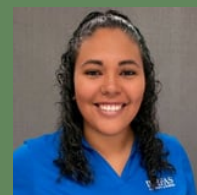
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The Foundation for the Gator Nation  
An Equal Opportunity Institution





# December 2021 Citrus Field Day

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On Tuesday, December 14, 2021, the UF/IFAS Citrus Research and Education Center and UF/IFAS Polk County will hold a field day. Information about the program is in the following flyer and registration is free, and lunch is included. Please use the registration link to register if you are interested in attending the program.

At the field day there will be two stops the first will be at the HLB citrus nutrition management research project. Dr. Vashisth field presentation will be discussing the results of a citrus nutrition field trial that was designed to provide an effective mitigation of HLB infected citrus trees. The results of the trial indicate that HLB can be managed to some degree in the field using mineral nutrition. The results will include recommendations on how to use this information in existing groves. In addition, at this stop Dr. Levy will be discussing and demonstrating methodologies using canopy density values to evaluate the efficacy of nutritional treatments used to manage HLB. This type of in-field technology can help growers determine quantitatively the results of HLB management programs. This evaluation methodology can be used for practices related to nutrition, pest and disease management.

At our second stop, Dr. Tripti Vashisth will make a field presentation of the use of timely gibberellin acids (GA) sprays to manage citrus flowering and citrus tree stress. The information provided will demonstrate the mitigating effects of GA on HLB infected citrus trees. The information provided growers with current recommendations and use rate information on this use of GA to enhance citrus tree yield.

After the second stop we will return to the Stuart Conference Center for lunch and any further discussion about the field day.



# December 2021 Citrus Field Day

**UF** | IFAS Extension  
UNIVERSITY of FLORIDA

**December 14, 2021  
9:30 am to 12:00 pm**

**UF/IFAS Polk County Extension  
Stuart Conference Center  
1710 US Hwy 17 S  
Bartow, FL**



- 9:30 am**     **Check-in, Stuart Conference Center**
- 9:45 am**     **Welcome and instructions**
- 10:00 am**    **Depart conference center**
- 10:15 am**    **Arrive Citrus Nutrition Trial**  
- **Observation of nutritional treatments and canopy density on HLB infected citrus trees**
- 11:00 am**    **Leave Citrus Nutrition Trial**
- 11:10 am**    **Arrive at Gibberellic Acid Field Trial**  
- **Observation of GA treatments on HLB infected trees**
- 11:40 am**    **Depart the GA Trial**
- 11:55 am**    **Arrive back at Stuart Conference Center**
- 12:00 pm**    **Lunch will be provided by Bo Griffin and The Tree Defender**

**Presentations at field trial locations by:  
Dr. Tripti Vashisth and Dr. Amit Levy, UF/IFAS CREC**

**Pre-registration is required by Friday December 10, 2021  
using Eventbrite:**

**<https://www.eventbrite.com/e/citrus-field-day-tickets-214631196687>**

**Or Contact Gail Crawford to register 863-519-1042**

**1.5 CEUs for Restricted Use Pesticide licenses in Private, Ag Tree, Demo & Research,  
Regulatory Inspection & Sampling, and Regulatory Pest Control will be available**

**CEUs for Certified Crop Advisors in Crop Management (0.5) and Nutrient Management (1)  
will also be available**

# Ag Safety Morning Registration Reminder!

BY LOURDES PEREZ CORDERO

As a reminder, the Highlands County Ag Safety Morning will be happening on December 16th, 2021. There are only a few seats left on the English session and one week to register for this event. If you are interested in attending, please visit the Eventbrite website or contact me to send you the registration link.

This training will be offered in both English and Spanish at the Highlands County Extension Office Conference Rooms 2 and 3. Refreshments will be offered throughout the morning! Check-in will begin at 7:45 am and event ends at 12:00 pm. Participants are required to pre-register!

Registration cost is \$5.00 per person. Participants can pay with credit card online (plus service fee) or checks can be written to the UNIVERSITY OF FLORIDA and mailed to 4509 George Blvd, Sebring FL, 33875; to avoid the online service fee.

Please don't hesitate in contacting me by phone (863-402-6540) or by e-mail ([lperezcordero@ufl.edu](mailto:lperezcordero@ufl.edu)) if there are any questions.


>>> **HIGHLANDS COUNTY** <<<

# **AG SAFETY MORNING**

**DEC. 16, 2021 7:45AM - 12:00PM**

**Highlands County Extension Office**  
**4509 George Blvd. , Sebring, FL 33875**

- Sessions offered in English and Spanish
- Pre-registration required!
- Registration cost per person: \$5.00




Topics include:


- Worker Protection Standards
- Understanding Pesticide Labels
- Personal Protective Equipment
- Pesticide Exposure and its Symptoms
- Tractor Safety
- First Aid & Heat Stress

**TO REGISTER PLEASE VISIT EVENTBRITE**  
<https://www.eventbrite.com/e/highlands-county-ag-safety-morning-registration-211110696777?aff=ebdssbdestsearch>

**CONTACT INFO:**  
Phone: 863-402-6540  
Email: [lperezcordero@ufl.edu](mailto:lperezcordero@ufl.edu)



**UF IFAS Extension**  
UNIVERSITY of FLORIDA



COUNTY OF HIGHLANDS  
STATE OF FLORIDA

**An equal opportunity institution.**

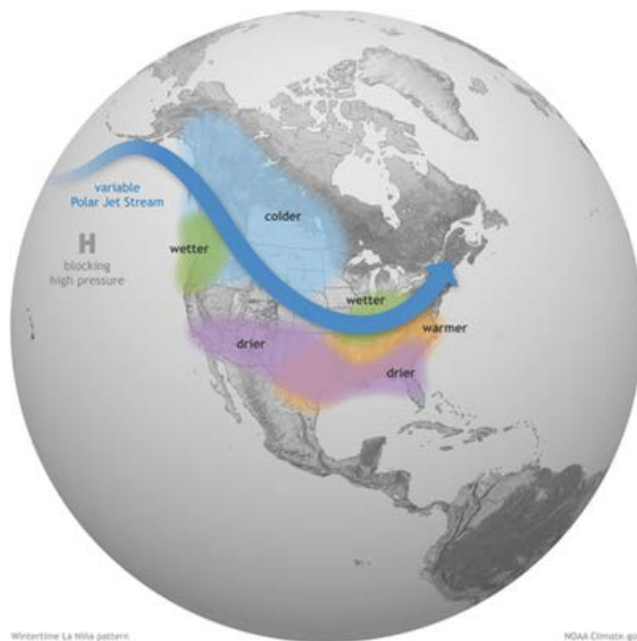


# The 2021-22 Winter Weather Outlook and the El Nino-Southern Oscillation (ENSO) Forecast

BY CHRIS OSWALT

Winter has finally arrived with cooler temperatures and shorter days; it might be an excellent time to further look at the winter weather forecast and ENSO phase and how this might give us insight into our current winter weather outlook.

The latest forecast from the National Oceanic and Atmospheric Administration (NOAA) has our winter (ENSO) conditions evolving into a La Nina phase. In general terms, this means there will be warmer and dryer weather conditions this winter (figure 1). This is based on the influence of La Nina, creating clearer skies resulting in fewer clouds and consequently less rainfall. Before anybody gets excited that doesn't necessarily mean fewer bouts with freezing temperatures. In fact, some information was published in 2001, looking at the various phases of ENSO and the occurrence or lack of severe freezes in Florida.



*Figure 1 ENSO La Nina condition*

I know that I am dating myself to some, but many of us around still remember and or experienced the freezes of the 1980s. Three significant freezes in that decade significantly shaped the current Florida citrus industry. It was Christmas of 1983 when temperatures in the central Florida citrus production area dropped into the lower 20's after just a few days before being in the '80s. This rapid and significant change in temperatures allowed for very little cold acclimation for citrus trees and resulted in substantial freeze damage to the industry. I remember being in Gainesville as a student that year, having just completed an introduction class to the citrus industry. Part of this class required going to the teaching block on campus and describing and analyzing the different varieties of citrus planted in the block. Came back after Christmas, trees were frozen to the ground. Then as we tried to recover from that event 13 months later, the Super Bowl 1985 freeze hit the industry and made sure we wouldn't so soon forget what cold weather was like. These two occurrences, as have freezes in the past, helped to reshape the geographical distribution of the Florida Citrus industry. Many new plantings were made "down south" to escape the threat of freezing temperatures. Then finally, around Christmas of 1989, the third and last of the freezes of the 80's occurred. This, in comparison, the '83 and '85 freezes did some damage, but the areas hardest hit no longer were planted in citrus trees, due in large part to the movement of the industry to the southern regions of Florida.

So why bring up disturbing memories of freezes? Well, one common thread through all of these events was the phase of the ENSO. In all three of those years and in several other freeze years (between 1980 and 2000), these significant freezing temperatures occurred during neutral or near-neutral ENSO years. The analysis was done back in 2001 that looked back at the ENSO phase and the occurrence of severe freezes in Florida. The period examined was from 1980 to 2000. The study results indicated that there was a 60% chance of having near-neutral ENSO conditions using their criteria in any given winter. Of these near-neutral winters, the odds of having a significant freeze was 50%. Although this data was based on data from 20 years ago, I believe it provides growers a sense of what to expect as far as winter weather and freezes as related to ENSO in any given year. If the ENSO forecast calls for El Nino or La Nina conditions during the winter, the likelihood for a severe freeze is less than in a near-neutral ENSO winter. Just some thoughts for you to consider as you develop and carry out your citrus cold protection plan.

# Farm Labor Supervisor Training

The University of Florida is having their next Farm Labor Supervisor Training - Basic Training 101: Administration and Safety. The classes will be held on December 11th and 12th (8:00 am to 5:00 pm both days). Please note that this is a Saturday and Sunday. The cost per student is \$340/student and will be offered in both English and Spanish. They will be offering the class onsite at their center, SWFREC, Immokalee, or attend by videoconference. The purpose of this course is to provide anyone with farm labor responsibilities the administrative knowledge and tools necessary to cultivate and maintain a culture of safety for farmworkers who are essential to the profitability of Florida's agricultural industry.

- Below are the flyers, in English and Spanish, with all of the information needed to register.
- For further questions or information on what each class covers, please email Barbara Hyman [hymanb@ufl.edu](mailto:hymanb@ufl.edu).
- UF is available to provide their program at your location if you have ten or more employees that need it. If you are interested in onsite training at your location, please contact Barbara Hyman.

UF/IFAS Southwest Florida Research & Education Center

**Farm Labor Supervisor Training Program  
BASIC TRAINING 101:  
ADMINISTRATION AND SAFETY**

**DECEMBER 11 AND 12, 2021**  
8 am till 5 pm  
English and Spanish Instructors

**TO REGISTER:**  
<https://flstrainingdec2021.eventbrite.com>

**CLASSES INCLUDED**

Farm Labor Contractor Basics & Navigating H2A  
Wage/Hour Regulations & Managing H2A Workers  
EEOC Compliance, Harassment & Discrimination  
Management Communications

Transportation & Safe Driving  
Pesticide Safety  
COVID-19 Farmworker Safety  
Heat Illness Prevention  
Agricultural Equipment Safety

**Who should take these classes?** Labor Supervisors, Contractors, Crew Leaders, Foremen, Bus & Van Drivers, Human Resources, Payroll, Compliance, Labor Managers, and Farm Managers.



**Class information:** A Certificate of Completion is earned by attendees who attend all classes and complete course quizzes.

**FEE: \$340/student**

**Presented In-Person at:**  
UF/IFAS/SWFREC  
2685 SR 29 N  
IMMOKALEE, FL

**And virtually by Zoom**

**Questions?**  
Barbara Hyman  
([hymanb@ufl.edu](mailto:hymanb@ufl.edu))  
OR  
Dr. Kim Morgan  
([kimorgan@ufl.edu](mailto:kimorgan@ufl.edu))



UF/IFAS Southwest Florida Research & Education Center

**Programa De Capacitación Para Supervisores  
De Trabajo Agrícola  
ENTRENAMIENTO BASICO 101:  
ADMINISTRACION Y SEGURIDAD**

**De Diciembre 11 Y 12, Del 2021**  
De 8 am a las 5 pm  
INSTRUCTORES EN INGLES Y ESPAÑOL

**PARA REGISTRARSE:**  
<https://flstrainingdec2021.eventbrite.com>

**CLASES INCLUIDAS**

Conceptos Básicos Para Contratistas Agrícolas y Como Navegar Con Trabajadores H2A  
Regulaciones De Horas/ Salarios y Supervisando Trabajadores H2A  
Cumplimiento De Acoso y Discriminación de la EEOC  
Técnicas De Comunicación Para Trabajadores Agrícolas  
Transportación Segura Y Manejando Con Cuidado Como Usar Los Pesticidas Con Seguridad  
COVID-19 Y Seguridad De Los Trabajadores Agrícolas  
Prevención De Enfermedades Causadas Por El Calor Como Usar Equipo Agrícola Seguramente

**¿Quién debe tomar estas clases?** Supervisores laborales, contratistas, líderes de tripulación, conductores de autobuses y camionetas, personal de oficina, gerentes laborales y gerentes de granjas.

**Información de la clase:** Todos los asistentes de estas clases que completen los cuestionarios del curso obtendrán un Certificado de finalización.

**COSTO: \$340/POR PERSONA**

**Domicilio De La Presentación En Persona:**  
UF/IFAS/SWFREC  
2685 SR 29 N  
IMMOKALEE, FL

**Y virtual en Zoom**

**Si Tiene Preguntas Comunicarse Con?**  
Barbara Hyman  
([hymanb@ufl.edu](mailto:hymanb@ufl.edu))  
O  
Dr. Kim Morgan  
([kimorgan@ufl.edu](mailto:kimorgan@ufl.edu))



# Ag-Water Update: Proposed Rule

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The Food and Drug Administration (FDA) released proposed changes to Subpart E (Agricultural Water) of the FSMA Produce Safety Rule. The proposed changes, if finalized, will replace the pre-harvest microbial quality criteria and testing requirements for covered produce with systems-based assessments for determining pre-harvest water quality. The current proposed rule does not include changes to harvest and post-harvest uses of agricultural water.

These changes are only proposed changes, not final, so changes in your current production practices are not required. The current proposed rule does not include a delay in the January 22nd compliance dates for large farms, but a subsequent rule is currently under review to further delay compliance dates. In the meantime, FDA intends to use Enforcement Discretion for subpart E.

The proposed rule will be available for comment for 120 days. Comments should be submitted to docket FDA-2021-N-0471 on [Regulations.gov](https://www.regulations.gov).

Summary of the changes:

Covered farms must conduct pre-harvest agricultural water assessments once annually, and whenever a change occurs that contamination risks may be introduced to produce or food contact surfaces. As part of their pre-harvest agricultural water assessments, these farms would be required to evaluate certain factors that could impact produce safety.

These factors include:

- Agricultural water system
- Agricultural water practices
- Crop characteristics
- Environmental conditions
- Other relevant factors

To learn more about the proposed rule changes, visit [FDA.gov](https://www.fda.gov) to read all of the proposed requirements. An FDA fact sheet summarizing the proposed changes is on the following page.

Submit your questions to [UFFoodSafety@ifas.ufl.edu](mailto:UFFoodSafety@ifas.ufl.edu).





## Agricultural Water Assessment

The FDA is proposing to revise certain pre-harvest agricultural water requirements for covered produce (other than sprouts) in Subpart E of the FDA Food Safety Modernization Act (FSMA) [Produce Safety Rule](#). This proposal, if finalized, would replace the pre-harvest microbial quality criteria and testing requirements for such produce in the Produce Safety Rule with requirements for systems-based pre-harvest agricultural water assessments that covered farms would use for hazard identification and risk management decision-making purposes. As part of the assessment, the farms would be required to evaluate the following factors to identify conditions that would be reasonably likely to introduce known or reasonably foreseeable hazards into or onto produce or food contact surfaces:



Factors	Description
Agricultural water system(s)	<ul style="list-style-type: none"> <li>• The location and nature of the water source (including whether it is ground water or surface water)</li> <li>• The type of water distribution system (such as whether it is open or closed to the environment)</li> <li>• The degree to which the system is protected from possible sources of contamination, including:                             <ul style="list-style-type: none"> <li>- other users of the water system</li> <li>- animal impacts (such as from grazing animals, working animals, and animal intrusion)</li> <li>- adjacent and nearby land uses related to animal activity, the application of biological soil amendments of animal origin, or the presence of untreated or improperly treated human waste</li> </ul> </li> </ul>
Agricultural water practices	<ul style="list-style-type: none"> <li>• The type of application method (such as overhead sprinkler or spray, drip, furrow, flood, and seepage irrigation)</li> <li>• The time interval between the last direct application of agricultural water and harvest of the covered produce (other than sprouts)</li> </ul>
Crop characteristics	<ul style="list-style-type: none"> <li>• Susceptibility of the covered produce to surface adhesion or internalization of hazards</li> </ul>
Environmental conditions	<ul style="list-style-type: none"> <li>• Frequency of heavy rain or extreme weather events that may impact the agricultural water system – such as by stirring sediments that may contain human pathogens - or that may impact or damage produce. Damage can increase the susceptibility of produce to contamination.</li> <li>• Air temperatures</li> <li>• Sun (UV) exposure</li> </ul>
Other relevant factors	<ul style="list-style-type: none"> <li>• Including, if applicable, results of testing that could inform the assessment</li> </ul>



## Assessment Outcomes

Covered farms would use the outcomes of the pre-harvest agricultural water assessment to make written determinations about whether corrective or mitigation measures are needed to reduce the potential for contamination of produce or food contact surfaces with hazards associated with pre-harvest agricultural water. The following chart summarizes the proposed requirements for actions taken following agricultural water assessment determinations:

If you determine	Then you must
that your agricultural water is not safe or is not of adequate sanitary quality for intended use(s)	<ul style="list-style-type: none"> <li>• Immediately discontinue use(s)</li> </ul> <p style="text-align: center;"><i>And</i></p> <ul style="list-style-type: none"> <li>• Take corrective measures before resuming use of the water for pre-harvest activities</li> </ul>
there is one or more known or reasonably foreseeable hazards related to animal activity, BSAAOs, or untreated or improperly treated human waste for which mitigation is reasonably necessary	<ul style="list-style-type: none"> <li>• Implement mitigation measures promptly, and no later than the same growing season</li> </ul>
there is one or more known or reasonably foreseeable hazards not related to animal activity, BSAAOs, or untreated or improperly treated human waste, for which mitigation is reasonably necessary	<ul style="list-style-type: none"> <li>• Implement mitigation measures as soon as practicable and no later than the following year</li> </ul> <p style="text-align: center;"><i>Or</i></p> <ul style="list-style-type: none"> <li>• Test water as part of the assessment and implement measures, as needed, based on the outcome of the assessment</li> </ul>
that there are no known or reasonably foreseeable hazards for which mitigation is reasonably necessary	<ul style="list-style-type: none"> <li>• Inspect and adequately maintain the water system(s) regularly, and at least once each year</li> </ul>

## Corrective measures

If a covered farm determines that its pre-harvest agricultural water is not safe or of adequate sanitary quality for its intended use(s), it would be required to immediately discontinue such use. Corrective measures a farm could take in order to resume such use include:

- Re-inspecting the entire affected agricultural water system under the farm's control and, among other steps, making necessary changes; or
- Treating the water in accordance with the standards outlined in the Produce Safety Rule.

## Mitigation measures

If a covered farm determines that mitigation measures are necessary to reduce the potential for contamination of produce or food contact surfaces with hazards associated with their pre-harvest agricultural water, it would have various options to choose from, including:

- Making necessary changes such as repairs;
- Increasing the time interval between the last direct application of agricultural water and harvest of the covered produce to a minimum of 4 days (except when otherwise supported by test results or other scientifically valid information) to allow for microbial die-off;
- Increasing the time interval between harvest and the end of the storage period, to allow time for microbial die-off to occur.
  - Covered farms could also consider conducting other activities, such as commercial washing to reduce pathogens using appropriate microbial removal rates;
- Changing the method of water application to reduce the likelihood of produce contamination (such as changing from overhead spray to subsurface drip irrigation for certain crops);
- Treating the water in accordance with the standards outlined in the Produce Safety Rule; or
- Taking alternative mitigation measures supported by scientific data and information.

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## Reassessment

A covered farm would be required to conduct a reassessment each year in which the farm applies pre-harvest agricultural water to covered produce (other than sprouts), and anytime there is a significant change in its agricultural water systems, agricultural water practices, crop characteristics, environmental conditions, or other relevant factors that make it reasonably likely that a hazard will be introduced into or onto produce or food contact surfaces through direct application of pre-harvest agricultural water. For example, a change from an untreated ground water source to an untreated surface water source would be a significant change that would require a reassessment. The reassessment would evaluate the impacts of those changes on the factors discussed above, any new hazards identified, and the written determination of whether corrective or mitigation measures are needed to reduce the potential for contamination of produce or food contact surfaces.

## Records

Covered farms would be required to maintain written records of their pre-harvest agricultural water assessments, including descriptions of factors evaluated and their written determinations. Farms that test their pre-harvest agricultural water as part of their assessments would be required to maintain certain documentation related to their sampling and testing procedures. Additionally, supervisors would be required to review the written pre-harvest agricultural water assessments and the determinations made based on the outcomes of the assessments.

## Exemptions

Covered farms would be exempt from conducting a pre-harvest agricultural water assessment if they can demonstrate that their pre-harvest agricultural water for covered produce (other than sprouts):

- meets certain requirements that apply for harvest and post-harvest agricultural water (such as the microbial quality criterion and testing requirements for untreated ground water);
- is received from a public water system or supply that meets requirements established in the rule (provided that the farm has public water system results or certificates of compliance demonstrating that the water meets relevant requirements); or
- is treated in accordance with the standards outlined in the Produce Safety Rule.



# Food Safety Event Calendar

## Winter/Spring 2022

UF IFAS Extension  
UNIVERSITY of FLORIDA



**Produce Safety**  
ALLIANCE

### Produce Safety Alliance Grower Training

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

- **January 19<sup>th</sup>- Monticello**  
<https://psa011922.eventbrite.com>
- **February 10<sup>th</sup>- Homestead**  
<https://psa021022.eventbrite.com>
- **March 23<sup>rd</sup>- Belle Glade**  
<https://psa032322.eventbrite.com>
- **March 30<sup>th</sup>- Palmetto**  
<https://psa033022.eventbrite.com>
- **April 14<sup>th</sup>- Naples** <https://psa041422.eventbrite.com>

### 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.

- **February 1<sup>st</sup>-3<sup>rd</sup> – Remote PSA Training**  
<https://psa020122.eventbrite.com>
- **April 19<sup>th</sup>-21<sup>st</sup> – Remote PSA Training**  
<https://psa0419221.eventbrite.com>

### Remote-HACCP for Florida Fresh Fruit and Vegetable Packinghouses

This four-day virtual course focuses on HACCP principles for fruit and vegetable packinghouses.

- **January 25<sup>th</sup>-28<sup>th</sup>**  
<https://haccp012522.eventbrite.com>

**FSPCA**  
FOOD SAFETY PREVENTIVE CONTROLS ALLIANCE

### 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

- **April 5<sup>th</sup>-7<sup>th</sup> –Lake Alfred**  
<https://fspca040522.eventbrite.com>



### Bridging the Gaps: Approaches for Treating Water On-Farm

One day course with extension specialists to learn about approaches for treating water on-farm and implementing systems to meet requirements of the Produce Safety Rule

- **March 31<sup>st</sup>- Wimauma/Balm**  
<https://bridgingthegaps033122.eventbrite.com>

**OFRR**

### Sign up for an On-Farm Readiness Review

A free educational opportunity intended to prepare growers for FSMA Produce Safety Rule inspection. Participants must have taken a Produce Safety Alliance Grower Training. To sign up for an On-Farm Readiness Review, visit: [www.fdacs.gov/ofrr](http://www.fdacs.gov/ofrr).

For registration questions, contact [sarahmccoy@ufl.edu](mailto:sarahmccoy@ufl.edu).  
For general food safety questions, contact [UFFoodsafety@ifas.ufl.edu](mailto:UFFoodsafety@ifas.ufl.edu).





# Be Ready for Winter

BY CHRIS OSWALT

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The weather folks indicate that it looks to be weak to moderate La Nina conditions this winter. Typically having either the La Nina or El Nino conditions during the winter here in Florida is a good thing. This is in consideration of the historically lower probability of having a severe freezing temperatures during either of these ENSO (El Nino Southern Oscillation) conditions in Florida. I am sure there will be numerous reports of what this means for Florida specifically, warmer winter temperatures and less rainfall. You will not hear any mention of freezes and therein lies the rub, although they can occur any time during the winter, historically chances are greater when in near neutral ENSO winters. Notice I said greater which should not imply nonexistent during any given ENSO winter condition here in Florida.

Regardless of the ENSO conditions growers should have a citrus cold production plan in place. This plan should take into consideration practices growers need to implement now before a freeze and a cold protection action plan to execute the immediate days prior to and during the freeze event.

Before a freeze event is even forecasted growers using micro-sprinkler irrigation systems for cold protection should ensure that the systems are properly maintained and operational for use during a freeze event. Additional considerations that growers can do beforehand would be to manage their tree row middles by cleaning them up or mowing to enhance the soil absorption of solar energy and to enhance the natural flow of cold air out of the grove. When using fuel burning engines to run micro-sprinkler irrigation systems, these engines and pumping systems should be well-maintained operating properly along with enough fuel to run multiple days in the event of a major freeze event.

At the time of the freeze, growers need to have some idea of a threshold temperature or critical temperature at which they would want to protect their citrus trees. Usually this will depend on the type of freeze and the characteristics of the cold air mass that's entering the state. This type of information should come from a reliable source of weather forecast information. Once the freeze event begins, know the temperature and wind parameters which must be met for you to turn on, or off, your micro-sprinkler irrigation system. This source of information can be found at the Florida automated weather network or FAWN website (<https://fawn.ifas.ufl.edu/>). More detailed information on the cold protection of Florida citrus can be found in the 2021-22 Florida Citrus Protection Guide's chapter on citrus cold protection (<https://crec.ifas.ufl.edu/resources/production-guide/#hort>).



# 2021-2022 Flower Bud Induction Advisory

BY AJIA PAOLILLO

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The 2021-2022 Flower Bud Induction Advisories have begun. This advisory report by Dr. Tripti Vashisth of the UF/IFAS Citrus Research and Education Center provides growers with information used to predict the timing of flowering for the season. This information is based on the Citrus Flowering Monitor, which is a model that uses area FAWN stations, cultivar type, tree age, soil type, and the current date to give predictions of when flowering is expected to occur and how many bloom events to expect. The model shows the flower bud induction levels from October through April.

Trees begin to accumulate induction hours at temperatures below 68 degrees F. Induction hours are accumulated as we get hours of cooler weather. During the late fall and early winter bud differentiation occurs, which means the citrus buds will sprout as either flowers or vegetative growth. Warm spells that occur intermittently during times in which we typically encounter cold weather, can induce bud initiation resulting in multiple bloom events. Therefore, it is important for growers throughout the fall and winter to track how many induction hours the trees have accumulated and monitor weather forecasts for potential warm periods.

In the advisories, Dr. Vashisth provides a summary of current conditions and what this could mean for flowering events along with considerations for managing flowering in HLB infected trees. The advisories can be found at <https://crec.ifas.ufl.edu/flower-bud-induction/flower-bud-induction-2021/> . You can also run the Flowering Monitor using your specific information and the model can be found at <http://disc.ifas.ufl.edu/bloom/model.jsp> .

The information provided by these two resources can be used by growers in making decisions about spray timing for psyllid control before flowering flush and management of Post-Bloom Fruit Drop to reduce inoculum, especially during prolonged bloom periods and wet weather.

# Fresh Florida Citrus Growers, Packers, and Shippers Survey

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Funding has been provided from a Florida Citrus Packers, USDA Technical Assistance for Specialty Crops (TASC) grant to improve control of fresh citrus fruit decay. The specific objective of this survey is to gather information to guide research and Extension programs to improve decay control and extend the shelf life of fresh citrus fruit by:

1. Understanding the different practices Florida fresh citrus growers, packers, and shippers currently use
2. Documenting recent commercial experiences related to fresh citrus fruit decay
3. Understanding the most effective means of disseminating new information about decay control to industry

The survey is anonymous, and your participation is voluntary. Please contribute to our knowledge of citrus fruit decay and how you currently manage decay so that we can ultimately develop better control methods that will minimize potential future economic losses.

Access the survey at: [https://ufl.qualtrics.com/jfe/form/SV\\_cNQ7Iio28e2FW3X](https://ufl.qualtrics.com/jfe/form/SV_cNQ7Iio28e2FW3X)

Please contact Dr. Mark Ritenour if you experience any problems or have questions about the survey. You can contact Mark by phone at 772-577-7359 or by email at [ritenour@ufl.edu](mailto:ritenour@ufl.edu).

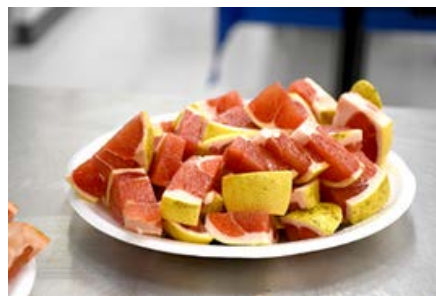
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## Upcoming Citrus Fruit Displays and Tastings

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Below are the dates and locations of the upcoming citrus fruit displays and tastings. Come out to see and taste the varieties on display and give your feedback. For more information on each of these events please visit this link to the New Varieties Development & Management Corporation <http://nvdmc.org/upcoming-events/> or contact Peter Chaires at [pchaires@nvdmc.org](mailto:pchaires@nvdmc.org)

- December 16, 2021 - 10am: UF/IFAS Citrus Research and Education Center Plant Improvement Team
- February 15, 2022 - 10am: UF/IFAS Citrus Research and Education Center Plant Improvement Team





# 2021-22 Fresh Fruit Trainings

## TRAINING TEAM CONTACT INFORMATION

**Amir Rezazadeh**  
(Questions & In-Person Scheduling)  
amir2558@ufl.edu  
772-462-1660

**Mark Ritenour**  
ritenour@ufl.edu  
772-577-7359

**Jamie Burrow**  
(Certificates/Technical Support)  
jdyates@ufl.edu  
863-956-8648

**Christine Kelly-Begazo**  
(Training Payment)  
ckellybe@ufl.edu  
772-226-4330 x3



- Please note that the Safari browser may not work properly with the program on a desktop or mobile device. It is recommended to use desktop Google Chrome or Firefox browsers.

- You will need to be able to print, scan, and upload the sign in sheet to complete the training modules.

- The cost is \$3.00 per a person total for as many modules as they wish to complete, or a maximum of \$100 per company.

- Certificates and training kits (hand sanitizer, mask, educational materials, and more) will be sent via FedEx.

## TRAININGS OFFERED IN ENGLISH AND SPANISH

Agricultural Tractor Safety		
Ladder Safety		
Worker Health, Hygiene, and Training		
Overview of Food Safety for Fresh Citrus		
Identification of Citrus Diseases in the Packinghouse		
Chemical Hazards- Packinghouse Personnel		
Worker Protection Standards- Field Crews and Harvesters		
CDC-Issued Guidance for COVID-19 in Agricultural Workplaces		



Virtual trainings can be accessed at  
<https://crec.ifas.ufl.edu/trainings/fresh-fruit/>

# Core Exam Review Class

January 6, 2022  
8:30 am to 12:30 pm



UF/IFAS DeSoto County Extension

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

2150 NE Roan St.  
Arcadia, FL 34266

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

Participants may take the Core exam after the class has ended.

### Registration

Advanced registration is required through Eventbrite

<https://bit.ly/3ExCcf7>

Class size is limited to 8 people.  
No walk-ins will be permitted.

4 Core CEUs for Restricted Use Pesticide licenses  
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](mailto:ajiacunningham@ufl.edu)

\*Eventbrite charges an additional fee when purchasing tickets



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or

Ajia Paolillo (863) 251-4763

[ajiacunningham@ufl.edu](mailto:ajiacunningham@ufl.edu)

or

Lourdes Pérez Cordero (863) 402-6540

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