

2019–2020 Florida Citrus Production Guide: Useful Websites and Mobile Apps¹

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Over the last decade, technology has changed rapidly, and today carrying a mobile device puts a computer in your hands. With the ever-evolving changes in technology, the agriculture industry is implementing tools to help growers make better management decisions for their crops. GPS equipment in tractors, computer programs to predict disease progression, and mobile phone apps to monitor weather are a few of the most common advances in technology being used.

Several web-based programs and mobile apps are available for free or at a cost. These programs can be used to assist in the decision-making process of maintaining Florida citrus groves. A variety of programs are available through the University of Florida, along with others from government and private entities. The listing here does not indicate general or specific endorsement or exclusion of a product or service, nor does it indicate approval by the University of Florida, the Institute of Food and Agricultural Sciences, or the Florida Cooperative Extension Service.

Websites

Citrus Copper Application Scheduler

<http://agroclimate.org/tools/citrus-copper-application-scheduler/>

The Citrus Copper Application Scheduler is designed to assist in determining the best time to make copper applications for citrus canker (see Chapter 31 of this guide, PP-182, *Citrus Canker*). By submitting rainfall data (your own records or selecting the nearest weather station), bloom date, and last copper application, a graph will be produced to show you the copper residue still on the fruit. Based on the graph, it will provide an estimate of the next best time to apply copper. The program uses several years of collected data to estimate fruit size based on rainfall and bloom date; therefore, the graph shows the amount of copper still on the fruit based on the fruit growth.

Florida Automated Weather Network (FAWN)

<https://fawn.ifas.ufl.edu/>

FAWN provides weather data for the entire state from weather stations maintained by UF/IFAS and local farm weather stations. For each weather station, the website provides current and historical readings of temperature, wind, rainfall, soil temperature at 10 cm, sunlight (in Rads), heat index, and dew point that you can view in table or graphical format. In addition, there are tools to assist the grower, including a cold-protection toolkit, forecast tracker,

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chill-hour accumulation, evapotranspiration, and irrigation scheduling. The FAWN Freeze Alert system is a new feature with a mobile phone alert of when to start and stop cold-protection irrigation. The Citrus Pesticide Application tool provides information for your site on the weather conditions for pesticide application to help you schedule a time for safe application. Click on the weather station closest to your site from the map on the home page, and access the tools on the left side of the page or from the tabs at the top of the page.

Weather Underground

<https://www.wunderground.com/>

Weather Underground, founded in 1995, supplies weather data to many of the leading media companies and millions of users across the globe. They have over 270,000 weather stations worldwide and provide weather data in real time. This website provides information ranging from current conditions to an interactive map including weather stations, radar, satellite, heat map, and rain accumulation. The website and app provide severe weather alerts, weather radio, and full customization of options on your desktop.

Citrus Microsprinkler Irrigation Scheduler

<https://fawn.ifas.ufl.edu/tools/irrigation/citrus/scheduler/>

The microsprinkler irrigation scheduler is part of the irrigation toolkit provided by FAWN. Users enter the tree spacing, details about emitters, soil type, irrigation depth, irrigation trigger depth, and the local FAWN station. The tool will then calculate a two-week irrigation schedule to maximize irrigation efficiency. Having a Mobile Irrigation Lab provide details on irrigation system efficiency will establish some of the information needed for calculations.

Flower Bud Induction Advisory and Decision Information System for Citrus

<https://crec.ifas.ufl.edu/flower-bud-induction/>

<http://disc.ifas.ufl.edu/bloom/>

Citrus flower bud growth and development is determined by winter temperatures that may fluctuate. Predicting the bloom date is key to managing production. The Flower Bud Induction Advisory takes the temperatures, updated every two weeks, and calculates the intensity and time of bloom as part of the Decision Information System for Citrus. Early warm periods after cool may stimulate a weak bloom, and later cool/warm conditions may stimulate additional blooms. The Citrus Flowering Monitor uses observed and

predicted weather patterns and other cultural metrics (such as cultivar, tree age, and soil type) to predict bloom. Users enter parameters specific to their grove to get a prediction. The Citrus Flowering Monitor also gives specific recommendations on how to manage bloom.

Citrus Advisory System

<http://agroclimate.org/tools/cas/>

Colletotrichum acutatum is a fungus that infects flowers on all species of citrus and causes Postbloom Fruit Drop (PFD). Severity on a given cultivar varies according to the time of bloom in relation to rainfall because spores produced on the blooms, leaves, buttons, and twigs splash onto other flowers to spread the disease. Preventative fungicides must be applied during bloom, but the number of fungicides available and the number of applications for each fungicide is limited, so timing of sprays is critical, especially with prolonged bloom periods. The Citrus Advisory System uses real-time weather data from FAWN to determine if risk conditions for PFD are low, moderate, or high, and gives specific fungicide spray recommendations according to the disease risk conditions. The user may set up an e-mail alert to be sent when an infection event has occurred to alert the user to check the model for the risk at their site.

Electronic Data Information Source (EDIS)

<https://edis.ifas.ufl.edu/>

The University of Florida (UF) Institute of Food and Agricultural Sciences (IFAS) has an extensive collection of informative documents available to print or view online. All documents are free to view and/or print. The site is called Electronic Data Information Source, or EDIS for short. The documents available cover a wide range of topics, including commercial agriculture, urban horticulture, consumer sciences, and youth programs, and they are written for a general audience.

Once at the site, you can use the search box in the upper right-hand corner for general topic searches. If you are looking for a specific document by title, author, or publication number, click the advanced search tab at the top of the home page and enter the requested information to take you directly to the desired publication.

For EDIS inquiries, you can contact any UF/IFAS Extension Office for assistance, or see the EDIS FAQ page for contact information for the EDIS production and editing staff: <http://edis.ifas.ufl.edu/faq/index.html>.

UF/IFAS Extension Citrus Agents

<http://citrusagents.ifas.ufl.edu>

This site is designed to disseminate knowledge and information to growers and the citrus community in the state of Florida. The information is intended to enhance the productivity, profitability, and environmental stewardship of Florida citrus growers through practice implementation, adoption, and education using applied citrus research.

Once at the site you will find access to current newsletters from each of the county agents that specialize in citrus as well as helpful links including upcoming events, continuing education unit (CEU) article series, citrus publications, Worker Protection Standards (WPS) resources, postbloom fruit drop presentations, and archived presentations. Additionally, a photo series is available that has monthly photos of the same trees from October 2010 to the present time to show the progression of citrus greening over time.

USDA Citrus Statistics

https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Citrus/

This website provides citrus production forecast monthly reports, forecasting methodology and development, citrus statistics, citrus abandoned acres, maturity yield and test results, citrus summaries, commercial citrus inventories, and historical reports dating back over 50 years.

Citrus Variety Collection, University of California Riverside

<https://citrusvariety.ucr.edu/varieties.html>

This website provides descriptions, characteristics, photos, sources, parentage/origins, rootstocks of accession, and season of maturity of selected citrus varieties by alphabetical order, category, or type. It also provides fruit quality evaluation data, and related articles, references, and other information for the selected citrus varieties.

Key to Diaprepes IPM in Florida Groves

<https://crec.ifas.ufl.edu/extension/diaprepes/key.shtml>

This website has three main sections: 1) Meeting Reports related to the Diaprepes Task Force for 2004–06; 2) Bibliography from the 1970 to the present; and, 3) Management Key for both pre- and post-plant decision. The website highlights the extensive work that has been conducted to

study the Diaprepes root weevil, the damage it causes, and various control options that have been recommended.

The Ultimate Citrus Page

<http://www.ultimatecitrus.com/>

UltimateCitrus.com is a comprehensive website on citrus news, benefits of the citrus industry to the environment, citrus growing regions, grower tools, fresh fruit, and processed juice. This website tells the story of Florida orange juice from the grove to your glass (how orange juice is made). It also provides lists of citrus organizations, information on citrus health, weather, freeze forecasting, recipes, citrus growers, and international citrus links.

Citrus ID

<http://idtools.org/id/citrus/citrusid/>

The Citrus ID website was created in 2011 and led by the USDA and North Carolina State University. Various people from the industry, extension, and government affiliations assisted in the content of the website. The website contains information on citrus pests and diseases with written information and photos. It contains fact sheets, a glossary, a photo gallery and more.

Mobile Apps

Radar Now!

This app puts a weather radar in your pocket. Users can quickly see an animated radar image and current conditions. Radar Now! provides National Weather Service (NWS) Enhanced Radar images from NOAA Radar sites located around the United States. This app is free with an optional paid upgrade to remove ads.

WUnderground

This app is the free companion for cell phones from Weather Underground. This app will provide current conditions at local weather stations, or you can drop a pin in your neighborhood for conditions there. You can follow things such as “feels like” temperatures, wind speed/direction, rain accumulation, and forecasts ranging from hourly to 10-day.

Hi-Def Radar

This simple yet powerful app lets you view real-time animated weather radar images in color on an interactive map. With this app you can view radar, clouds, wind speed, temperatures, water temperatures, and more. A great feature of this app is a Severe Weather Overlay that can be

placed over the map and watched as the weather moves toward the user's location.

Google Earth

The Google Earth app allows users to access directions and digital satellite maps. It includes a map ruler to determine length or distance and acreage. It is developed by Google LLC, and there is no cost for this app.

Fox 13 Sky Tower

This phone app has many features, including tracking hazardous weather with interactive maps and future weather movement. It also includes a lightning detector feature. Users can opt to receive alerts based on predefined settings and their location.