Take The WEATHER With You

New mobile-enhanced digital tool to supply growers with real-time data straight from the farm.

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Weather-related information is essential to Florida’s agricultural producers for making important decisions regarding the use of water for irrigation scheduling and cold protection. Since the mid 1990s, the Florida Automated Weather Network (FAWN), a program of UF/IFAS, has developed a variety of weather-related tools that can aid them in making irrigation and cold protection decisions.

Growers rely primarily on FAWN weather data and tools to plan for irrigation and freeze protection; and FAWN has been proven very useful in helping growers save both water and dollars. UF/IFAS estimates show use of FAWN tools on cold nights can potentially generate savings of millions of dollars and billions of gallons of water. However, some farms can be many miles from a FAWN site. Therefore, FAWN may not provide the level of specificity needed to ensure growers are operating their irrigation systems during optimal times. Differences in measurements between a farm and the closest FAWN site can cause growers to provide irrigation at amounts other than what is needed by the crop, which can lead to improper cold protection and fertilizer leaching. Site specific data from a network of grower-owned and maintained weather stations can maximize irrigation efficiency, and substantially reduce the amount of water and fuel or electricity used on freeze nights.

Team Coverage
In a collaborative project titled “My Florida Farm Weather,” FAWN is working with the Florida Department of Agriculture and Consumer Services (FDACS) Office
Agricultural Water Policy to deploy a high-resolution farm-based basic weather station network with the goal of providing growers with site-specific weather data that can be used to maximize water use for irrigation and cold protection. Growers enrolled in FDACS Best Management Practices are eligible to participate in the cost-share program and can choose from among several companies that have been approved by FAWN and FDACS to install the weather stations.

Each weather station measures air and dew point temperatures, wind speed and direction, relative humidity, and rainfall amount, and is eligible for up to five additional temperature sensors to be installed in other locations on the property. Eventually, a solar radiation sensor will be added to at least one weather station per farm to provide estimates of evapotranspiration for irrigation scheduling with FAWN irrigation scheduling tools.

Data are collected every 15 minutes and displayed on a webpage that shows data from the farm-based stations, FAWN stations, and other applicable stations.
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Sources (e.g., MADIS — the NOAA data clearinghouse) on an interactive Google map. The stations viewed on the map can be filtered by data source (FAWN, farm-based, etc.), and as the user zooms in and out, the density of displayed stations changes to accurately represent the size of the area viewed. Users can select a station to view all available data as well as location information about the station.

There's An App For That
FAWN also developed an app for the iPhone and Android platforms that allows users to view data on a smartphone in much the same way the data can be viewed on the webpage. One unique feature of the app is that it allows the user to manually submit a temperature from any location and to view that temperature on the map with the existing data. This is useful for growers that may want to travel around their property with a handheld thermometer, submit measured values, and then view the map in an effort to better understand the conditions overall and/or in specific locations. The app uses the location services of the phone to determine the location of the submitted value.

As the system is further developed, growers will have the capability to view their data on a graph, retrieve archived data, and use their data in FAWN irrigation and freeze protection tools. The webpage for this project can be found at Fawn.ifas.ufl.edu/FAWN, and growers interested in participating in this unique program can contact FAWN at info@fawn.ifas.ufl.edu.

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