

Cold Call

New technology delivers real-time weather data to your phone.

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Weather-related information is essential to Florida's agricultural producers for making important decisions. Growers routinely monitor current weather conditions to make informed decisions regarding the use of water for irrigation and cold protection as well as the application

of chemicals. Real-time monitoring and evaluation of air and wet bulb temperatures, for example, is a critical component of any cold protection program. The Florida Automated Weather Network (FAWN), a UF/IFAS program that has provided weather data to Florida agricultural users for the past 15 years, offers growers a variety of weather-related tools that can aid them in making these decisions.

The FAWN Cold Protection Toolkit provides step-by-step guidance for using water for cold protection, and typically requires that a user view specific web-based tools on a computer, and then take the results of those tools into the field for assistance in making important decisions regarding water use. On nights when temperatures are critically low, growers need to be away from the computer screen and in the field. Recognizing this need and the growing popularity of smartphones, FAWN developed the FAWN Freeze Alert Tool, which can notify a user via Short Message Service (SMS) text and/or eMail message when critical temperature conditions have occurred at a FAWN site.

The tool requires some user-specific information (name, eMail address, cell phone number, and carrier), selection of a FAWN site, and selection of a critical minimum temperature for their crop of interest. During each cold event (e.g., a night when the temperature decreases to the user critical temperature, or lower), the user receives a set of four messages:

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• **Alert 1:** When temperature at the FAWN site is 2°C above the user critical temperature.

• **Alert 2:** When temperature at the FAWN site is equal to the user critical temperature.

• **Alert 3:** When the temperature at the FAWN site is 2°C below the wet bulb based cutoff temperature.

• **Alert 4:** When the temperature at the FAWN site is equal to the wet bulb based cutoff temperature.

This tool provides valuable real-time information to managers, and because they are already in the field, it can be used immediately. It supports operation of irrigation systems only during those hours when water is needed. Systems can be engaged when the air temperature

nears the crop critical temperature, and disengaged when the crop critical and wet bulb temperatures are equal. 

William R. Lusher is the director of the Florida Automated Weather Network project.

Cool Tool

When proper cold protection programs are in place, savings can be substantial. For example, during relatively warm and cold winters, four to 20 hours of operation can be saved, which can translate into the following water savings.

Farm Size	Savings during warm winter	Savings during cold winter
100-acre farm, Water Savings	840k to 6.5M gallons	4.2M to 32.4M gallons
100-acre farm, Cost Savings	\$440 to \$3,392	\$2,200 to \$16,960
500-acre farm, Water Savings	4.2M to 32.4M gallons	21M to 162M gallons
500-acre farm, Cost Savings	\$2,200 to \$16,960	\$11,000 to \$84,800
1,000-acre farm, Water Savings	8.4M to 64.8M gallons	42M to 324M gallons
1,000-acre farm, Cost Savings	\$4,400 to \$33,920	\$22,000 to \$169,600

The FAWN Freeze Alert Tool is available at Fawn.ifas.ufl.edu/freeze_alert.

