Cool Tools

By William Lusher
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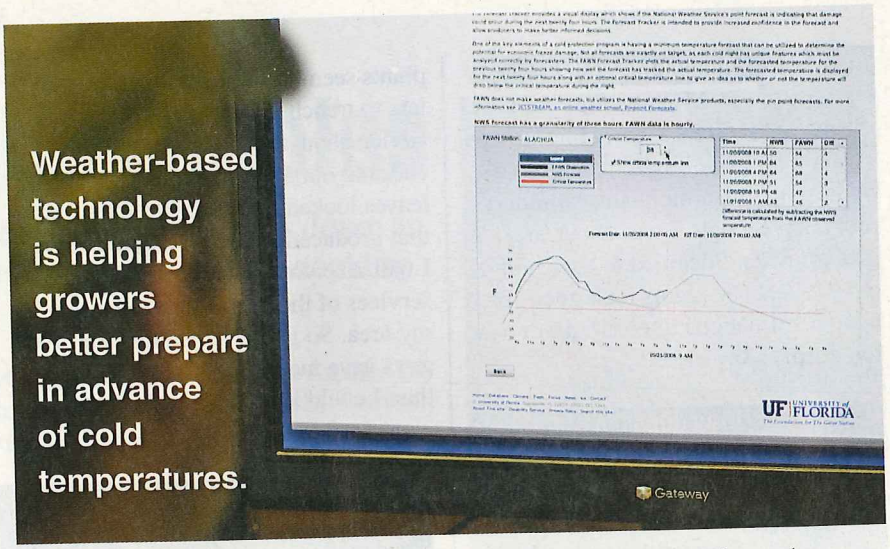


By far, the most widely used method of cold protection in Florida is the application of water. When using water for cold protection, growers must operate their irrigation systems to keep their crops from being damaged, while at the same time minimizing water use. The web-based Florida Automated Weather Network (FAWN), with financial and structural support from UF/IFAS, and guidance from the Florida Department of Agriculture and Consumer Services and the state's three water management districts, provides growers with a number of cold weather decision-making tools. It has been estimated use of these tools can save two hours of irrigation per cold event, which can help lead to potential savings of millions of dollars and billions of gallons of water.

For seasonal planning, helpful links drawing from several related sources are available on the FAWN website (**www.fawn.ifas.ufl.edu**), where growers can access climate outlooks and forecasts, monthly climate summaries, and many crop-specific resources such as chill accumulation hours and crop yield maps.

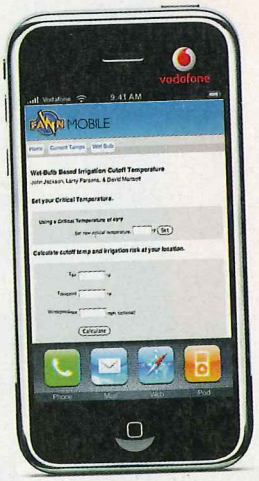
For specific cold events, the FAWN Cold Protection Toolkit (located in the FAWN Tools tab) provides guidance for using water to cold protect. This toolkit leads the grower through the entire cold-protection process, from assistance with determining a crop's critical minimum temperature, to retrieving forecasts, tracking individual

cold events, evaluating potential for evaporative cooling, and determining a safe irrigation cutoff temperature.

Important Implements

Key components of the Toolkit are the Minimum Overnight Temperature component, the Forecast Tracker, Evaporative Cooling Potential, and the Wet Bulb Based Irrigation Cutoff. The Minimum Overnight Temperature tool evaluates the likelihood of the forecasted temperature occurring using the Brunt equation to estimate the minimum overnight temperature at each FAWN site. On-site sunset air and dew point temperatures can be manually submitted for an estimate at the user's location.

The Forecast Tracker displays the National Weather Service forecasted temperature and the observed temperature at any FAWN site on a graph. This allows hour-by-hour evaluation of how well the forecasted temperature agrees with the actual temperature. The Evaporative Cooling Potential tool categorizes the evaporative cooling potential at each FAWN site.



Vital cold protection tool data delivered right to your cell phone is a new component from FAWN this season.

Finally, the Wet-Bulb Based Irrigation Cutoff Temperature tool provides a safe temperature at which your irrigation system can be turned off without risk of further damage. On-site air and dew point temperatures and wind speed can be manually submitted to determine the cutoff temperature at the user's location.

On The Radar

FAWN has several enhancements planned for its cold protection tools for the upcoming winter season. In particular, forecast locations will be presented on a map so users can select a forecast location by clicking a point on the map. FAWN also is exporting several components of the Cold Protection Toolkit to the mobile device platform, specifically the Minimum Overnight Temperature, the Evaporative Cooling Potential, and Wet Bulb Based Irrigation Cutoff tools — access via a mobile device allows use of the tools in the field.

In addition, growers in the Dover/Balm area can register for the FAWN Freeze Alert Tool Pilot Project, a text message/eMail alert system that will send a cell phone text message or eMail when certain criteria are met at a user-selected FAWN site. This tool will be opened to all FAWN sites once the pilot project is complete. Visit **www.myfawn.com/mobile** to learn more about this option. FLG

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