A Farm-based Weather Data Collection and Display System in Support of Freeze Protection of Florida Crops

W. Lusher*
University of Florida, IFAS, Gainesville, FL

Weather-related information is essential to Florida's agricultural producers for making important decisions regarding the use water for irrigation scheduling and cold protection. Since the mid 1990's, The Florida Automated Weather Network (FAWN), a program of the University of Florida Institute of Food and Agricultural Sciences (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. However, some farms can be many miles from a FAWN site. For this reason, FAWN worked with the Florida Department of Agriculture and Consumer Services (FDACS) Office of Agricultural Water Policy (OAWP) to deploy a high-resolution farm based basic weather station network. Called My Florida Farm Weather (MFFW), the network provides growers with site-specific weather data that can be used to maximize water used for irrigation and cold protection. Growers enrolled in FDACS Best Management Practices are eligible to participate in the program, and FDACS established a cost-share program to reimburse each participant a portion of the cost of the weather station. Growers with operations of 300 acres of production land or less can apply for one station and up to five additional temperature sensors. Those with larger operations can apply for one station and up to five additional temperature sensors per 300 acres of production land. The reimbursement schedule is detailed in Fig. 1. The FAWN and FDACS are working closely with several weather station vendors to ensure minimum sensor specifications are met. Each weather station measures air and dew point temperatures, wind speed and direction, relative humidity, and rainfall amount. A solar radiation sensor can be added to at least one weather station per farm to provide estimates of evapotranspiration for irrigation scheduling with FAWN Irrigation Schedulers. Data from each station is retrieved every 15 minutes and collected either through a local Internet connection or via cellular modem. The FAWN developed a web page that displays data from the farm-based stations, FAWN stations, and other applicable sources (e.g., the National Weather Service) on an interactive Google Map, as well as, an app for the iPhone and Android platforms.

---

Fig. 1. Cost-share reimbursement plan.

---

*Corresponding author; email: rlusher@ufl.edu