Reducing Irrigation During Freeze Events in Florida Citrus

Freezes in Florida can be very devastating to citrus crops. Orchards are protected from freeze events by running the irrigation system. Extension agents and university specialists have been providing educational programs from South Florida through Central Florida on the use of the Florida Agricultural Weather Network (FAWN) and locally acquired climatic data to precisely schedule irrigation for freeze protection.

Typically irrigation would be turned on when the temperature approached a critical level which could result in tree damage. The irrigation would be left on until the grower felt that there was no potential threat of damage left. The use of the FAWN "Cold Protection Tool Kit" takes into account the critical temperature, wind speed, air temperature and the wet-bulb temperature. The use of these tools allows the producer to confidently end the irrigation when the wet-bulb temperature reaches the critical temperature of the crop being protected.

The use of FAWN has become widely adopted by the citrus industry with roughly 79% of growers surveyed making use of these tools for scheduling freeze protection. It is estimated that the tool kit can reduce irrigation by two hours per freeze event. At a pumping rate of 2,100 gallons/hour/acre over the 525,000 acre citrus crop in Florida, a savings of over one billion gallons of water per hour can be realized. On average, Florida winters produce 5 nights requiring freeze protection for an average saving of (2 hours x 5) 10 hours. So the annual savings due to the adoption of the FAWN tools cold save upwards of 11 billion gallons of water annually.