



Modern central control systems can help superintendents make the most of their irrigation resources. Photo courtesy of Rain Bird



Maxing out your central control

Using central control on a golf course's irrigation systems is recognized in the industry as the most efficient means to keep turfgrass in top condition. However, many superintendents tend to use their systems only as a means to control their irrigation from a single source, relying on fixed run-times.

But modern central control systems have the ability to do so much more. For instance, systems currently on the market can track the weather, thus antiquating the fixed-run-time mindset. In addition, today's systems can manually and automatically operate the golf course irrigation system from a computer, preventing the need to individually operate irrigation clocks or two-wire decoders.

The individual run-time of each sprinkler also can be determined manually or automatically with central control. When manually setting run-times, the central control system only needs to know the established flow rate of each sprinkler to calculate how much water is being delivered to the course. In an automatic mode, the central control system depends on two critical data points — each sprinkler's precipitation rate and evapotranspiration (ET). Each one of these data points can affect the overall efficiency of your central control system.

The precipitation rate depends on several factors such as the spacing of the sprinkler (square or triangular), the head and row spacing (or area), and the flow rate. Precipitation rate measures how much water (in inches) the sprinkler can deliver to the plant in one hour.

Two methods can determine a sprinkler's precipitation rate. First, note the stated flow rate provided in the manufacturer's performance data for the sprinkler, and insert that rate into the precipitation calculation with area data. The second method is to conduct an irrigation audit of the sprinklers to find the actual precipitation rate. Results from an audit always will be more desirable because the audit takes into account

possible variations in the spacing of the sprinklers, wind and system pressure.

ET is the sum of water lost from the soil surface (evaporation) and water used by the plants (transpiration). This data point references the amount of ET lost over the last 24 hours.

Obtaining ET data helps best determine how much water needs to be given back to the plant by calculating each sprinkler's run-time. This is accomplished by dividing the daily ET rate by the sprinkler's precipitation rate. If clouds and drizzle were present the past day, then ET will be reduced, thereby reducing sprinkler run-times. If yesterday was hot and windy, ET most likely would be elevated, thereby increasing run-times.

If the system has single-head control, an adjustment on ET can be made to one or more sprinklers to account for the different micro-climates that may be found on the golf course. For instance, a shady area of the course could mean a 15 percent reduction in the ET affecting those particular sprinklers. An area receiving the full effects of the sun could mean a 15 percent increase for certain sprinklers.

Whether measured in inches or millimeters, irrigation should only give back to the plant the water it needs — no more, no less. The knowledge and experience of the superintendent combined with a central control system that utilizes reliable precipitation and ET data will make the irrigation system much more efficient.

GCM

John Sais is a senior technical trainer with Rain Bird.

NEWS & notes

Ewing Irrigation, Golf & Industrial has appointed Chris Wright to serve as its water management and conservation advisor for the Western United States. Previously a regional sales manager for a sprinkler company, Wright will focus on partnerships with water districts and municipalities to create rebate programs and to promote water-efficient practices. He also will work to help architects eliminate runoff, over-watering and water waste.

Brent Mecham is the new industry development director for the Irrigation Association. A Colorado water conservation specialist and irrigation instructor, Mecham will lead the association's Education Foundation and work to streamline curriculum development. He is an IA supervising regional authorized instructor and is qualified to teach most of its turf and landscape irrigation classes. He previously worked as landscape water management and conservation specialist for the Colorado Water Conservancy district.



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