

New Irrigation Technologies – Jim White, Ewing Irrigation

Water efficient practices focus on two areas – The Distribution System and the Control System.

The Distribution System:

What's important for an efficient irrigation system? A well designed system is the first step and includes correct spacing and layout, pressure, flow and velocity. The system should provide uniform coverage and the owner should provide regular maintenance.

Sprays and rotors deliver water in gallons per minute while drip systems deliver in gallons per hour, providing a slow application of water directly to the plant's root zone. Retrofit kits are available so you can replace sprays and rotors with drip heads when working with plants and shrubs.

When watering larger areas with grass, sprays and rotors are needed. An exciting new advancement is a multi-stream, multi-trajectory rotating nozzle. The Rotator applies water at approximately 1/3 the rate of spray heads. This is a more natural rate of application, .45" per hour. The lower application rate is more in line with typical soil intake rates. Matching the application rate with the intake rate radically reduces the probability of runoff, keeping the water applied in the landscape and out of the gutter. This reduces waste!

The multiple rotating streams also deter instantaneous application rates which apply a significant amount of water in one place all at the same time. The large droplet size, applied slowly, massages the soil and adds oxygen to the soil rather than depleting it. These characteristics promote a healthy environment for beneficial microbes and ultimately healthy plant material.

The Control System:

There are two types – Smart Controllers that are weather and soil moisture-based and conventional "water conserving" controllers. To use controllers effectively you need to know the precipitation rate, the soil type and depth (water-holding capacity), the distribution system efficiency and the plants' watering requirements.

Soil Moisture Sensor Control Systems – are the simplest systems and are linked to a soil moisture sensor. They can be added to standard controllers. They suspend irrigation when the soil moisture exceeds a set threshold. Installation and setup are fairly simple.

Newest on the market are a wide variety of ET Control Systems:

- Internet-based ET Control Systems
- ET Based Control Systems with Off-Site Weather Signal – real-time weather data is gathered from weather sources and deliver site-specific weather information via wireless data transmission.
- ET Based Control Systems with On-Site Weather Signal – weather data is gathered from an on-site weather gathering device.
- Central Control Systems "State of the Art" in Irrigation Control

The ET controllers are much more complicated to use; even many landscape professionals don't completely understand how to accurately set them up. A controller can only save water if it is installed and set correctly for the site. If planning to install an ET controller it's best to hire an irrigation professional who has been properly trained and certified.