WaterSense-AWE Webinar Recap

Reducing Outdoor Water Use with Microirrigation

TODAY'S SPEAKERS	ORIGINAL DATE: OCTOBER 11, 2018
• **Mary Ann Dickinson** – President and CEO, Alliance for Water Efficiency • **Julius Duncan** – Environmental Engineer, EPA WaterSense • **Dr. Bernd Leinauer** – Professor and Extension Turfgrass Specialist, New Mexico State University	WaterSense Webinars Webinar Recording on YouTube

WEBINAR SUMMARY

In the introduction, Ms. Dickinson provided an update on the Alliance for Water Efficiency's (AWE's) Outdoor Water Savings Research Initiative. AWE has been researching water savings data that could lead to the direct implementation of programs. Phase one involved gathering existing research from around the nation and identifying gaps. In phase two they selected projects that provided new empirical research that was relevant, statistically validated, and peer reviewed. The report is posted on the AWE website (http://www.allianceforwaterefficiency.org/research.aspx). Studies include a peak demand study, landscape transformation, and drought restrictions.

New WaterSense Materials at https://www.epa.gov/watersense

- Microirrigation guide for irrigation professionals
- Microirrigation guide for homeowners
- Irrigation controller brochure

Following that, Mr. Duncan went over WaterSense labeled products, resources to help reduce water use, and new marketing materials developed at WaterSense. Microirrigation (commonly referred to as drip irrigation), has emitters directly placed at the root zone of plants, for more efficient watering. WaterSense has developed two guides for irrigation professionals and homeowners that give information on the installation, scheduling, and maintenance of microirrigation. The guide for irrigation professionals covers recommended installation tips, description of emitter types, and tips for troubleshooting. The guide for homeowners can be used by the do-it-yourselfer interested in microirrigation and information for homeowners that want to work with irrigation professionals.

FEATURED SPEAKER: DR. BERND LEINAUER

Subsurface drip irrigation (SDI) can be installed on a variety of landscapes and golf courses, and can be helpful to turf landscapes, native landscapes, vegetable gardens, and flower gardens. The goal is to increase the irrigation efficiency which reduces the amount of water that is lost or wasted. The irrigation efficiency of sprinklers can be low, causing dry patches in the landscape when spaced too far apart or waste water when too close together. Microirrigation supplies water directly to the root zone, avoiding runoff, overspray, and water waste. For turfgrass, SDI can provide a uniform coverage of irrigation water beneath the surface of the grass, reducing the volume of wasted water.

The SDI system was tested on test plots of Seashore Paspallum turfgrass and Bermudagrass against sprinkler irrigation. For three years the plots were irrigated at 50 percent of evapotranspiration. It was found that the grass with SDI was greener and of a greater visual appearance with fewer brown patches.

Case Study: Las Campanas, NM

SDI was installed on a total of 12 different tee boxes with 4 different products (each replicated three times) for a side-by-side comparison. One installation method was to install the SDI system first and then lay the sod on top. The other method involved trenching into the existing turfgrass to put down the irrigation lines. Trenching into the turf took longer for the turf to recover to ideal uniformity. In sandy soil the irrigation should not be installed too deep (only 3 – 4 inches) to have the best distribution. In the test period the installed drip irrigation was better at supplying the plant required water compared to the control sprinkler irrigation.

SDI Challenges

Striping can occur when the drip lines are installed too far apart for the grass. The grass will grow directly over the irrigation line but not in the space between where water does not reach. Roots can sometimes get into the emitters causing the system to clog or break. If the lines are not installed deep enough then they will be exposed through the surface and could cause damage.

CONCLUSION

Subsurface drip irrigation can be used to irrigate turf efficiently. It can also be used in combination with saline water, ground water, or reclaimed water. SDI can be a useful alternative to traditional sprinkler systems if installed, monitored, and maintained properly. Public outreach by utilities and irrigation professionals can help to educate the public and promote the technology.

SPEAKER QUESTIONS AND ANSWERS

Q: Is the integrity of the SDI components a concern during the winter months?

A: Dr. Leinauer responded that up North they do blow out the system for the winter. The drip lines are flexible PVC and allow for freezing and thawing. The header lines, if they are solid PVC, will need to be prepared for the winter.

Q: Are there any issues with subsurface drip using reclaimed water?

A: Dr. Leinauer responded that there have not been any issues noticed with the systems thus far. But with the higher salinity of reclaimed water, the grass in the landscape will need more monitoring.

Q: Is the project more successful when sod is installed versus seed?

A: Dr. Leinauer responded that yes, this is correct. In projects it was found that sod establishes quicker. Comparing sprinkler to drip irrigation for establishment from seed, drip irrigation resulted in successful establishment from seed but took longer than sprinkler irrigation.

Q: Why should I use SDI? What are the pros and cons of SDI?

A: Dr. Leinauer responded that subsurface drip irrigation systems irrigate more efficiently because they apply water from emitters placed within the rootzone. Advantages of SDI include the uninterrupted use of the turf area during irrigation, energy savings as a result of lower operating water pressure, no human exposure to irrigation water, reduced disease pressure, and potential water savings because irrigation is limited to the turf area and is not affected by wind drift or evaporation. Arguments against the use of SDI include high installation costs, difficulty in determining spacing and depth of pipes or emitters, a perceived inability to establish turf from seed or sod when using SDI, a perceived interference with regular maintenance, and a perceived inability to leach salts.