

# MANAGING IRRIGATION FOR ORNAMENTAL CROPS

Most greenhouse and nursery crops rely on irrigation, but the availability and quality of water for irrigation is decreasing. Drought, pollution, competition for water resources, and concerns about environmental impacts are making it necessary for greenhouses and nurseries to better manage their water use.

To address these challenges, 21 land-grant universities are leading a Multistate Research Project. Researchers and Extension specialists are working together to find innovative tools and strategies and share them with growers.

## IMPROVING IRRIGATION EFFICIENCY

To understand water use patterns, researchers surveyed nearly 400 ornamental nursery and greenhouse crop growers nationwide. Since then, the group has been busy developing tools and practices that will help ornamental crop growers conserve water, minimize impacts on the environment, and sustain production.

The group's research on the water requirements of plants and the effects of different growing media, container types, and environmental conditions has led to recommendations and tools that are helping growers adjust irrigation timing and amounts to be more efficient. Researchers have also tested ways to use alternative water sources and manage runoff from nurseries and greenhouses. The group plans to conduct a follow up survey in 2022 to find out whether growers have adopted these new tools and strategies.



## NEW IRRIGATION MANAGEMENT TOOLS & STRATEGIES

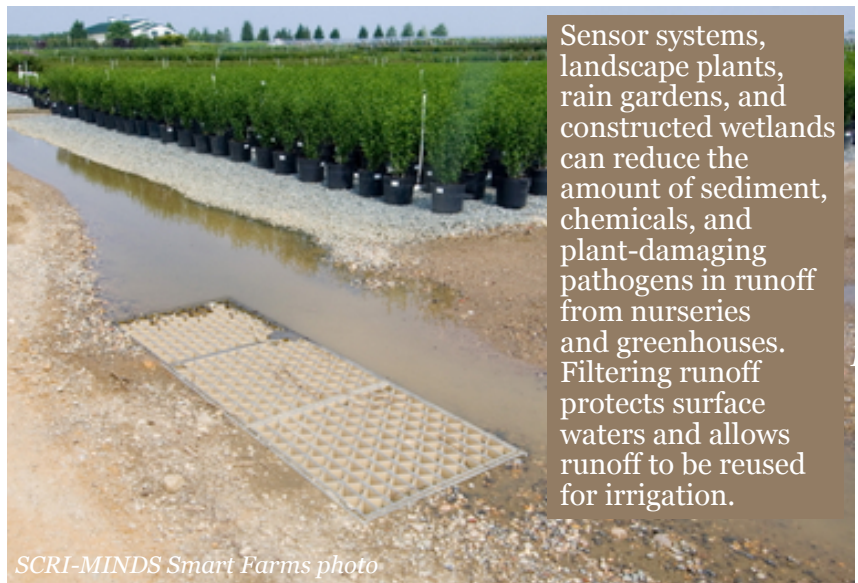
GroZoneTracker.com, a free mobile app, helps growers record, track, and share information, making it easier to quickly fine tune irrigation practices.

*iStock photo*



Sensor systems, landscape plants, rain gardens, and constructed wetlands can reduce the amount of sediment, chemicals, and plant-damaging pathogens in runoff from nurseries and greenhouses. Filtering runoff protects surface waters and allows runoff to be reused for irrigation.

*SCRI-MINDS Smart Farms photo*



Researchers found ways to use alternative sources like laundry water, pond water, and saline water for nursery and greenhouse irrigation, saving millions of gallons of freshwater for other uses.

*Horticultural Research Institute photo*



Growers using a new wireless soil moisture sensor system have seen shorter production cycles, less disease, better plant quality, and large water savings. One user reduced irrigation by 50%, saving 43 million gallons of water. Sensors can also reduce required fertilizer applications by 50%, which could save ornamental growers millions of dollars per year.

*Photo by Edwin Remsburg, University of Maryland*



Multistate Research Project *NC-1186: Water Management and Quality for Ornamental Crop Production and Health* is supported, in part, through USDA's NIFA by the Multistate Research Fund established in 1998 by the Agricultural Research, Extension, and Education Reform Act to encourage and enhance multistate, multidisciplinary research on critical national or regional issues. Additional funds were provided by contracts and grants. Project members have led or are leading 41 grants totaling more than \$21.6 million from the USDA, State Departments of Agriculture, nursery and landscape associations, garden centers, public and private foundations, and industry sources.

Participating institutions include Auburn University, University of California-Davis, University of California-Riverside, Clemson University, Colorado State University, University of Connecticut-Storrs, University of Florida, Kansas State University, University of Kentucky, Louisiana State University, University of Maryland, University of Massachusetts, Michigan State University, Mississippi State University, North Carolina State University, Purdue University, Rutgers University, Tennessee Cooperative Extension, Texas A&M University AgriLife Research, Virginia Polytechnic Institute and State University, University of Wisconsin, USDA-ARS, and the U.S. Forest Service.

For more information, visit: [bit.ly/nursery-greenhouse-water-mgmt](http://bit.ly/nursery-greenhouse-water-mgmt)