

Project Title: Water Management for Horticultural Operations

Project Leader: Amanda Bayer

Project Overview

Improving water management is of increasing importance in horticultural operations. A growing global population and changes in water availability will mean that less water will be available for ornamental plant production. There are also a growing number of federal and state regulations regarding water use and runoff from production areas. Better irrigation and fertilization management practices will help to limit the environmental impact of container plant production by limiting the runoff of water and nutrients from nurseries. Growers require assistance in meeting regulations which will serve to improve water quality in local ecosystems.

Situation & Priorities

To help growers improve irrigation practices, the current state of nursery production in New England must be assessed in order to identify key areas for improvement. Disseminating educational materials for nursery growers will also create opportunities to help direct future research on identified irrigation management issues. Sustainable production techniques will be shared with the next cohort of nursery producers so that they can help implement sustainable practices as they move out into the industry.

The ultimate goal of this program will be to improve irrigation management in Massachusetts and New England nurseries. More efficient irrigation will result in less waste of water and reduced inputs for production. The range of possible environmental benefits include less runoff from production areas which will decrease the nutrient, pesticides, and fungicides that enter local ecosystems. I will also be investigating ways to improve water and nutrient management in the landscape. Related research will consider deficit irrigation as a means of growth control instead of using plant growth regulators. This will reduce the environmental impact of production as well as production costs.

Activity Summary 2016

- Attending relevant meetings - MNLA Education Committee (5)
- Contribute content and articles on water management for existing Extension and Statewide publications (Landscape Message, HortNotes, and Garden Clippings, and MNLA “Grow Pro News”) (10)
- New England Grows Spring Session - Transitioning container grown plants to the landscape (1)

- CNLA Winter Symposium - Improving irrigation efficiency with sensor technology (1)
- New England Regional Turfgrass Conference - Producing Great Landscapes with less inputs (1)
- Weston Nurseries Green-Up Academy - Creating more sustainable landscapes (1)
- UMass Extension Employee Training for Garden Retailers - Choosing plants for difficult areas (1)
- UMass Extension Landscape Message (23)
- Reviewed the UMass Extension Landscape Cultural Practices handbook in preparation for editing (1)

Total educational contacts

	Adult Contacts
Direct Contacts	331
Indirect Contacts (Print, Web, etc...)	4500

Narrative Summary and Impact

Managing water resources in ornamental plant production is becoming increasingly important as water availability becomes more limited as a result of a growing global population and climate change. There are also a growing number of federal and state regulations regarding water use and nutrient runoff from production areas. Increasing irrigation efficiency will help growers to more sustainably use available resources while reducing the water and nutrient runoff from nurseries. Reduced runoff can also help improve water quality in local ecosystems. Informative materials specifically for nursery growers are being developed to help growers improve irrigation efficiency and water management practices. Feedback from growers will also be used to help direct future research.

Our goals are to develop effective outreach programs which a) change behavior and implement best management practices and b) increase resource use-efficiency and minimize environmental impacts of practices. We also intend to disseminate research results to the academic community through traditional means (e.g. peer reviewed journals, and extension programs) and also more novel web-based methods (knowledge centers, eXtension and social networks).

Collaborating Organizations

- **Massachusetts Flower Growers Association**
- **Massachusetts Nursery and Landscape Association**
- **New England Nursery Association**

