

Project: Water Management for Horticultural Operations

Project Leader: Amanda Bayer

Project Overview

Improving water and resource 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 and maintenance. 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. Landscape companies are also needing to improve the sustainability of their practices in order to adjust to changing resource availability, consumer pressures, and to be more environmentally friendly.

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. A better understanding of plant needs during and after landscape establishment is needed to help improve the sustainability of landscape practices.

The ultimate goal of this program will be to improve resource use and management in Massachusetts and New England nurseries and landscapes. More efficient irrigation will result in less waste of water and recued 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 and ways to improve plant survival in the landscape.

Activity Summary - 2018

- Arrange/Attend meetings and field days on plant production and landscaping. (2)
- Survey developed and distributed to members of the Green Industry in Massachusetts to assess the issues most important in the state. A special focus was given to questions regarding water issues. (227)
- Answer emails and phone calls from growers and landscapers on various production and landscape topics. (27)

- Attended the MNLA Winter Forum and moderated 2 sessions. Attended New England Grows and moderated 2 sessions and worked at the Ask Extension Booth. (5)
- Contribute relevant articles to HortNotes, Garden Clippings, the Landscape Message, and MNLA Pro Grow News (28)
- Deliver educational presentations on improving resource management in nursery production and landscapes. (5)
- An update of the Cultural Practice Handbook began in 2018 and is still in revision (3)
- Applied research on substrate amendments for improving water holding capacity and irrigation reduction. (1)
- Applied research on water and irrigation requirements of herbaceous perennials. (2)
- Advising graduate student as committee member (1)
- Peer reviewed scientific journal publications (2)
- Creation of UMass Extension Plant Identification Database (Woody Plants) (1)

Educational contacts

	Adult Contacts	Youth Contacts
In Person	494	
Indirect Contacts (Print, Web, etc...)	8000	

Narrative Summary - 2018

Water management in the Green Industries is increasingly important due to a number of factors including droughts, climate change, and environmental concerns. There is also a growing awareness in the general public of the impact of the Green Industries on the environment. Horticultural operations are looking to more efficiently manage resources to improve sustainability. Specific activities in the past year have focused on outreach via industry related presentations and publications. Association and work with state and regional organization such as the Massachusetts Nursery and Landscape Association and New England Grows helps the project to stay up to date on industry needs. The survey developed and administered in 2018 will help direct research and outreach for the project in the coming year. As of 2018 the survey has had over 200 respondents and will remain open through February 2019.

The goal of the project continues to be 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 continue 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 and social networks)

Collaborating Organizations

- **(AG) Massachusetts Flower Growers Association**
- **(AG) Massachusetts Nursery and Landscape Association**
- **(AG) New England Nursery Association**

