

LESS WATER AND HIGH-QUALITY PLANTS WITH PRECISION IRRIGATION

Irrigation efficiency in nurseries: Towards a more sustainable approach



Project Summary

Irrigation is one of the most important factors for nursery profitability. Yet, most growers base their decision making on visual appearance or pot weight. This project is looking to optimize irrigation management using wireless tensiometers combined with different automation strategies to develop recommendations and best practices for clustering plants in nurseries. Research conducted so far has shown 50% less water used with tensiometers with no effect on plant growth, confirming that automated irrigation can be used to produce high quality plants. While clustering according to water needs is an efficient approach to reduce water use, attention must be paid when pairing the plants as different species with the same overall water needs may not require the same amount of water at the same time during a season.

The way we water plants in a nursery is one of the most important factors for being profitable. Even so, nursery water management largely depends on personal judgment rather than precise measurements. Also, it is an added challenge to optimally water a wide variety of species with different water needs that are being grown together. It is essential for industry to move towards precision irrigation to help growers save on water and reduce their environmental impacts to meet regulations.

Researchers hope to identify different options that can be used by growers regardless of the equipment or resources available to them.

The objectives of this project were to:

- Improve irrigation management using wireless tensiometers
- Recommend best practices for grouping plant species based on their water needs
- Compare different automation strategies using tensiometers





What you need to know

By using precision irrigation in a nursery setting, you can:

- **Decrease water use by 50%** without affecting plant growth due to decreased water leaching and evapotranspiration
- **Deal with different watering needs** throughout a season – if two plants require the same amount of water during a season, they may not need it at the same time
- **Automate irrigation** either by using evapotranspiration prediction or new generation wireless tensiometers to produce high quality plants



Watch a presentation on this research project by clicking [here](#).

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Research Takeaways

- Using tensiometers is very efficient
- Evapotranspiration-based irrigation is a great alternative
- 'Best clustering for 100 species' chart will be made available soon



Read more about it

[Plantes ornementales – L'irrigation de précision en pépinière ; vers une approche plus durable](#) [French Only]

COHA is advancing the Canadian ornamental horticulture sector through research and innovation

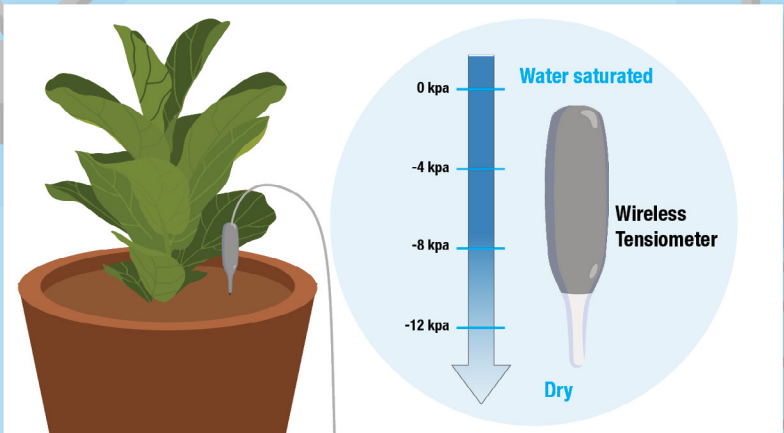
This project is part of [COHA's Research Cluster 3](#) – Accelerating Green Plant Innovation for Environmental and Economic Benefit Cluster – enabling the sector to **adapt to climate change**, **enhance environmental sustainability**, and **increase competitiveness through productivity gains**.

COHA is a proactive alliance between the *Canadian Nursery Landscape Association (CNLA)*, *Québec Vert (QV)*, and the *Flowers Canada Growers (FCG)* that provides a unified voice with a bird's eye view over the largest and most significant sector of horticulture in Canada. Since 2008, COHA has successfully hosted research clusters through the AgriScience Program as part of their industry-driven and solution-oriented approach to support the Canadian ornamental horticulture sector by bringing together government, industry, and academia to solve real-world problems.

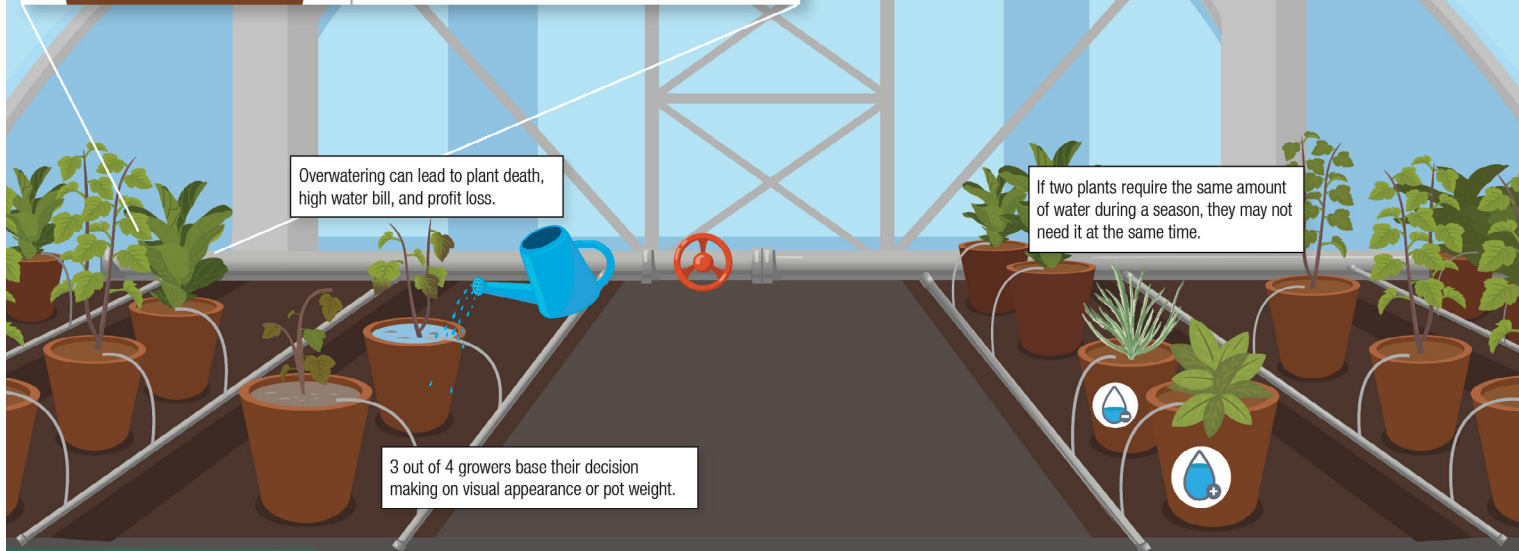




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- ✓ Precision irrigation decreases water use by 50% without affecting plant growth.
- ✓ Best clustering practices for 100 different species helps to manage different water needs.
- ✓ Wireless tensiometers are a cost-effective and environmentally approach to growing different plants together.



Overwatering can lead to plant death, high water bill, and profit loss.

If two plants require the same amount of water during a season, they may not need it at the same time.

3 out of 4 growers base their decision making on visual appearance or pot weight.