Evaluation of water stress pre-conditioning and mycorrhizal inoculation on transplant success in woody perennial crops.

Undergraduate Research Assistantship (2019)

14-16 weeks (May 1st)

$16-$18/hr., dependent upon qualifications

Irrigation of nursery plants in Canada consumes approximately 180 million m$^3$ of water annually. This represents about 95% of the water used by the ornamental horticulture sector. Even with the ever-increasing use of drip irrigation, which delivers water directly to the root zone of each plant, there is still significant room for improvement in irrigation scheduling management. Our recent research has shown that nursery operations typically irrigate between 40-60% more than is necessary to maintain good growth in nursery trees. This over watering not only leads to various environmental concerns (e.g., nutrient runoff), it also conditions the trees to a watering regime that is not sustainable or even feasible upon transplanting to the customer site. This can lead to transplant failure rates upwards of 90% for such applications as roadside restoration. The current project builds on our previous work that uses controlled water restriction to condition the plants to less hospitable conditions expected during final transplanting. Further, a consortium of beneficial fungi will also be applied to help improve transplant success.

The successful candidate will assist researchers with field site maintenance, sample collection, sample preparation, data analysis, and other miscellaneous duties. Weekend work may occasionally be involved. The candidate will also be involved in lab work (microscopy) focusing on the enumeration of mycorrhizae on/in the roots of plants.

- Introductory Plant Science/Biology (understanding of plant-water relations)
- Chemistry a/o Microbiology
- Proficiency in collecting, organizing and reporting data in both written and electronic forms
- Attention to detail
- Demonstrated ability in using spreadsheets to manage large datasets.

Complimentary undergraduate programs include: BSc Agriculture (Crop, Hort, Turfgrass), Environmental Engineering, Water Resources Engineering, Environmental Sciences, and Environmental Resources Management.

- Valid drivers license (G)
- WHMIS, Laboratory Safety, Workers Health and Safety on-line courses (will be provided)

Interested candidates must apply through Student Financial Services, URA program - ExperienceGuelph. Job ID 66400.

https://www.uoguelph.ca/registrar/studentfinance/ura/apply