Project Title

Resource recovery and inedible biomass management in high intensity vertical farming applications.

Job Title/Position

Summer Research Intern (2019); Graduate Candidate (MSc) F’19

Duration

14-16 weeks (May 1st)

Remuneration

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

Project Description

Vertical farming (VF) has moved from the agricultural fringe to a position of commercial, economic, and social significance. Borne of the need for tight environment control, these farms operate in [relatively] sealed indoor facilities; as such, there is an intrinsic requirement for active addition of carbon dioxide (CO2), water, and nutrients to maintain production. A portion of these inputs become the biomass that is sold to consumers, while the rest become locked in the inedible fractions. This inedible biomass is a considerable waste management concern for VF operators. Developing a targeted VF on sight composting system and associated operating procedures would address the waste management issues while allowing for the recovery of CO2, water, and nutrients to support subsequent crop production.

The overarching goal of the project is to develop innovative approaches for resource recovery (CO2, water, nutrients) and cost reductions in high intensity urban agriculture through the management and processing of waste biomass at the site of production. In doing so the project will lead to increased production efficiency in VF operations, reduced greenhouse gas production (i.e., methane from anaerobic biomass decomposition in landfills; reduced transportation of waste), and alternative/new revenue streams (products and services) for growers.

Job Description/Responsibilities

The successful candidate will assist researchers with waste biomass characterization, sample preparation and analysis, data collection and analysis, and other miscellaneous duties. Travel to and from our industrial partners facility may be required. Weekend work may occasionally be involved.

Preferred Qualifications/courses

- Introductory level Soil Science
- Introductory Plant Science/Biology (understanding of plant-water relations)
- Chemistry a/o Microbiology
- Electronics knowledge and mechanical aptitude
- 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.

Required Qualifications

- Valid drivers license (G)
- WHMIS, Laboratory Safety, Workers Health and Safety on-line courses (will be provided)
To Apply
Please send resume, recent unofficial transcript and cover letter to:

Theresa Rondeau Vuk, Program Manager, CESRF
Subject line: Summer Intern 2019 – OMAFRA Inedible Biomass Management
Email: trondeau@uoguelph.ca