HOLLAND MARSH
Growers' Association

Moving Forward With Sustainability

Project Updates

AUGUST 2021 | ONTARIO, CANADA

The Project is funded by the Ontario Ministry of Agriculture, Food and Rural Affairs. The information herein reflects the views of the authors and does not necessarily reflect the views of the Government of Ontario.

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***FROM** OUR FARMS*
TO YOUR TABLES

The Holland Marsh Growers' Association helps to promote the Holland Marsh's produce, partners with researchers on projects that impact the growers, help navigate applicable laws and government programs, and work with government and agencies from the municipal to federal levels.

PROJECT UPDATES

The Holland Marsh Growers' Association (HMGA) received one year funding to deliver on several projects addressing the sustainability of vegetable production. The variety of projects meant some were targeted towards packers, other to growers and some to both segments.

The following are brief summaries on each project.

1. WATER USE EFFICIENCIES

Clearly applicable to both growers (irrigation) and packers, the study addresses areas where proponents can assess how much water is used and how efficiently. The site-specific data generated are mostly of use to the individual facility while all growers and packers can learn from the summary findings and assess their own situation. The bulk of this work will occur from August to October 2021. With respect to irrigation, there is an element of precision ag involved as we analyze post irrigation satellite imaging to confirm the distribution of water over a growing crop.

2. SOIL HEALTH

It is very timely to discuss soil health as the fall period approaches and growers are encouraged to plant cover crops. Seed variety choices and delivery mechanisms are so important to fit your production systems. Growers are recommended to visit a website sharing Ontario data is the Cover Crop Decision Tool offered through the Midwest Cover Crop Council: mccc.msu.edu/covercroptool

This project will continue into the fall, with a focus on later season planting after onion and carrot harvest. We expect good results after onions, though we expect later harvested carrots may be a challenge. In addition to planting cover crops, a trial will assess a soil amendment on a carrot, broccoli, and onion field.

Finally, soil health testing was done at several sites and results will be analyzed with respect to chemical, physical and soil health parameters.

Activity 2: Cover Crop (White Mustard)

3. REDUCING WASTE FROM VEGETABLE PRODUCTION AND PROCESSING

This is a fancy title to deal with carrot tops and rejects at washing/packaging, as well as plastic use and recycling. Many growers and packers have provided interesting input on both aspects. The data collection phase is now complete, and the research team is moving into analysis. In the end, we aim to identify opportunities for higher market value for waste; turning waste into a product, also market outlets for one-time use plastics from packaging, hoop house covers and field use.

4. CONTROLLING SOIL LOSS DURING HARVEST AND IN PROCESS WATER

The goal of this project is to leave more soils in our fields and to remove any additional soil on root vegetables prior to washing. By removing more soil at harvest and pre-wash, it less water is required to wash, and the water used can be recycled more times through the soaking phase. Hence packers require smaller treatment systems to meet regulatory requirements before discharging water or processing that water for complete reuse without discharge. Growers also benefit from this project by keeping their valuable soil in the field for future crops. Several pieces of equipment have been modified under this project and a few more are scheduled.

Activity 4: Dedirting Table

5. CREATE SAFER WATER INPUTS FOR CROPS

The aim is to remove pathogens associated with the use of surface water for irrigation. Over the past four months we have had water samples taken from the canal and East River and analyzed for coliforms and e-Coli. This is the first time the HMGA has had their own data. The results were surprising and quite variable, pointing to the need for water quality management in the future to address food safety concerns on ready to eat vegetables. The big test will take place in August when a field trial using new technology is introduced to an irrigation system.

6. OPTIMIZE LABOR USE AND RATIONALIZE PESTICIDE USE WHERE IT IS MOST NEEDED TO CONTROL WEEDS

This project is referred to as Robotic Weeding. It has been suggested that this is the future of agriculture for vegetable and fruit production. So far, this growing season we have had three events; two field trials on celery fields and one equipment demo. The information from one of the field trials will be used to map out lessons learned, and a will include some cost benefit considerations.

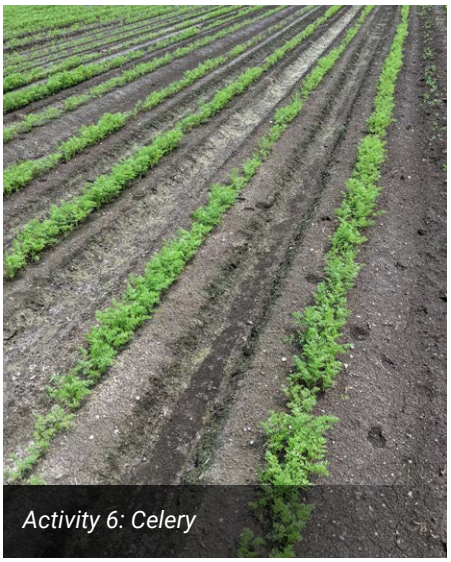
The robot demo was interesting. Three robots were compared side by side and industry stakeholders had the opportunity to meet developers and operators. One robot, the Oz produced by Naio was tested in the early stages of celery growth. A second robot, RoamIO developed in Oshawa is currently being used for soil testing. The robot operates on tracts while the others were on wheels. The third robot was from Nexus. This operates on an imaging system with adjustable wheelbase to fit carefully over vegetable beds. Considerable development work still is required on this model as the software is specific to each crop. The robot is unique as it can pluck weeds close to the vegetable plant.

The project teams' work continues with partners and a final equipment demo is planned for late September. At this time, a fourth robot, the Dino will be featured. The Dino, also produced by Naio is in the process of being imported into Canada from France. This robot has an adjustable wheelbase.

Finally, we have one grower that is working with a Weed Zapper for the first time. Weeds above the vegetable plant are zapped by electrical current. The machine is front mounted on a tractor and the generator runs of the PTO.

More will be reported as the project continues.

Activity 6: Robots



Activity 6: Celery

Summary

Despite the challenges from COVID and the weather, all the projects are progressing on schedule and will generate results to support industry. Videos will be produced to share visuals and results with industry stakeholders.

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