



# ACTIVITY 4 TECHNOLOGIES

OCTOBER 2023

## 4A) DRONES – DJI/HMGA DEMONSTRATIONS

### **June 22nd**

The HMGA hosted a drone demo event at the Horodynsky Farm, Innisfil. The event was an overwhelming success with over 80 people attending. Attendees learned about all of the parts of the drone, including its energy sources and capacities from both a T30 and T40 DJI model. This was followed by a live demo.

Uses were demonstrated including imaging, elevation mapping, field contour mapping, planting cover crops, scouting for pests and potential pesticide application. Grower interest was very high and one grower purchased a T40 model for farm purposes. Further uptake depended on showing its capability for scouting, weed control and planting cover crops.

### **August 24th and 30th**

Two additional scouting demos were held with ag retailers to demonstrate the drones' usefulness in identifying weeds and pests. Hopefully we will see the scouts servicing Holland Marsh growers who will be using them in the spring of 2024.

### **October 11th**

A small demo was held at the Horodynsky Farm to demonstrate the outcome of using a drone to zone it on weed pressure in a soybean field to then enable treatment. The field was harvested in the week of October 21st with an astonishing yield of 85-90 bu per acre. The grower was very pleased with the efficiency of the drone.

### **October 24th**

A cover crop planting event was held at a grower on 5th Line, Bradford. Winter rye was inter-seeded into corn as a test to determine if germination was possible following harvest and large quantities of stover on the surface. The aerial seeding proceeded at 10m/sec and the process was quite efficient. Outcomes will be evaluated at early December and in April 2024.

The four drone events have provided excellent opportunities for growers to witness its efficiency of use. One last demo remains for 2024. The goal will be to assess if the field boundaries determined by a drone are transferable to other telemetric systems such as auto stir?



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## 4B) ROBOTICS

For the second time in three years, a Holland Marsh grower has worked directly with technology companies to host a farm demo to determine the suitability of the technology for weed control in vegetable crops grown in muck soils.

Carbon Robotics had previously conducted a trial in Quebec muck soils and had experienced combustion issues with its laser system. Consequently, the farm demo was turned into a private event between the grower and HMGA to learn about shortcomings of the system and potential opportunities. Carbon Robotics used the time in the Holland Marsh to learn about adjustments required.

### **The following are the lessons learned from the growers' perspective:**

- There were no combustion issues.
- Moist conditions made manoeuvring difficult, would operate much better on a tract system
- The chassis supporting the equipment was not adjustable. Growers want to adjust the base to go from celery to carrots or onions.
- The software is not fully developed.
- The lasers "burn" the small weeds in a small circle around the vegetable but does not address inter row weeds.
- The speed of operation is quite slow and growers would still need to use herbicides at pre-planting stage.
- The cost of the equipment and software is prohibitive. In addition, growers need to pay an annual license fee.
- Once the canopy closes, the equipment can't be used, yet weeks still grow.

Carbon Robotics agreed to address these challenges and hoped to return in 2024 to demonstrate a better performance.

The Carbon Robotics events in muck soils was followed by 8 members.