

Ag Drone School



**Verdant Valley Hall
April 11 - 12, 2024**



Brought to you by:



Fly Safely

- Flight training suitable for complete beginners
- From first takeoff to autonomous mapping
- Learn to fly using our fleet of drones

Fly Legally

- Basic RPAS ground school: air law, drone systems, theory of flight, human factors, meteorology, navigation, and maintenance
- Take the Transport Canada online test and leave with your Basic Pilot's Certificate

Save Time & Make Money

- Two full days of hands-on learning, flight practice & real-world farm and ranch uses
- Beyond pretty pictures & video, you'll learn how to create accurate hi-res maps of fields
- New: intro to spraying or cover-crop spreading
- Demystifying the remote-sensing jargon: NDVI, multispectral, thermal, LiDAR

\$590 for two full days, including lunches

Starland County residents: use code STARLAND when registering to get a \$100 discount

Register at LandView.com or call us at (780) 448-7445

Ag Drone School

Verdant Valley Hall

April 11-12



Day One: Morning

Thursday, April 11

9:00 a.m. Welcome & Introductions

10:00 a.m. Introduction to RPAS

Remotely Piloted Aircraft Systems: history of development, purposes and applications; airframes and propulsion systems, and the theory of flight.

11:00 a.m. On-Farm Uses of Drones

Once students are familiar with the basic flight technology and its capabilities, we will go through many different uses for drones on the farm. This presentation will start with a brief discussion of the different types of sensors that have applicability to agriculture (RGB, NIR, thermal, lidar) and we will then give many examples of how those are being actively used on farms today.

Day One: Afternoon

lunch provided

1:00 p.m. Certification Process & Intro to Air Law

Introduction to the legislation around RPAS operations, the *Canadian Aviation Regulations*, and the process for acquiring a Pilot's Certificate. Participants will examine the airspace restrictions in their area to determine which level of certification will be required.

1:30 p.m. Human Factors, Site Survey & Pre-Flight Planning

Continuation of RPAS ground school, including review of the human factors in aviation. This session will also include discussion of many factors to be considered for safe flight operations, including meteorology, field hazard assessment, navigation, radiotelephony and flight operations.

2:00 p.m. Manual Flight Manoeuvres

Participants will learn to fly through a series of practice flights, under the direct supervision of an experienced operator and instructor. Typically, this will be conducted indoors, space permitting. We will use DJI Mavic Mini aircraft, beginning with first takeoff and ending with a manual "point of interest" flight. You will be comfortable flying in tight indoor space before the day is out.

3:30 p.m. Best Practices: Emergency Management, Maintenance, Storage & Travel

Prudent operation of an unmanned aircraft requires preparation for various emergency scenarios. We will discuss various real-life scenarios and how to prepare for them. Topics also include the human factors in aviation and flight operations. Practical advice to ensure that your aircraft and its ground support elements are always in good repair, to ensure safe flight. Considerable focus will be put on battery management using DJI systems as examples.

4:00 p.m. Semi-Autonomous Mapping Workflows

We will present the theory behind the generation of maps and 3D models from semi-autonomous RPAS flights. Discussion of the most common vegetative indexes and the opportunities for multispectral imaging. Several examples of complete workflows will be presented including flight planning, flight execution and map processing.

4:30 p.m. School concludes for the day



8:30 a.m. Map Data Processing & Analysis

Software workflows from drone to final maps will be demonstrated for visible-spectrum RGB and multispectral datasets using MapsMadeEasy and Pix4Dfields software. Sample crop imagery with multispectral cameras and its agronomic interpretation will be discussed.

10:00 a.m. Livestock & other Farm RPAS Uses

There are many other uses for drones on the farm, both simple and complex, and those will be discussed during this session. We will also go through the applications for drones with focus on cattle – examples of thermal and zoomable cameras that can be used for finding, monitoring, or counting livestock.

10:30 a.m. Introduction to Spraying by Drone

From multispectral mapping to spot application of herbicide, we will inform you about the practical realities of drone use for product application. We will discuss practical and regulatory aspects of spraying herbicides or liquid fertilizers, and broadcast seeding of cover crops.

**11:00 a.m. Achieving Accuracy**

Whether mapping or spraying, getting accurate results from a drone is crucial to success. We will discuss spectral calibration during mapping missions, geolocation accuracy through RTK/PPK, and calibration of spray quality/spray width.

Day Two: Afternoon “Fly Day”

lunch provided

1:00 p.m. Test Preparation

Review of ground school concepts and the relevant sections of the *Canadian Aviation Regulations*. We recommend reviewing the annotated regulations and Aviation Information Manual materials included in your printed materials for reference before and during the test.

1:30 p.m. Online Transport Canada test (optional, \$10 fee payable to Transport Canada)

We encourage you to bring a laptop or tablet to take Transport Canada’s Small Basic Operations test at the end of class. We are not able to assist you during the test, but it may be best to just take the test while the material is fresh. And it is open book, so you can use your reference materials.

3:00 p.m. Fly Day:

Participants will have the opportunity to operate several RPAS models outdoors, from the Mavic 3 to the Matrice-series drones. Various scenarios will allow participants to gain experience and to understand both site survey and emergency procedures, while taking turns as pilots and visual observers.

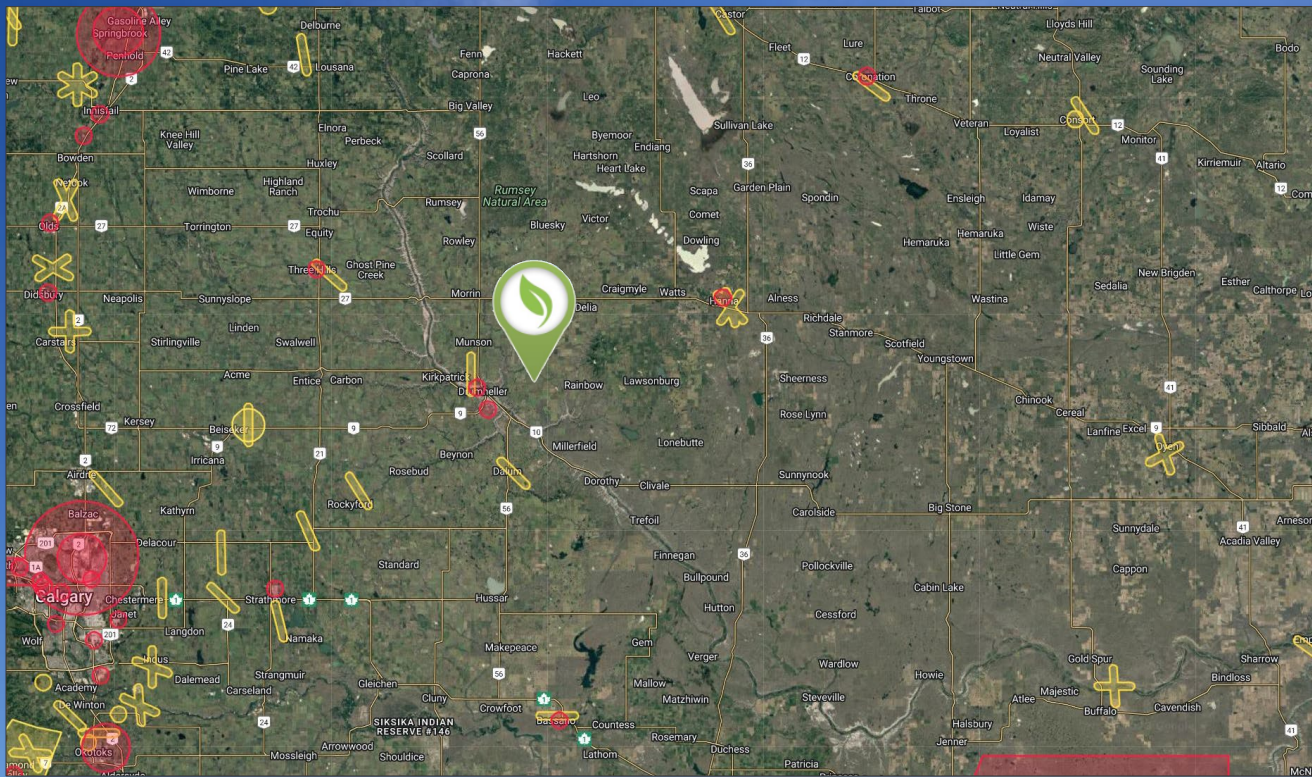
There will be a selection of “missions” to complete in small groups, with all participants getting “stick time”. You will **learn to do by doing**.

Dependent on weather allowing flight within manufacturer’s specs

**4:30 p.m. School concludes – thank you for attending!**



Do you need to fly in a red zone below, or close to bystanders?



Source: NRC Drone Site Selection tool – go to tiny.cc/dronetool

If so, please talk to us about Advanced Certificate training for \$499.

Normally \$599 for a full bundle including Flight Review, but we offer a \$100 discount in combo with Ag Drone School. You would also need an Advanced Certificate if you plan on applying for an SFOC for spraying drones over 25 kg.

**Register at LandView.com
or call (780) 448-7445**

