

Method for targeted application of herbicides in wild blueberry production

Fact Sheet

1) Preliminary Data Collection

First, the producer or his/her agronomist needs to obtain a map showing an overall view of the field and its contours. At this stage, aerial photos can generally be used as a base layer.

Required Equipment

- Aerial Photo.

Next, the producer and his/her agronomist should identify on the photo or with a GPS, sensitive areas to avoid when applying herbicides (watercourses, sand dunes, wells and others) and re-define the boundaries of the field as needed. (check your provincial regulations for the required buffer sizes).

Required Equipment

- Handheld GPS (acquisition system for geo-referenced data)

2) Identification of weeds

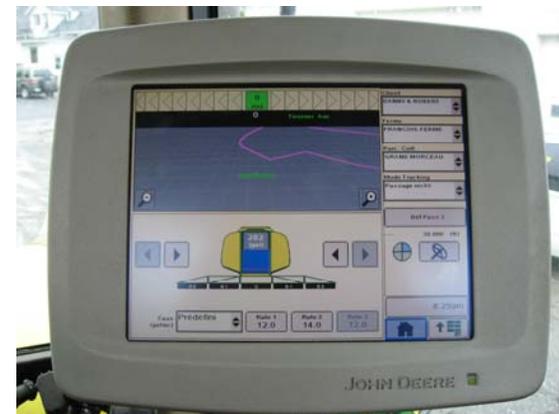
This step can be carried out during mowing when regular passes by the mower provide good accuracy. Also, using the same equipment and software as will be used when spreading

the herbicide reduces the risk of error. Finally, this approach saves time. Bear in mind, though, that it calls on the operator to perform several jobs at the same time while mowing and this makes extra demands on the operator's attention. It also requires training of the operator so that he/she is able to screen for weeds.

The operation could also be carried out on foot or in a vehicle. Doing it this way takes more time and is less precise.

Required Equipment

- Handheld GPS or tractor-mounted gps.



Tractor-mounted GPS screen

Method for targeted application of herbicides in wild blueberry production

Fact Sheet

At this stage, it is important to ensure that the data which is gathered can be easily processed later. For example, it is important to work in the same geodetic coordinate system (ex. : WGS 84) when identifying weeds as when applying targeted herbicides.



Weed map produced during mowing.
A different colour for each weed species can be used.

3) Transmit the data to the technical adviser

Data can be exchanged over the Internet or with a thumb drive. If the technical adviser is also the equipment dealer, they can pull the data directly from the tractor mounted GPS.

4) Production of spray maps

At this stage, the help of a technical adviser is needed. Using the data collected in steps 1,2, and 3, the technical adviser will create spray maps.

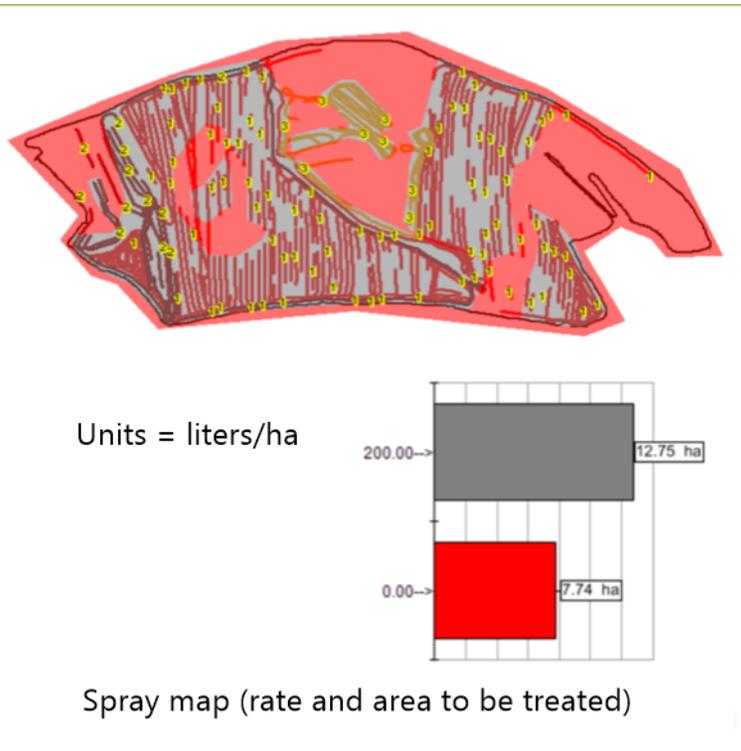
The adviser will confirm **the data format is compatible with the system to be used when spraying**. Considering the technical limitations of some sprayers, it is crucial to take into account errors caused by equipment being out of phase. For example, ground speed, the physical location of the GPS and the delay between opening a valve and the moment when product at the right dosage is ejected. **It is essential, therefore, to lay out a larger spray area to overcome these technical limitations. This means that the treatment of weed islands smaller than 9 m² is not practical. These islands should either be ignored or combined with larger treatment areas.**

Method for targeted application of herbicides in wild blueberry production

Fact Sheet

Required Equipment

- Computer and data processing software



5) Targeted application of herbicides

This step is undertaken by the producer and consists of applying herbicides in a targeted fashion to islands of weeds. To do this, the spray maps created in step 4 are used.

The **calibration of the sprayer or spreader should already be done**. The producer should also ensure the precision of the GPS system to be sure that GPS drift doesn't affect the accuracy of the spreading operation. **The producer should make a test run**. To do this, the help of a technical adviser on precision agricultural equipment is advisable. **During the application, the producer should follow the map to make sure the system is working correctly**. For example, it's possible that the satellite signal might be degraded when travelling near an obstacle like a windbreak, or the system might stop for some reason.

Method for targeted application of herbicides in wild blueberry production.

Fact Sheet

Equipment needed

- Tractor equipped with a GPS and a computer (ideally the same as at stage 2);
- Fixed or variable rate application controller (this equipment is optional, but it allows the farmer to improve his/her efficiency, the precision of the application and reduce operator error.



A study by Agrinova shows a **reduction in the use of**

hexazinone (Velpar or Pronone) of 51 to 81 %, which represents a saving of between \$98 and \$164 per hectare. These results are in line with the findings of studies in other crops.

For more information on this study, contact

Agrinova at this number :

1 877 480-2732

info@agrinova.qc.ca

Document created by :

Sophie Gagnon, agronomist, Agrinova Samuel Morissette, agronomist, Agrinova Bruno Bouchard, engineer, Lagüe Précision

With the financial support of:

