



Summary of final results

Evaluation of various organic weed control methods in the production of wild blueberries

This biological control test project involved the evaluation of three alternative herbicides that had never been tested in wild blueberries. In this way, several parameters were able to be established over the course of the three years of testing: targeted weed species, application methods (injection, wetting or spraying), product concentration, response period, soil moisture content and number of applications.

In the first year of preliminary trials in 2005, it was possible to target the most promising treatments that would make up the 2006 trials. Subsequently, the number of treatments was further reduced to end in 2007 with the most relevant treatments, again in comparison with conventional herbicides (Velpar and Spartan) in spring spraying.

Experiments have shown that vinegar-based products (white vinegar 12% and Ecoclear 25%) show results equivalent to or superior to conventional herbicides for the control of comptonia (sweet fern), diervilla, (honeysuckle), epilobe (fireweed) and kalmia (lambkill). The efficacy results of TopGun for weed control were inconclusive.

In order to obtain conclusive efficacy results, the **conditions of application** must be fully controlled. These parameters are:

- Choosing the concentration and dose of the product
- Application method
- Period and number of applications
- Soil moisture levels

Although the importance of these factors was noted in this project, the short duration of the project did not allow for the precise determination of the optimal recommendations for all of these parameters. The optimal concentration of products, the best application method, the time and number of applications, and the accuracy of the applications are parameters for which specific recommendations have been made. However, the optimal dose of product to be used and the adjustment of the product to suit moisture conditions could not be further developed in this project. Determining such parameters requires specific work on them over several years.

The main factor limiting the effectiveness of the products is the **risk of phytotoxicity** on the crop. To minimize the risk of phytotoxicity on the blueberry plant, the same factors must be taken into account (choice of concentration and dose of the product, application method, period and number of applications, as well as soil moisture level). Added to these is the accuracy of the applications, which greatly influences phytotoxicity.

Conventional herbicides commonly used and tested as a control (Velpar and Spartan) have also been shown to be subject to special precautions when using them to avoid crop damage. It is therefore equally important to check the application conditions recommended for these products by the supplier. In addition, these conventional herbicides have little or no effect on some of the weeds for which they are commonly used, such as sweet fern and honeysuckle.

Finally, the second factor limiting the use of these products is the viability of using them over large areas, mainly due to the cost of products and labour. It is difficult to imagine using vinegar for the whole of a large blueberry field. However, it can be very appealing to use vinegar in localized application over a **small area**, since the equipment is inexpensive, not harmful to the crop and does not require specialized training.

Finally, none of the products tested are registered for wild blueberry, but acetic acid products are approved in cranberry cultivation, which would facilitate access for blueberries. In terms of the pH effect and environmental risk of these products, they are not significant.

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