

## Geotextile as a Winter Protection Method to Reduce Winter Injuries to Cold Sensitive Cultivars.



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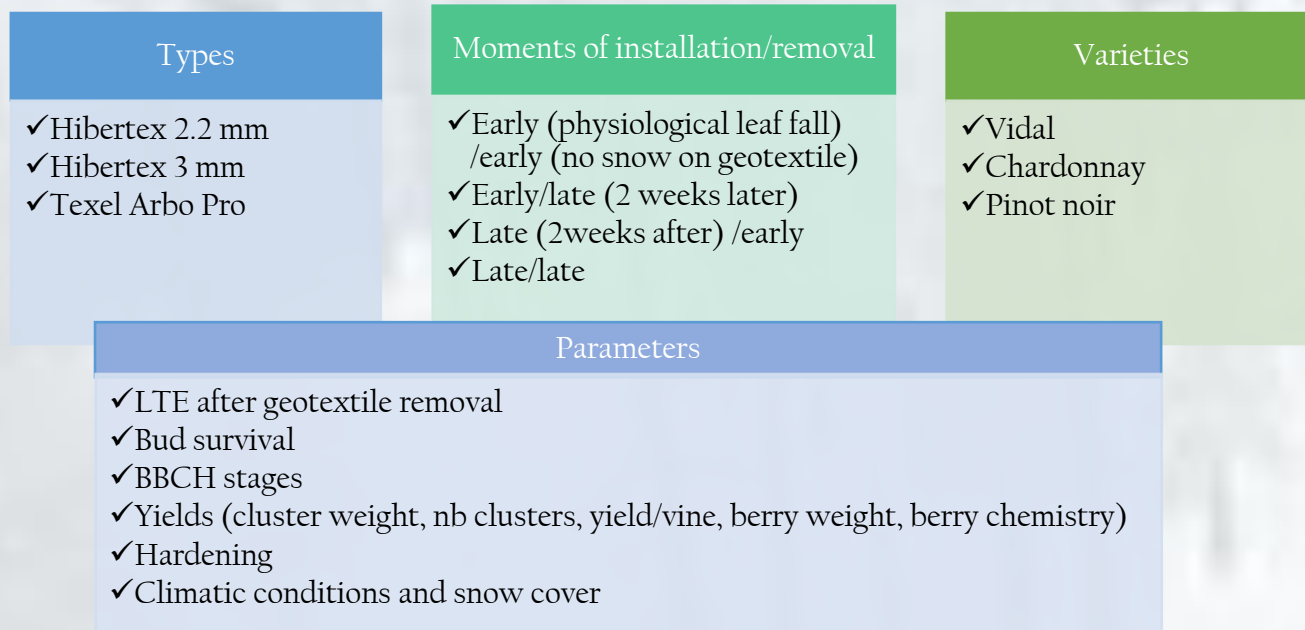
### Introduction

Winter protection methods have been developed to use concomitantly with tender and semi-hardy wine grapes that are less resistant to extreme cold in cool climate regions (1). An Ontario study demonstrated that geotextiles could affect vine cold hardiness by reducing resistance levels, primarily LTE 10, during periods of acclimation and deacclimation (2-3). The use of geotextiles to protect semi-rustic and non-rustic vines is increasingly practiced in Quebec, though without specific knowledge for optimal installation and outcome.

**The main objective is to provide methods to reduce cold injury on cold-sensitive cultivars under eastern Canada's climatic conditions in order to support the development of the wine industry.**

### Methods

The project evaluated three types of geotextiles and four moments of installation/removal for three grape varieties. The trials were carried out in four vineyards across Quebec during the 2018-2019 and 2019-2020 winter months. Several parameters were collected for every year.



### Results and discussion

We observed that protecting the vines with geotextile maintains significantly higher temperatures under the tissue during the coldest months while a greenhouse effect is noticed as temperatures rise in the spring. Thus, the late geotextile removal period favoured vine development in the spring (2019)(Fig.1), but minimal effects were noted on the various parameters at harvest (2019-2020) (Fig.1,2). Only Chardonnay resulted in a lower number of heavier cluster with Hibertex 2.2 mm material (Fig.2). Temperature did not differ significantly between the three tested material during the two winters (2019-2020)(Fig. 1, 2). Winter survival was similar for all three materials (Fig. 2). CRAM is currently developing two other follow up projects using geotextiles that will complement current understanding and help lead to optimal methods for protecting tender grapevines under cold-climate conditions found in Quebec, Canada.

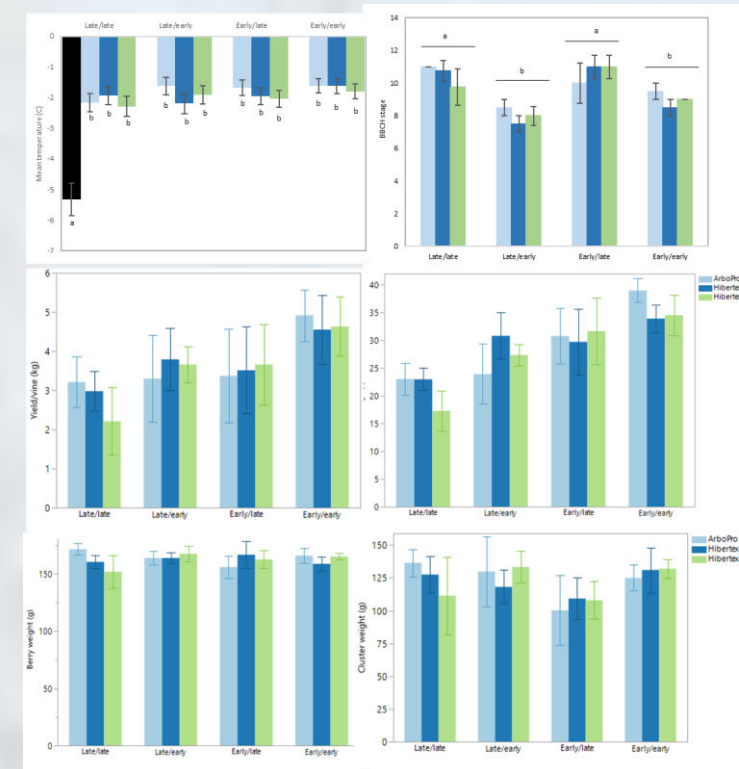


Figure 1: Effects of geotextile type and the timing of installation/removal on temperatures beneath the geotextile, physiological development, yield per vine, number of cluster, cluster weight and berry weight. 2018-2019

Figure 2: Effects of the geotextile for three varieties on temperatures beneath the geotextile, bud survival, yield per vine, number of cluster, cluster weight and berry weight. 2019-2020

### Acknowledgement

The authors wish to thank Stefano Campagnaro and Pascale Boulay for the technical support, and Louis Thomas, Conseil des vins du Québec. Funding for this project has been provided in part through the AgriScience program-cluster on behalf of Agriculture and Agri-Food Canada.



### References

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