PRODUCT INFORMATION SHEET

WINE-GROWING PROTECTION

GEOTEXTILES FOR WINTER PROTECTION, A PROFITABLE WINEGROWING PRACTICE

ADVANTAGES:

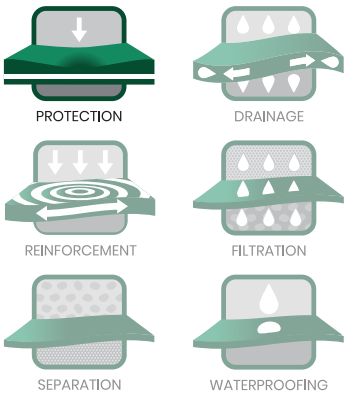
Protects primary buds from freezing;

Increases vine yield;

Can be easily installed and removed manually;

Ecologically sound, sustainable,and reusable solution.

FUNCTIONS



SECTORS

- Municipal and Landscape Architecture

THE PROBLEM

THE SOLUTION

Frost risks are a concern for winegrowers. Hybrid European and North American grapevines poorly tolerate an average temperature below 9°C, and their exposed buds are killed at a temperature below –25°C. These frosts could cause losses of 5% to 15% in primary buds annually and have an impact on the health of the grapevines as well as on the quality of the wine. In addition to extreme cold weather during winter, the risk of early or late frosts in the fall and spring puts the grapevines in jeopardy. Using a geotextile reduces exposure to severe cold in addition to minimizing sudden temperature changes, which increases the survival rate of primary buds.

At the start of winter, cold temperatures reach damaging levels when the snow cover is not thick enough to protect the grapevines. The geotextile effectively protects the vinestocks from the cold by minimizing the impact of the wind while maximizing the insulation properties of the snow accumulated on the geotextile. Moreover, unlike traditional techniques for earthing up vinestocks with soil or leaves, the geotextile does not require tractors to be adapted to specific tools for these delicate operations.

"TO PROTECT OUR VINEYARD FROM HARSH WEATHER CONDITIONS AND ENSURE THAT WE GET ALL THE BENEFITS OF THE PRIMARY BUD, THE INSTALLATION OF GEOTEXTILE IS ESSENTIAL. THIS LAYER PROTECTS OUR VINES FROM NOVEMBER TO APRIL."

– YVAN QUIRION, OWNER OF THE DOMAINE ST-JACQUES VINEYARD

WINE-GROWING PROTECTION

TEXEL ARBO-PRO DURALINE GUARANTEE OF PERFORMANCE

The quality of the installation of the winter protection on the grapevines is essential to protect them from the cold and maximize the geothermal potential of the soil. Improper installation of the geotextile could generate heat exchanges that lower the air temperature under the winter protection. The Duraline technology reduces thermal bridges and ensures a precise and tight positioning of the fabric on the ground. This efficient installation retains heat under the fabrics and limits temperature inversions on top.

THE DIFFERENT PERFORMANCE MECHANISMS

The main protection mechanism of this system is the insulating effect provided by the fabrics and the snow accumulation, which acts as an insulator to keep buds below the cryotolerance level during winter. Snow accumulation reduces and stabilizes outdoor air temperature deviations throughout the cold season. Research shows that 15 to 20 cm of snow protects the buds from the cold, and a 30 cm layer of snow provides a very strong temperature gradient between the outside temperature and the bud area. In addition, unlike the exclusive use of snow that melts as soon as solar radiation intensifies, the geotextile remains in place and protects vine shoots and buds until the fabrics are deliberately removed.

Although these fabrics are breathable, thus preventing vine asphyxiation, their reduced permeability coefficient slows down air circulation and minimizes heat transfer by convection, thus protecting the vinestocks. In addition, compared with ridging or using a dead leaf cover to keep a higher temperature near the ground, using fabrics allows air convection and heat diffusion upward under the fabrics, ensuring more uniform and higher temperatures near the buds. Finally, this wind barrier reduces the drying effect of the wind and the subsequent drying of the buds.

However, the opacity of these geotextiles is not total, and some of the sun's rays could be transmitted through the fabrics and absorbed by the vine shoots, buds, and soil. When conditions and vines require increased opacity to delay bud emergence from dormancy, a product coated with an opaque film called Texel Arbo-Therm can be used.

The climate changes expected for the coming years will significantly affect winter temperatures and snowfall volumes, potentially decreasing snow cover depth and persistence. In this context, the method used to protect commercial vineyards must be constantly reviewed and improved. Protecting vines with protective geotextiles can be very profitable for the producer by ensuring a higher survival rate, better production yield, and optimal ripening of the grapes.

	Accumulate snow on crops	Prevent daily temperature variations	Reduce the impact of extreme cold	Prevent winter drying	Prevent early budding	Facilitate installation
Texel Arbro-Pro	+++	N/A	++	+	N/A	N/A
Texel Arbro-Pro Plus	+++	N/A	+++	++	N/A	N/A
Texel Arbro-Pro Plus Duraline	+++	N/A	+++	++	N/A	+++
Texel Arbro-Therm	+++	+++	++	+++	+++	N/A

N/A : Not applicable

WANT TO LEARN MORE?

Feel free to contact one of our representatives to discuss your project. 1 800 463-8929 | texel.ca

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