

AUSTRALIAN & NEW ZEALAND

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Wind worries shaded by cloth

John Hudswell

Harsh spring winds are an annual problem in many regions, and can severely affect growth of new shoots. Now one Central Otago, New Zealand, vineyard has come up with an innovative way of using shade cloth to protect delicate Pinot Noir vines from the buffeting gales. Misha's Vineyard viticulturist Robin Dicey borrowed wind protection techniques that are normally the domain of orchard owners and horticulturists, and applied them to viticulture with impressive results.

The vineyard (originally featured soon after establishment in the January 2006 edition of *Grapegrower & Winemaker*), lies on the steep eastern slopes and terraces of Lake Dunstan, and is prone to unusually strong winds during spring and early summer.

Something had to be done to reduce wind damage, and Dicey found a solution through an unusual application involving shade cloth. Dicey's idea was to stretch the cloth the full height of the vineyard posts along every fourth row to provide shelter for young Pinot Noir vines from the harsh winds.

"Prior to the installation of the shade cloth, we were seeing leaf tatter, sandblast desiccation and general damage to the growing tips of the Pinot Noir vines in the exposed areas," said Dicey. "But in just a few weeks since the shelter cloth has been erected, we have seen a marked improvement in the vines, as evidenced by the longer internode length and larger leaves. We know that the benefits of this mesoclimate we're establishing behind the shelter will continue to provide benefits in reducing mechanical damage, and improve flowering, fruit-set, and eventually yield."

Smart idea

It was during the initial consultation and evaluation of this potential vineyard site that consulting viticulturist Dr Richard Smart first raised the issue of wind management. He praised the high altitude location as one of the best he had seen in Otago due to its excellent cool air drainage – given that frost is an issue for most vineyards in the area. However he specified that the north-west facing vineyard should be established with row directions running east-west down the steep slopes so that they were perpendicular to the wind, and that wind breaks should be installed to protect the vines and to retain the warmth.

As the second stage of the vineyard was established in 2005 to include these wind-prone lakefront terraces and slopes, the issue of wind protection was raised again as one of the key ways of optimising vine growth in the fledgling vineyard. Dicey had become familiar with the wind patterns on the vineyard but the site posed some issues for a natural shelter belt given its multiple levels, the steep slopes on much of the planted area, not to mention the council protection requirements of this "outstanding landscape" zone prohibiting the establishment of shelter belts and the planting of any non-native vegetation.

Effective solution

Dicey consulted with Lindsay Scott from Net Pro, providers of shade cloth, and Scott confirmed that running the protective canopy vertically along the vineyard rows would be an effective solution to the problem.

The shade cloth selected was an HPDE monofilament known as "Smart shade" which provides up to 50% wind reduction, and the cloth was customised in Net Pro's Australian factory to a 1.6 metre width, to match the post height with just enough gap at the base to

relieve the wind pressure, and specified as sand coloured to blend with the surroundings.

The specific benefits of erecting the artificial shelter using the shade cloth on Misha's Vineyard have been:

- protecting the soil
- conserving soil moisture
- improvement in irrigation efficiency
- better working conditions for vineyard staff
- better growing conditions for the vines during spring.

Dicey has also modified the trellis system on Misha's Vineyard to further mitigate the wind issue, to a system with one fruiting wire and three pairs of foliage wires, instead of the usual two pairs, which provides additional canopy support for the young vines.

Free training!

