

AUSTRALIAN & NEW ZEALAND

# Grapegrower & Winemaker®

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# Satellites steer course for new lakefront vineyard

*Nothing about the establishment of Misha's Vineyard in New Zealand has been ad hoc. It has all been planned right down to the last detail. It was a case of checking out the markets, finding out what consumer requirements were and then locating a vineyard to produce an ideal product for that market. It was a market driven approach. Then came utilisation of the latest technology to ensure the fledgling vineyard had every chance of success. This is the story of the vineyard with a view, not just of a lake but of the big picture.*

Through sophisticated GPS-driven technology, the boundaries are literally being pushed on the rugged and rocky terraces facing the shores of Lake Dunstan (New Zealand) to transform a barren land that barely supported sheep in the past into one of the most spectacular vineyards in the region.

Misha's Vineyard, just north of Cromwell on the lakefront terraces, is the newest area of Bendigo Station to prove suitable for grapes. Planting grapes on this site only became possible with the use of a custom-designed vineyard establishment solution that employs satellite-guided technology and the availability of water through a new lakefront terrace irrigation scheme installed in 2004.

The vineyard establishment solution was designed by Brent Hill Contracting and has been refined and modified over the last few years. Hill has integrated the latest Trimble AgGPS® Field Management System in his Fendt Favourit 822 planting tractor which includes an Autopilot system which is powered by a GPS-based navigation controller that incorporates a black box with three spinning gyros to correct for the roll and pitch of the planting tractor. It also includes an AgGPS 214 High-Accuracy Receiver and an AgGPS 170 Field Computer for field topographic mapping.

"By using a base station and a dual frequency receiver, we can pick up signals from an average of nine satellites," Hill explained. "And with corrections transmitted at a rate of up to 20 times a second, we are achieving centimetre-level accuracy for marking out the ground irrigation system and for the planting process – even on the rugged and steep faces of these terraces," he added.

After the initial stages of ground preparation, which proved a long and arduous process due to the amount of schist and reef rock on the terraces, Hill used a quad bike also equipped with a GPS system so that vineyard drip irrigation scheme could be marked out according to the irrigation plan. Providing GPS locations for main, sub-main and riser groups, the data was then collected in ESRI shapefile format and transferred on a flash memory card to the planting tractor's autopilot system so that there would be perfect alignment to the vineyard rows during planting.

Just prior to planting, the cross-gridding took place creating a highly accurate grid for the planting operation. Using a 10m hydraulically-folding marking bar, scratches were marked in the ground 90 degrees to the row direction and according to the post and plant spacing requirements.

Then the planting process utilised Hill's custom-built mechanical planter which supports two people at the rear of the planter on seats hinged on leaf springs that rise and fall according to the ground conditions. The mechanical planting mechanism consists of a pre-ripper which rips rows to 600mm or post depth which is followed by a planting shoe which is a U-shaped mechanism that creates and defines the planting trench. As the planter moves along the rows, rubber-cushioned mould boards defect around any rocks



and then the individual press wheel assemblies, with pneumatic airbag suspension that inflate and deflate according to the ground contour, apply constant pressure so that the soil is compacted around the vine roots. With the combination of the GPS system and the optimised mechanical planter, vines can be planted at a rate in

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excess of 15,000 vines a day, with absolute precision.

"Without this sort of technology, the planning and planting of this vineyard, particularly on our steep slope faces would have been virtually impossible" said Misha Wilkinson, who owns Misha's Vineyard with her husband Andy.

"With over a 99% success rate with the machine-planting on the 10ha that were planted in 2004, it has already proven it's the best solution to tackle this difficult terrain with pinpoint accuracy," she said.

The establishment of Misha's Vineyard was initially enabled by the provision of water since the creeks and races didn't

yield enough to irrigate the terraces. Early last year the Wilkinsons, John Perriam from Bendigo Station and an adjacent vineyard owner, banded together to develop an irrigation scheme. "That was our first crucial step in turning land that was considered too dry and stony, and with soils too thin and poor, to be considered



## Viticulturist / Vineyard Technical Officer

A full-time Viticulturist or Technical Officer is required for a progressive 150ha vineyard located in the Cowra region of NSW. The vineyard is under long-term contract to a major wine company, and will be undergoing further expansion in 2006.

The appointee will be a member of the vineyard management team and should have good communication and organisation skills.

Primary duties would include:

- Undertaking technical work including yield estimates, pest and disease monitoring, soil moisture monitoring, soil/plant/grape samples for fertility and other analysis.
- Recommendations regarding vineyard irrigation, fertilising and spraying.
- Supervising pruning and canopy management, spraying, slashing and certain aspects of the harvest operations.
- Undertaking laboratory work for determination of pre-harvest fruit maturity.
- Completion of pest and disease reports, as required.
- Participation in preparation of the Annual, and other reports, as required.
- Participation in routine vineyard tasks such as machinery work, as required.

Relevant tertiary qualifications are essential and an emphasis on soil or plant science is important. You must have previous vineyard experience and demonstrated ability to supervise staff. Computer skills are also essential. Applicants must possess a current driver's license - Farm Chemical Users (Chemcert) and Forklift certification would also be an advantage.

This is a career appointment. The final position title and job description is subject to the successful applicant's qualifications and experience. An appropriate salary and conditions, including a recently renovated 3-bedroom house in a convenient and attractive setting, is available to the successful applicant.

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Viticulturist

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for anything other than extensive sheep grazing in the past," said Perriam.

The irrigation scheme, designed by Fruitfed Supplies, pumps water directly from Lake Dunstan up a steep escarpment and runs several kilometres along the terraces. The investment once thought too hard and too costly to implement, has now proven its worth with over 40 hectares of vineyard already established on the terraces.

With 10ha planted in 2004, and a further 13ha in 2005, Misha's Vineyard plans further planting as well as the construction of an underground wine cellar and winery. Currently two-thirds of the vineyard is planted in Pinot Noir, with the remainder comprising a selection of white varieties including Pinot Gris, Riesling, Sauvignon Blanc and Gewürztraminer. The primary market for Misha's Vineyard Wines will be Asia and the full range of wines is scheduled for launch in early 2009.

"We decided a cool climate region would be best to produce the more aromatic white wines and then we had to find a place to produce a premium pinot noir, not only because it's a great red wine to accompany the lighter style Asian food but also because as people start to drink wine in Asia, they are very status conscious and there is a demand for premium wines - especially pinot noir - often referred to as "the king of grapes". Countries like Japan have the biggest market for French Burgundy outside of France - so they definitely have a taste for pinot but are becoming increasingly keener to try New World versions," said the Wilkinsons.

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Brent Hill Contracting Ltd is based in Etrick, Central Otago. Brent Hill is an agricultural contractor whose father started the business in 1948. During the latter part of the nineties, further work was sought to complement their agricultural activities. This led to the commencement of viticultural activities with the purchase of a mechanical harvester in 2000. Since then, Brent Hill Contracting has taken on vineyard establishment from land clearing to fully-planted vineyards and also offers services for mechanical pre-pruning and harvesting.

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