



Native plants trialled as an alternative to herbicides in vineyards

Wine maker Villa Maria is investigating planting native plants and cover crops under vines as an alternative to herbicides in commercial vineyards, with support from the Ministry for Primary Industries' (MPI's) Sustainable Food & Fibre Futures fund.

Conventional practice in New Zealand vineyards is to maintain a bare strip under the vines by applying herbicides, typically two or three times per season. A common approach by organic producers is under-vine cultivation or mowing. However, this can cause physical damage to vines and vineyard infrastructure such as irrigation.

"Planting native plants or other cover crops would enable us to work in co-operation with nature rather than against it and reduce our use of chemicals and tractor fuel," says project coordinator Raquel Kallas. "It has the potential to reduce the labour required for weeding in the long-term. Other benefits could include increased biodiversity, improved soil structure, reduced runoff and potentially better retention of soil moisture."

The project team is working closely with Robert McGowan, an ethnobotanist and pre-eminent expert on New Zealand native plants. He is advising and helping to test a range of native plants and cover crops at two different vineyard trial sites in Hawke's Bay.

Kallas says the biggest challenge if the project proves successful would be the cost of establishing native plants on a large scale. "Possible approaches could involve collecting our own seeds and growing them from scratch or finding a seed supplier," she says.

For the trial, the project team has planted mature plants from a local nursery by hand and is weeding them with hoes. They will measure the weed density in time, to see which plants are most effective at out-competing the weeds.

"During this phase of establishment, our greatest concerns are pressure from weeds and rabbits," says Kallas.

"We know that native plants are good for soil integrity and structure and attracting beneficial insects, but it will also be important to measure the impact of the native plants on soil moisture and whether they compete with the vines for water. We need to ensure there is no negative impact on yield and the quality of the grapes."

Preliminary data from late spring/early summer has shown that the native plants and cover crops are not competing with the vines for water. The plants have also not affected vine vegetative growth at this point in the season.

"The management of the vineyard floor is very intensive – it's incredible the amount of time and money we spend on it," says Kallas. "So finding something that takes care of itself would be a dream come true."

"Consumers are increasingly concerned about how their food is grown and are seeking sustainable options," says Steve Penno, Director Investment Programmes at MPI. "Finding an effective alternative to herbicides would not only be of great benefit to the environment, it may also be a unique selling point for the marketing of future wines."

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