

# PILLARS OF SUSTAINABILITY



NEW ZEALAND WINE  
PURE DISCOVERY



SOIL, WATER, AIR — WATER

Water is of critical importance to New Zealand's wine industry for irrigation, frost protection and winery operations. Although New Zealand has over 50 major rivers, 770 lakes and abundant rainfall, it is vital that wine businesses minimise water use and protected the purity of waterways to ensure our supply remains clean and sustainable in the future.

Many vineyard operations demand a careful balancing act between minimising water use and providing enough irrigation to assure fruit quality. The Resource Management Act 1991 has required viticulturalists to improve how they manage water and improve water budgeting skills. Viticulturalists are now expected to monitor rainfall, evaporation and transpiration and soil moisture.

In the winery, where the demand for water is mostly for processing and cleaning, water management is focused on minimisation and wastewater management. A secondary benefit of decreasing water use is a reduction in the associated energy costs required to pump water around or dispose of it.

## REGULATORY REQUIREMENTS

Water access rights are granted in the form of resource consents by local government bodies under the Resource Management Act 1991. The Resource Management Act 1991 covers all of the country's natural resources,

and includes water usage, water drainage and wastewater dispersal.

Members must review their local or district area plans to ascertain whether their activities are:

- Permitted activities but with some limitations
- Discretionary (require a consent)
- Prohibited

Resource consents are required in most areas for water-take and storage dams. Members must comply with any resource consents to take and use water, to discharge water and to store water.

Members are required to comply with the Resource Management Act 1991 and their local regional/district plans.

## WATER MANAGEMENT

Access to water and conservation of water quality is of paramount importance. Members are required to employ management practices that result in economic and efficient uses of water, and have no negative environmental impacts.

For some vineyards, water offers a sustainable form of frost management. Frost protection systems use the minimum amount of water possible, and given that frosts generally occur at times of high water supply, this practice has a negligible effect.

In the winery there is a demand on water for processing and cleaning. Water management focuses on minimising water use and wastewater management – from production through treatment, recycling and discharge.

Minimising water use entails:

- On vineyards - applying irrigation according to plant needs and soil moisture.

- In wineries - efficient cleaning and production processes and sound management of waste and wastewater disposal systems, to avoid contamination of water sources.

## SUSTAINABLE WATER MANAGEMENT PRACTICES

Practices such as drip irrigation systems and scheduled irrigation are mainstays of the Sustainable Winegrowing New Zealand programme. As well as saving water, they prevent the problems that excess soil water can cause, such as an increase in disease, reduction in fruit quality, and leaching or surface runoff, which degrades ground water.

In the winery, hot water used to sterilise during bottling can be reused for other cleaning activities. This saves energy and reduces water usage, and decreases the amount of wastewater a winery needs to treat before discharging.

Vineyards can use a variety of methods to determine the need for irrigation, including:

- Analysing weather and rainfall data.
- Analysing evapotranspiration measurements.

85% of Sustainable Winegrowing New Zealand vineyard area is irrigated, 95% of this area undervine drip irrigation for more efficient targeted application.



- Analysing soil moisture measurements.
- Computer modeling.
- Visual assessment.

An irrigation calculator is made available to member vineyards, which converts their water measures to standard reporting, and helps them estimate the quantities of water required for vineyard sites.

Templates are made available to member vineyards to record the output of their irrigation systems and ensure they are delivering water efficiently to all vines within the irrigation area.

Vineyard frost protection systems must be checked annually (usually checked before each frost event), water use measured and reported, and records kept to enable long-term tracking.

Minimised water use is achieved in the winery by:

- Using low volume/high pressure nozzles.
- Using nozzles that are attached to the end of the hoses rather than the tap (saving time when closing off water flow).
- Having a maintenance programme to ensure leaks are fixed quickly.
- Removing solid waste by rinsing equipment before cleaning.

Members are encouraged to:

- Reuse and recycle water in the winery, through multiple washes if possible.
- Pre-treat wastewater in the winery by settling out solids before it is distributed on the land.

## MONITORING AND CONTROL

- Vineyards should monitor irrigation systems ensuring the system delivers water efficiently and audit them annually. Sustainable Winegrowing New Zealand provides templates to help members to self-audit.
- Vineyards and wineries should report the water use of each vineyard and winery to Sustainable Winegrowing New Zealand annually. This information is used to provide both personalised and annual national and regional benchmarking reports to members.
- Wineries should follow the New Zealand Winegrowers Code of Practice (CoP) for Winery Waste, which provides guidelines for water management. Checklist templates should be used by members to record water and wastewater management practices, review systems and initiate any changes required.

## BENCHMARKING

- National and regional benchmarking data and personalised reports, including comments on suggested practices, and complementary information and resources, are supplied to member vineyards and wineries annually.
- Benchmarking helps members improve efficiency by creating a reference point against which their performance may be compared or assessed. 🌱

Central to our sustainability policy is a commitment to keep improving, as new research is undertaken and new technologies are developed. The New Zealand wine industry is actively involved in both of these areas, with an ongoing leadership role in research and development projects. Looking to the future, we will continue to protect the places that make our exceptional wines.

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