

Research area: VITICULTURE

Regional cluster: SA NORTH

What are the infiltration properties/water-holding capacity of the main Clare Valley soil types, and how does this inform the irrigation management required for growing premium Riesling and other key wine grape varieties?

Background

Changing weather patterns mean Australia's future generations are likely to experience continued restrictions of water supply, declining winter/spring rainfall, and an increasingly hotter, drier climate. More efficient use of water to irrigate wine grapes has the potential to improve operational efficiency (cost of production) and deliver more consistently yielding, high-quality wine grapes.

A range of soil types exists across the Clare Valley wine region, including deep sand, alluvial clay loam, sandy loam over clay, red brown earth, black cracking clay (Biscay) and sandy, podzolic soils, each of which require different irrigation strategies in terms of volume and frequency of application. However, growers in the Clare Valley have little knowledge of their soil type, and few use soil moisture monitoring to measure how deep an irrigation application reaches. Knowledge on whether or not this precious resource is being used in the most efficient manner possible is therefore lacking.

Why is it important?

Growers need the best return on their water investment which, for some, is an ever-increasing expense in their annual cost of production. This project will investigate the various soil properties (soil classification) and soil organic carbon (SOC) levels present in the Clare Valley, and how soil structure and type in a particular location impacts on irrigation requirements of grapevines.

Topics for investigation will include irrigation applications (frequency, quantity and timing), dripper spacing and different dripper outputs. The level of SOC on water-holding capacity and vine water use would also need to be a key measurable within this project. Ongoing monitoring of soil will include both moisture and temperature. Vine and grape monitoring in different soils and under different irrigation treatments will include observation of canopy health, maturation progress, berry size, harvest weight, fruit quality by pH, TA, Baumé, tannins, anthocyanins and colour.

What would success look like?

This project will produce a user-friendly range of 'regional benchmarks' of infiltration rates/water-holding capacity for the different soil types in the Clare Valley. Guidelines for best irrigation practice will be provided to growers and contribute to the production of consistently-yielding, high-quality Clare Valley Riesling and other key varieties.

For further information and to develop an application please contact:

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