



HOW TO IRRIGATE A VINEYARD FOR QUALITY WINES

There's more to drip irrigation than just turning on the water. Cousiño-Macul's "Regulated Deficit Irrigation" (RDI) system is a scientific tool allowing them to regulate vine vigour and stress. Explains Jorge Figueroa, Cousiño's Buin Vineyard Manager, "At Buin, we have developed an RDI program allowing us to apply only as much water as each vine requires - *and sometimes less*. This controlled deficit promotes root growth and is a way to reduce shoot growth and restrict yields. As a result, RDI can guide the vine to produce small berries with concentrated flavours."

The Chilean wine country has a very low water table and little summer rainfall. Most crops in the area rely on irrigation using runoff from the nearby mountains. Until recently, most Chilean vineyards were watered by "flood irrigation" from nearby canals and some still are. The disadvantage of this method is that there is no control of vine vigour. Quality wine requires vines with just the right amount of water stress to control yields and berry size.

When a new vineyard block at the Buin Estate is developed, soil types are identified by an electronic device to match the soil type to the kind of irrigation regime required, and infrared photography is used to check the vigour of the vines and grape maturity.

Figueroa continues, "we follow a different drip program for different varieties, but often it comes down to different programs for each block and even smaller sections within blocks. Each variety has different needs. We can guide a vine to produce berries with a potential for becoming great wine by knowing when to apply water and in what quantity, and, conversely when it is beneficial to withhold water."

Figueroa and his staff measure the moisture content of the soil and track and measure the vine's daily water consumption. Using precision equipment they can also measure the amount of water necessary to irrigate a vine by calculating the water content of samples of leaves on the vine.

Finally, they apply drip irrigation after the harvest to store nutrients in the vine for the next growing season.