

VINE TALK: What does Precision Viticulture offer?

Vineyard
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Vine Talk with Dave Antrobus

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Precision Viticulture (PV) is progressing at an ever-increasing pace and, unless you have been keeping abreast of the advancements, it is easy to become overwhelmed with the emerging array of options. Most likely you've been bombarded with what may be unfamiliar, terminology like near infra-red imagery, yield mapping, GIS data software, plant cell density maps, NDVI, drones, just to name a few of the emerging technological advancements - does this sound about right?

Basically, PV is about better understanding the variability of your vineyard by gathering facts and interpreting the information to make better management decisions. It is about using technology to help address agronomic challenges to take the right action, at the right place, and at the right time - every time.

Implementing PV does not have to be daunting. Try starting with a simple plan and build from there. Rather than trying to convert the entire vineyard to a PV-type operation, try a section of the vineyard that is relatively straightforward and has a strong likelihood of success.

Below is a short list of some PV technologies, which may help you decide where to start.

Soil analysis, including soil type and pH variability mapping

Many growers start by having their blocks mapped with an EM38 machine. This machine measures soil electrical conductivity, then software interprets the values to produce a soil type map. The EM38

machine is best suited to duplex soils with a good range of electrical conductivity.

It's always good to understand the pH and nutrient status of the various soil types across your vineyard. You then have the necessary data to prepare a plan to correct any extreme readings over the course of a few years.

Infrastructure

Having key infrastructure mapped out and visible for machinery operators can save time, money and prevent injuries and accidents. We all want to avoid those unfortunate, but realistic, occurrences such as hitting irrigation hydrants or power poles when operating machinery at dawn or dusk or wasting time trying to locate an underground main. Having your key farm infrastructure mapped on a geographic information system (GIS) is a very valuable starting point. A GIS is simply a computer system for capturing, storing, checking and displaying data related to positions on the earth's surface. GIS can show many different kinds of data on one map. It enables you to more easily see, analyse, and understand patterns and relationships.

In-crop sensing, yield stacking and zoning

Some vineyards are using plant cell density (PCD) imagery to make decisions about 'split picks' to increase the value of parts of their blocks, rather than having those sections diluted within the rest of the harvest. Some have in-crop sensors and others have on-harvester technology that can measure different quality parameters of the grape itself. Whilst interesting and potentially useful into the future, if you are yet to start exploring PV, I suggest this technology might be one to look into after you have dipped your toes in with other simpler options first. Walk before you run!

Remote monitoring/telemetry

When it comes to remote monitoring and sensing, it usually comes down to how many crop sensors and/or soil moisture probes you can afford. It's important to understand the variability across your block. If you're not in a position to alter the variability, then you may question the value of this knowledge at this point in time.

So start small, build from there, and reach out to an expert in the Precision Viticulture space to see how Precision Viticulture might help you get more from your crop.

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