

Multispectral Imaging for Managing Vineyard Variability

Within the field of precision viticulture (PV), there has been much discussion in recent years about the potential profits of split picking. Whilst this is indeed an important way of using scientific techniques to maximise profits, care should also be given to the way in which the inputs and variables of a vineyard are managed. It is the management of these variables which will, in the long term, both increase grape value, and reduce management and harvest costs.

Where does multispectral imaging come in?

When we have received confirmation of your order, we add your vineyard to our flight plans, and will collect data within one week of veraison (and flowering as well, if you so choose).

From this data, we create a PCD map. This map will show you where in the vineyard there are differing levels of vine vigour. This has been shown to correlate to differences in vine size, vine function (chlorophyll / photosynthesis), vine stress, sugar (baumé), titratable acidity and grape quality.

Driving profit by reducing costs

In the first year of moving to precision viticulture and using Digital Multispectral Imaging (DMSI), you will need to calibrate the PCD map to the grape quality at harvest.

We provide data in an easy to use format – either online or on a mobile device. It's never been easier to utilise this powerful scientific tool.

Either by yourself, or in consultation with our partners at Integrated Precision Viticulture (IPV), you can then assess this map in context of grape quality, to understand how inputs should change in the following year.

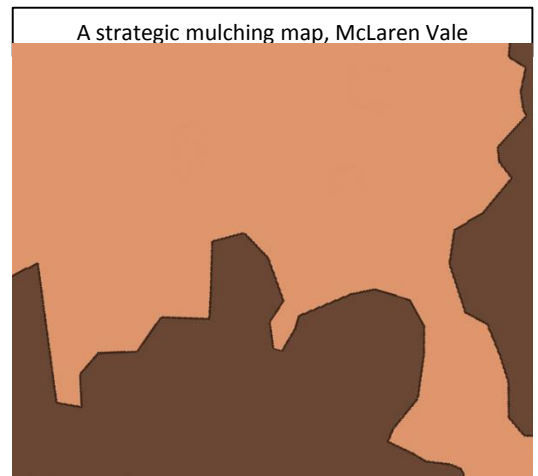
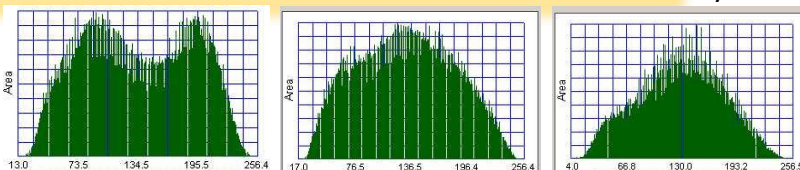
Rather than over-mulching much of the vineyard, as many growers currently do, you will be able to

- scientifically calculate exactly how much mulch should be laid in different areas
- calculate an accurate estimate of how much you should buy.

Through reducing wastage by these two methods, growers have been able to reduce mulching costs by up to 50%.

Case Study – McLaren Vale

One grower used PCD data to alter his management strategies over three years. From 2007 to 2009, he reduced standard deviation of his vineyard from 55.8 to 48.1 (as shown below), by planting cover crops, improving drainage and targeted mulching.



Driving profit by reducing variability

Whilst strategically reducing inputs can be cost-saving in the short term, it is also important to work towards reducing vineyard variability.

Again by correlating PCD data at veraison (and even more effectively by using data from veraison *and* flowering) with quality and yield data, you can begin to alter inputs to reduce variability.

Working with a PV consultant, you can alter mulching, pruning, drainage, irrigation and fertilisation practices to attain a more consistent vineyard.

It is essential throughout this process to continue monitoring changes by obtaining PCD data. Our evidence suggests that you should see more consistent crops after the first year, and after 4-5 years these changes would be considerable.

At this point, the overall value of your crop would be greatly.