



VINEYARD SAMPLING

In order for an accurate result to be given, the samples must be as representative of the sampling site as possible. Good sampling technique in the vineyard will provide analyses that are comparable to the must composition in the tank after harvesting.

What sample size should I take?

It is generally accepted that if the site has little variation, a 40 cluster sample would suffice. That is, 1 cluster from each of 40 random vines spread throughout the block. If sampling berries, take 3-4 berries per cluster (only sample one cluster per vine) from the 40 random vines spread throughout the block. The position of the berries in the cluster should vary: top, mid, bottom, interior, exterior and the clusters should vary in position on the vine: interior or exterior canopy. It might be a good idea to mark either the vines that the berry samples were taken from or the panel where the cluster sample was taken from to ensure consistency in sample area. If there is a significant number of secondary and tertiary clusters that are going to be harvested with the main crop, these need to be sampled in proportion with the main crop.

Sample variation within a vineyard block

There are several sources of variation within a vineyard block and these will all impact on the accuracy of the sampling.

- Outside rows and end vines: these vines will not be representative of the block as they are often the first vines attacked by birds that will take the ripest berries, may suffer from wind damage and will have access to more light and soil volume than interior vines resulting in vines that are stronger or higher yielding than the main block.
- Soil variation in the vineyard: this is particularly relevant in New Zealand which has a wide variation in its soils due to the large number of silt and gravel deposits resulting from old waterways. Soil variation will impact on the vigour of the vine and therefore the ripeness and yield of the fruit.
- Position of clusters on the vine: the amount of sun and light exposure the fruit gets will change the chemistry of the fruit.
- Flowering: Flowering is generally random on the inflorescence however, those flowers that are fertilized first can be more mature than berries that are fertilized later. This is especially true if flowering is extended due to cloudy, overcast weather. This can cause large variation within a bunch. Large differences are also seen if you compare the secondary or higher clusters with the basal ones.

Cluster samples versus Berry samples

As a general rule, cluster sampling is more accurate than berry sampling as well as being more effective if a large number of blocks need to be sampled.

The chemical composition of berries within a cluster can vary dramatically based on the position of each berry. Generally berries on the outside of a cluster are riper in sugar and lower in titratable acidity than those in the middle of a cluster, particularly if it is a tight-clustered variety. This is due to the difference in light interception and temperature between interior and exterior berries. Thus, a cluster sample will provide more representative data about the whole block than individual berry samples. However, if the block is small, an unreasonable amount of fruit may be sampled if using cluster sampling and a berry sample would be more appropriate.

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Storing of samples before sending to the lab

It is very important that the berries / clusters are undamaged to ensure the most accurate results. Berries will continue to respire after picking, so keeping them cool and dry is essential. We will provide ice packs to use in the chilly bin to keep the fruit less than 10 degrees. Please ensure ice packs are put in the freezer at least the day before they are required. It is preferable that the samples are sent as soon as possible after they have been taken.

We would prefer to test fresh samples as the method of juice extraction can significantly alter the chemical analyses, however, if required we can test frozen juice samples.

Disease in the samples

If there is disease present in the vineyard this must be represented in the vineyard sample. Disease will change the chemistry of the grapes by reducing potential colour, sugar levels or generating off flavours, for example, as well as reducing juice yields.

These samples need to be kept cool and sent to the lab as soon as possible. If you require chemical tests only then we advise a small sprinkling of powdered sulphur dioxide be added to reduce oxidation and the spread of disease in the humid conditions of a plastic bag. Please note that addition of any sulphur products is not suitable for samples to be tested for microbiology.

Sampling for specialized tests

We offer a number of specialized tests for grapes including methoxypryazine content, resveratrol, thiols and pesticide residues. In general, the samples need to be kept cool and dry in a ziplock bag. The samples need to be sent to us as quickly as possible after sampling. The minimum required quantity is 4 clusters or 500g of berries. Please contact the lab if you have further questions.