

Grape Sampling Strategy

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WHY MATURITY CONTROL?

Cluster sampling for fruit maturity after Veraison and up to harvest is one of the best techniques for monitoring and tracking crop maturity.

Grape quality is impacted by:

1. Maturity, purity and condition
2. Aroma/flavour and phenolic characteristics
3. Harvesting methods, transportation and processing protocols

Grape quality must be defined in terms of attributes suitable for a particular wine type and style. Grape quality parameters agreed upon between the grape producer and the wineries are the foundation for management decisions throughout the year.

A SYSTEMATIC SAMPLING STRATEGY

Berries ripen at different rates.

A crop with asynchronous clusters or berries features a range of developmental stages, leading to a mix where some berries achieve optimal sugar levels while others may be less ripe.

The key to a good estimate of fruit maturity is collection of a sample that is truly representative of the entire harvested unit.



Source: <https://rudolphresearch.com/measuring-refractive-index-refractometry/>

BEFORE YOU START: EQUIPMENT NEEDED

- Plastic zip-lock bags
- Marker (label the bags prior to placing berries/clusters inside)
- Cooler and cooling blocks/ice (if transporting the samples long distance)
- Refractometer and lab (or sending samples to a lab)



Photo taken by Katarina Vucic

Requirements:

You will need a large enough sample, sampled randomly. The goal is to objectively represent the entire crop that will be harvested and processed.

SAMPLING METHOD

There are two basic choices in fruit sampling: cluster sampling or berry sampling.

With cluster sampling, a further choice can be made by gathering clusters from throughout the vineyard or using one or more targeted vines.



Berry sampling: 100 berries minimum from all sides of the cluster.
Source: <https://imbibe-solutions.com/how-to-collect-grape-samples/>



Cluster sampling method.
Source: <https://winemakersresearchexchange.com/library/vineyard/vineyard-sampling-methods-clusters-vs-berries-vs-whole-vine>

Cluster Sampling Method

Best Practices

- Sample and taste often in the days and weeks leading up to harvest
- If possible, collect samples at the same time of day each time
- Be aware that weather such as heat spikes or rain events will affect results
- Crush and juice the grapes thoroughly
- Smaller berries and those on the interior of clusters are often left intact and will bias your sample



SOURCES OF BIAS

- Sampling from only the sun-side or only the shade-side
- Sampling only clusters near the outside of the canopy
- Sampling the largest, most obvious or easiest-to-grab clusters or berries
- Sampling from diseased or other non-representative vines
- Sampling from end vines and perimeter rows.
- Sample processing that doesn't thoroughly crush the berries and homogenize the juice

Parameter	Results	Units
Brix	8.2	Brix
Glucose + Fructose	38.5	g/L
Total Acidity	43.07	g/L Tartaric Acid
pH	3.12	-
Volatile Acidity	0.16	g/L Acetic Acid
Specific Gravity	1.0327	-
YAN	283.96	mg N/L
Malic Acid	28.17	g/L
Tartaric Acid	12.19	g/L
Citric Acid	2.23	g/L
Potential Alcohol - Low	2.1	% alc./vol.
Potential Alcohol - High	2.3	% alc./vol.
Potassium	2188	mg/L

Remember: Collecting samples RANDOMLY is KEY.

RESOURCES

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