Grape petiole analysis – What is your vine nutrients status?

Petiole testing can provide a snapshot of the nutrient status of the vine. Obtaining quantitative information on nutrient levels can assist in determining the effectiveness of fertiliser applications and also help identify the cause of any specific vine problems.

The following table outlines nutrient guidelines for the full list of parameters tested in our Petiole Analysis Suite.

Nutrient	Deficient	Marginal	Adequate	High	Toxic
Nitrogen (%)			0.80-1.10		
Nitrate Nitrogen (mg/kg)	<340	340-499	500-1200	>1200	
Phosphorus (%)	<0.15	0.15-0.24	0.25-0.50	>0.50	
Potassium (%)	<1.0	1.0-1.7	1.8-3.0		
Calcium (%)			1.2-2.5		
Magnesium (%)	<0.30	0.30-0.39	>0.40		
Sodium (%)			0.10-0.30	0.40-0.50	>0.50
Chloride (%)			<1.0	1.0-1.5	>1.0 or 1.5
Iron (mg/kg)		7	70		
Zinc (mg/kg)	<15	15-26	>26		
Manganese (mg/kg)	<20	20-29	30-60		>500
Boron (mg/kg)	<25	26-30	30-100		>100
Copper (mg/kg)	<3	3.6	>6		

From Iland et al, 2011: The Grapevine from the science to the practice of growing vines for wine. Patrick Iland Wine Promotions Pty Ltd.

Result Interpretation

The results from your petiole analysis can be compared with the developed standards in the above table, which relate to vegetative and reproductive performance. The standards have been developed in Australia for petiole samples collected at full flowering (80% cap-fall).

It is important to consider other factors when interpreting your petiole analysis results, such as shoot vigour and overall vine health and performance. We recommend contacting an agronomist or vineyard specialist for further advice.

Sample Collection

- It is recommended that sampling take place at full flowering or when approximately 80% of the flower caps have fallen off.
- Using clean hands and the gloves provided, collect a petiole (leaf stalk) of a basal leaf opposite a flowering cluster. Collect 100 petioles from throughout the planting.

- Sample from vines in a zigzag pattern to obtain a representative sample.
- Miss the first three vines in each row if there is an access road adjacent. Avoid sampling vines growing within areas with unusual features, such as rocky areas, poor drainage, near fences, trees, water troughs or fertilizer depots to minimise the risk of contaminated or skewed results. Avoid soiled, diseased or damaged plants. Do not sample petioles touching trellis wires, or plants that are under water or temperature stress.
- Preferably sample in the cool of the morning, before any moisture stress may occur.

Sample Transport

- Petioles should be placed in the brown paper bags provided and labels attached with the following information:

  Contact name
  Vineyard name
  Postal Address
  Tel, Fax
  Email
  Grape sample variety
  Tests required (Individual or full)

- Maintain samples in a cool environment prior to and during transportation. Do not seal samples in plastic bags or on unprotected ice - use newspaper or cardboard to keep separate.

- Samples should be dispatched to the nearest Winechek laboratory as soon as possible through the post using the provided Reply Paid sticker. Alternatively, samples can be couriered direct to the laboratories street address – please refer to our website.

Winechek Victoria has been accredited to receive samples from both within and external to the Phylloxera Exclusion Zone (PEZ) so there is no need to fill out any permits prior to sending samples.

For further information please go to the Ag Vic website

https://agriculture.vic.gov.au/biosecurity/moving-plants-and-plant-products/plant-quarantine-manual/conditions/condition-25f-grape-phylloxera-diagnostic-samples