



Grapevine trunk diseases in the vineyard

Part 1b



Vine assessment

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Introduction



- ▶ The vines that are planted have the greatest impact on the health and thus the productivity, longevity and **profitability** of a vineyard.
- ▶ Therefore it is essential to ensure that only healthy vigorous vines are planted.
- ▶ The health and vigour of a batch of vines should be sampled and assessed carefully and methodically to ensure an accurate numeric score that can be used to determine the quality of the vines.
- ▶ The quality score and accompanying pictures can then be used as an objective basis on which to negotiate with the suppliers should there be any problems.




Assessment process

- ▶ There are three parts to a quality assessment for any batch of vines:
 1. **Intrinsic** characteristics of the whole batch
 2. **External** appearance of five randomly selected vines
 3. **Internal** (destructive sampling) appearance of the five randomly selected vines
- ▶ The vines are assessed on a ten point scale.
- ▶ The overall score is calculated by adding the score for part 1 and the average scores of the five vines assessed in parts two and three together and dividing by 3.
- ▶ An average score over 6/10 is an indication that the vines are generally healthy and vigorous.
- ▶ However, vines should **always** be graded carefully before planting to ensure any poor vines are not planted regardless of the average score.





Dissecting sample vines

- ▶ Sample vines should always be dissected carefully and methodically.
 1. Peel away the bark from the trunk, graft union and scion
 2. Cut the vine into sections above and below the graft union, between the nodes and just above the base
 3. Split the sections longitudinally
 4. Score each vine individually and calculate average score
 5. Keep a record of the score
 6. Take good clear photographs of the exterior and interior of the vines and file with the score for each batch.
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Decision time!

- ▶ Once you have assessed your vines you need to make a decision about planting.
 - ▶ If you think that the vines are not good quality, do not plant them, but do not destroy them.
 - ▶ Contact the supplier with your concerns. An objective score and good photographs are essential evidence when negotiating a refund or replacement with the supplier.
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Practical exercise: quality assessment

- ▶ Using the three part assessment protocol and the score sheets that have been handed out, we will assess and discuss the batch of vines we have obtained for this workshop.
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Quality check: Intrinsic characteristics

Intrinsic quality standards – dormant and green potted vines	Score/10
Vines are derived from cuttings obtained from mother vine plantings that are regularly inspected for pests, diseases and off types	
Vines are of verifiable identity and traceable to mother block and nursery of origin	
Vines are accompanied by electronic and/or hard copy documents or reference numbers that enable trace back through all processes of the propagation chain.	
Vines have not have been left lying in the field nursery after digging for despatch at the end of the growing season.	
Vines have been protected to prevent dehydration during harvest, storage and transport.	
Vines have not have been exposed to petrochemical fumes, herbicides or plant hormones while in the nursery, or cold storage and transport.	
Vines have not have been soaked in water.	
Vines have been stored in bags with several small perforations to allow oxygen penetration and dissipation of CO ₂ .	
Vines have not have been deprived of oxygen during transport and storage.	
Vines have a pleasant, clean and slightly earthy smell not the “winey” or mouldy smell that is indicative of fermentation when storage bags are opened.	
Vines have not have been stored in cold rooms with climacteric fruits such as apples or produce treated with sprouting inhibitors.	
Average score	

Vines are scored on a scale of 1-10 where 10 = conform fully with the standard and 1 = do not conform. An average score of 5 or above indicates cuttings of questionable quality.

Quality check: vine assessment – external

Sample of 5 vines

External quality standards – dormant and green potted vines	Vine scores/10					Average
	1	2	3	4	5	
Vines are appropriately labelled with the name of the nursery, batch number, variety, clone and rootstock.						
Vines appear healthy, not blackened, or mouldy or, in the case of green potted vines, have healthy leaves not affected by high temperatures, pests or diseases.						
Vines are undamaged by machinery, birds or vermin.						
Vines have fully healed graft unions that do not break under moderate pressure from the thumb.						
Vines do not have excessive callus protruding more than 3mm from the graft union.						
Vines have at least three well-spaced healthy and strong roots.						
Each vine has at least one well developed shoot with a minimum of two healthy scion buds.						
Vines are straight, or with only a slight curve.						
Vines have a trunk diameter of not less than 7mm and not greater than 14mm.						
Average score						

Quality check: vine assessment – internal

Sample of 5 vines

Internal standards – dormant and green potted vines	Vine scores/10					Average
	1	2	3	4	5	
There are no signs of brown or black spotting or streaking in a cross sectional cut of the tissues of trunks, canes and roots.						
The interior of graft unions is not contaminated with organic or inorganic substances such as budding tape or ties.						
Disbudding wounds on rootstocks do not penetrate to the pith.						
No dark staining or streaking in the tissue that leads away from the graft union.						
No dark staining or streaking in the tissue that leads away from the disbudding wound.						
There are no signs of brown or black spotting or streaking in a cross sectional cut of the tissues of trunks, canes and roots.						
Grafts are fully healed with callus growing from both scion and rootstock.						
No dark or black/purple discolouration or streaking in the tissue at the base of the vine.						
Average score						

Thank you for your attention

