

Technical Data Sheet No 2 – Chalmers Nurseries Pty Ltd.

Rootstock Characteristics

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This table has been prepared as a guide for selecting a suitable rootstock. It summarises information from trials and many other sources.

Suitability of phylloxera resistant rootstocks in different environmental situations

| Group | Rootstock | Scion Vigour | Vegetative Cycle | Nematodes | Lime | Acid Soil | Salinity | Mag. Uptake | Drought | Water-logging |
|----------|--------------|--------------|------------------|-----------|------|-----------|----------|-------------|---------|---------------|
| A | 101-14 | M-L | Short | •• | • | X | •• | X | X | • |
| | Schwarzmann | M-L | Short | •• | • | X | • | X | X | • |
| | 3309 | M-L | Medium | X | • | X | X | •• | X | X |
| B | SO4 | M | Medium | • | •• | X | X | X | X | • |
| | 5C Teleki | M | Medium | • | •• | X | X | ? | X | X |
| | 5BB Kober | M-H | Medium | • | •• | X | X | ? | • | X |
| C | 110 Richter | M | Very long | • | •• | • | • | X | •• | • |
| | 1103 Paulsen | M-H | Long | • | •• | • | •• | •• | •• | • |
| | 99 Richter | M-H | Medium | • | •• | • | • | X | • | X |
| | 140 Ruggeri | H-M | Very long | ? | •• | •• | •• | •• | •• | X |
| D | K51-32 | M-H | Long | •• | • | ? | • | ? | •• | ? |
| | K51-40 | M-H | Long | •• | • | ? | X | ? | X | ? |
| E | Ramsey | H-M | Very long | •• | • | • | •• | ? | •• | X |

Key to table

•• Good
L = Low

• Moderate
M = Medium

X Poor
H = High

? Unknown

Additional Information

Phylloxera – the above rootstocks generally have high resistance to phylloxera, but K51-40 has not been tested

Groups – A = V. riparia x V. rupestris crosses, B = V. berlandieri x V. riparia crosses, C = V. berlandieri x V. rupestris crosses, D = V. champini x V. riparia crosses and E = V. champini.

Rootstock – note older SO4 plantings now identified as 5C Teleki and older 5A Teleki plantings identified as 5BB Kober

Scion vigour – given as a guide only as relative vigour of rootstocks varies in different environments e.g. different soil types or water availability.

Vegetative cycle – indicates comparative length of growing season, which affects time of scion wood maturity and may influence time of grape maturity.

Nematodes – refers to root-knot nematode resistance. Note that nematode populations of the same species can vary in aggressiveness in different regions. Also populations can develop in a vineyard which gradually overcome resistance.

Lime – Group A only tolerate about 10% active lime. 140 Ruggeri has higher tolerance than others in Groups B and C

Acid soil – choice may change if lime is applied prior to planting. More local trial data required to better define suitability

Salinity – indicates performance in saline soil. Interaction with drought is not considered here (rootstocks susceptible to drought may have higher salt uptake in drought situation).

Magnesium uptake – low magnesium uptake by some rootstocks especially SO4, in some soils may cause bunch stem necrosis, particularly with Cabernet Sauvignon and Merlot

Drought – Group B is slightly more tolerant than Group A

Waterlogging – refers to spring waterlogging of vines several years old. Note that some rootstocks e.g. 101-14 may be susceptible to waterlogging in early years, but more tolerant in later years.

Compatibility – incompatibility is rare, but the rootstocks 3309, 101-14 and 5BB Kober are more susceptible than others to compatibility problems, particularly where scion wood contains virus. Ramsey is incompatible with Muscat Gordo.

The information above has been sourced from the Riverland Vine Improvement Association trials 2002.

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Rootstock suitability to soil types and conditions

| Rootstock | Sandy soil – no water stress | Shallow loam or clay – no water stress | Deep loam or clay – no water stress | Dry soils or limited irrigation | Excessive water in soil | Low potassium uptake | Low salt uptake |
|------------------|-------------------------------------|---|--|--|--------------------------------|-----------------------------|------------------------|
| Schwarzmann | Suitable | Suitable | Suitable | Not suitable | Suitable | Marginal | Suitable |
| 140 Ruggeri | Marginal | Suitable | Marginal | Suitable | Marginal | Suitable | Suitable |
| 1103 Paulsen | Marginal | Marginal | Marginal | Suitable | Marginal | Suitable | Suitable |
| Ramsey | Suitable | Suitable | Suitable | Suitable | Marginal | Marginal | Suitable |
| 5BB Kober | Suitable | Suitable | Marginal | Marginal | Marginal | Suitable | Suitable |
| 5A Teleki | Suitable | Suitable | Marginal | Marginal | Marginal | Suitable | Suitable |
| 99 Richter | Suitable | Suitable | Marginal | Suitable | Not suitable | Suitable | Suitable |
| 5C Teleki | Suitable | Suitable | Suitable | Not suitable | Marginal | Suitable | Suitable |
| 101-14 | Marginal | Marginal | Marginal | Not suitable | Not suitable | Marginal | Marginal |
| SO4 | Marginal | Marginal | Marginal | Not suitable | Marginal | Marginal | Marginal |
| 110 Richter | Suitable | Suitable | Suitable | Suitable | Suitable | Suitable | Suitable |
| K51-40 | Suitable | Suitable | Marginal | Not suitable | Marginal | Not suitable | Marginal |
| K51-32 | Suitable | Suitable | Marginal | Not suitable | Marginal | Not suitable | Marginal |
| Harmony | Suitable | Suitable | Marginal | Not suitable | Marginal | Not suitable | Marginal |
| Freedom | Marginal | Suitable | Marginal | Marginal | Marginal | Not suitable | Marginal |
| 3309 Couderc | Marginal | Suitable | Suitable | Not suitable | Suitable | Marginal | Marginal |
| Riparia gloire | Not suitable | Marginal | Marginal | Not suitable | Not suitable | Marginal | Marginal |

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| Variety | Clone VCR | Rootstock Used In Italy | Known Incompatibilities |
|--------------------|-----------|--------------------------------------|-------------------------|
| Aglianico Taurasi | 23 | SO4, K5BB, 1103 P, 110 R | |
| Aglianico Vulture | 11 | Kober 5BB, SO4, 1103 P, 420A | |
| Fiano | 3 | 420A, K5BB, SO4, 1103 P, 110 R | |
| Garganega | 4 | 420A, SO4, 1103 P | K5BB |
| Greco di Tufo | 5 | 420A, K5BB, SO4, 1103 P | |
| Lambrusco Salamino | 1 | K5BB, SO4 | |
| Lambrusco Maestri | 1 | K5BB, SO4, 1103 P | |
| Malvasia Istriana | 4 | 3309, 420A, SO4, 110 R | |
| Marzemino | 3 | K5BB, SO4 | |
| Merlot | 1 | All | |
| Merlot | R12 | All | |
| Moscato Giallo | 5 | K5BB, SO4, 1103 P | |
| Negro Amaro | 10 | K5BB, SO4, 1103 P, 420A | 3309, 101-14 |
| Pinot Bianco | 5 | All | |
| Pinot Grigio | 5 | All | |
| Pinot Nero | 18 | All | |
| Prosecco | 101 | 420A, K5BB, SO4 | |
| Refosco P.R. | 14 | 3309, 101-14, SO4, 420A, K5BB | |
| Sangiovese | 5 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Sangiovese | 6 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Sangiovese | 102 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Sangiovese | 16 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Sangiovese | 19 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Sangiovese | 23 | 420A, 1103 P, SO4, K5BB, 110R, 3309 | |
| Sangiovese | 30 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Sangiovese | 4 | 420A, 1103 P, SO4, K5BB, 110 R, 3309 | |
| Vermentino | 1 | 1103 P, K5BB, SO4 | 420A |
| 110 R | 114 | | |
| 1103 P | 107 | | |
| 1103 P | 119 | | |
| 140 RU | 120 | | |
| 420A | 103 | | |
| 101-14 | 122 | | |

Please Note: The above has been supplied by VCR, Italy as a guide only. Please refer to your soil type and experience with other rootstocks in your area/vineyard when making your selection.