



# The Riversun Rootstock Project – Part 1

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This table is intended as a quick reference to compare rootstock characteristics and performance under New Zealand conditions. It is based mostly on current New Zealand viticultural experience and includes reference to the international literature where appropriate. It has been assembled using our own observations and those of a wide selection of experienced and expert contributors across the major New Zealand viticultural regions.



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PROPERTIES	101-14	Schwarzmann	3309	3306	Riparia Gloire
<b>Scion budburst</b>	Early: Reported as the second-earliest rootstock in this group in most regions of New Zealand	Early: Reported as the earliest rootstock in this group in most regions of New Zealand	Early: Reported as the fourth-earliest rootstock in this group in most regions of New Zealand	Early: Reported as the latest rootstock in this group in most regions of New Zealand (appears to be slightly later than 3309)	Early: Reported as the third-earliest rootstock in this group in most regions of New Zealand
<b>Maturity</b>	Advances maturity: Appears to advance maturity earliest of all the Riparia and Riparia/Rupestris crosses	Advances maturity: Appears to advance maturity slightly later than 101-14	Advances maturity: Appears to advance maturity slightly later than 101-14	Advances maturity: Appears to advance maturity later than the other Riparia/Rupestris crosses	Advances maturity: Appears to advance maturity shortly after Schwarzmann and 3309
<b>Vegetative cycle</b>	Short	Short	Short to moderate	Short to moderate	Short
<b>Vigour</b>	Low to moderate: Considered to be more vigorous than Riparia Gloire	Moderate: Slightly more vigorous than 101-14, 3309 or 3306	Low to moderate: More vigorous than 101-14	Low to moderate: More vigorous than 101-14	Low
<b>Soils</b>	Reported to require deep moist soils, but is sensitive to poorly drained and/or heavy clay sites	Reported to require deep moist soils. Schwarzmann has performed well in New Zealand on a wide range of soils with suitable irrigation	Reported to require deep, moist and cool soils that are well drained. 3309 is not suitable for dry, shallow soils and is a poor performer in heavy or poorly drained soils	Reported to require deep, moist and cool soils that are well drained. 3306 appears to tolerate heavier, fine-textured and imperfectly drained soils better than 3309	Reported to require deep moist soils, although it can also be used in poor soils to reduce the vigour of the scion
<b>Root system (as reported in the international literature)</b>	Has a fairly shallow, well-branched root system	Has a finer root structure; exploits good soils well	Has a moderate to deep, well-branched root system	Has a moderate to deep, well-branched root system	Has a shallow-growing, well-branched root system
<b>Drought resistance</b>	Poor drought resistance: Requires irrigation	Poor drought resistance: Requires irrigation	Poor to moderate drought resistance: Requires irrigation	Poor to moderate drought resistance: Requires irrigation	Poor drought resistance: Requires irrigation
<b>Water-logging</b>	Very prone to root diseases on clay or in water-logged soils	Moderately tolerant in water-logged soils – the most tolerant of the Riparia/Rupestris crosses	Poor tolerance in water-logged soils	Moderately tolerant in water-logged soils	Moderately tolerant in water-logged soils
<b>Lime tolerance (as reported in the international literature)</b>	Low to moderate tolerance: Reported to tolerate lime soils up to 9%	Reported to be more tolerant of lime soils than the other Riparia/Rupestris crosses	Moderately tolerant: Reported to tolerate lime soils up to 11%	Moderately tolerant: Reported to tolerate lime soils up to 11%	Low tolerance: Reported to tolerate lime soils up to 6%
<b>Acidity</b>	Reported as not being suited for acidic soils; soils should be adjusted first	Reported as not being suited for acidic soils; but has shown moderate tolerance to acidic soils in Australia	Reported as not being suited for acidic soils; soils should be adjusted first	Reported as not being suited for acidic soils; soils should be adjusted first	Tolerance is not reported in the international literature
<b>Salinity</b>	Quite resistant to salinity	Moderately resistant to salinity	Does not tolerate saline soils	Does not tolerate saline soils	Moderately resistant to salinity
<b>Nutrient uptake</b>	Reported to be poor at Magnesium uptake and marginal at excluding Potassium	Reported in Australia to be poor at excluding Potassium	Reported to induce Potassium deficiency in certain conditions	Reported to induce Potassium deficiency in certain conditions	Reported to show Magnesium deficiency early in the season
<b>Yield</b>	Not much information, but reported to be similar in yield to 3309	Good yields observed in New Zealand and Australia	Can easily be overcropped	Can easily be overcropped	High
<b>Fruit set</b>	Reported to improve fruit set, better than 3309	Improves fruit set	Reported to improve fruit set on varieties that have poor set	Reported to improve fruit set on varieties that have poor set	Improves fruit set
<b>Phylloxera resistance</b>	Reports vary from high to moderate resistance to Phylloxera	High resistance to Phylloxera	High resistance to Phylloxera	High resistance to Phylloxera	High resistance to Phylloxera
<b>Nematode resistance</b>	Reported to be moderately resistant	High to moderate resistance	Susceptible to nematodes	Very susceptible to nematodes	Moderately resistant to root-knot and dagger nematodes
<b>Susceptibility to soil-borne pathogens</b>	Reported as susceptible to fungal root rots, particularly Blackfoot; resistant to Crown Gall	Appears moderately resistant to fungal root rots and Crown Gall	Reported to be resistant to Crown Gall but susceptible to Phytophthora and other root rots, especially in wet conditions	Reported to be resistant to Crown Gall but susceptible to Phytophthora and other root rots, especially in wet conditions	Not noted as being particularly susceptible to fungal root rots
<b>Propagation</b>	Very good	Very good	Very good	Very good	Good
<b>Establishment</b>	Establishes well	Establishes easily and grows well	Establishes well	Establishes well	More difficult to establish in the vineyard. Good care of newly planted vines essential. The rootstock stem does not thicken as quickly as the scion
<b>Incompatibilities</b>	Scion incompatibilities tend to show up when the vines bear fruit. Several reported in the international literature, particularly with Syrah and Chardonnay	None documented or observed in New Zealand	Several reported in the international literature, particularly with Grenache, Gamay, and Barbera. Some incompatibilities noted on some sites in New Zealand	Some incompatibilities noted on some sites in New Zealand	Scion incompatibilities tend to show up early
<b>Sanitary (health) status</b>	PCR-clean selections available in New Zealand. Extensive testing for Leafroll virus types 1 and 3 by Riversun has identified the occasional positive mother vine	PCR-clean selections available in New Zealand. No positive vines of Leafroll virus types 1 and 3 discovered. Generally a very health stock	Original source material has Rupestris stem pitting; no PCR-clean selections available in New Zealand yet. Some Leafroll virus 3 has been found in 3309	PCR-clean selections available in New Zealand. Extensive virus testing for Leafroll virus types 1 and 3 by Riversun has identified a number of positive vines for Leafroll virus 1	PCR-clean selections available in New Zealand. Extensive testing for Leafroll virus types 1 and 3 by Riversun has identified the occasional positive mother vine
<b>Usage</b>	Intended for controlled-yield high-quality viticulture	Suitable for premium and commercial-quality viticulture	Intended for controlled-yield high-quality viticulture	Intended for controlled-yield high-quality viticulture	Intended for controlled yield high-quality viticulture on more fertile sites
<b>Demand</b>	Currently New Zealand's most in-demand rootstock	Second-most preferred rootstock after 101-14; similar demand to 3309	Currently in second place with Schwarzmann in New Zealand	Currently in fourth place, after 101-14, Schwarzmann and 3309 in New Zealand	The fifth most popular rootstock after 101-14, Schwarzmann, 3309 and 3306