

California Grapevine Nursery Rootstock Chart

ROOTSTOCK	PARENTAGE	PHYLLOXERA RESISTANCE	VIGOR	COMPARATIVE MATURITY RATES	ADAPTATION TO DROUGHT	ADAPTATION TO "WET FEET"	NEMATODE RESISTANCE (ROOT-KNOT)	ROOTING QUALITY	FIELD BUDDING QUALITY	BEST SOIL & CLIMATE CONDITIONS	OTHER UNIQUE QUALITIES
Riparia Gloire	Riparia	Good	X	Early	Poor	Good	Moderate	Good	Good	Deep rich soil in close plantings. Med. to deep well-drained, sandy gravelly, rocky, silt, cool.	Wet/cold soil tolerant. Resistant to crown gall. Survives cold & rain.
420A	Berlandieri X Riparia	Good	X	Early	Poor-Fair	Poor-Fair	Poor-Fair	Poor-Fair	Good	Fresh fertile soil best. Can adapt to chalky or heavy & dry shallow soils w/ water. Good for close spacing.	Good in chalky soil. Chlorosis resistant, potassium deficient. Small density, shallow root system.
101-14Mg	Riparia X Rupestris	Good	XX	Early	Poor-Fair	Good	Moderate	Good	Good	Fresh clay, moist deep soils & moderate climate. Needs irr. in hot dry areas. Low resistance to lime.	Improves fruit set. Resistant to crown gall & salinity. Claims of chard & syrah incompatibility.
3309C	Riparia X Rupestris	Good	XX-XXX	Mid	Differs Widely	Fair	Poor	Good	Sensitive To Viruses From Wood	Fresh deep non-clay soils, close spacing & cool sites.	Resistant to crown gall. Can take cold.
44-53 Malegue	Rip X (Cordif X Rupestris)	Good	XXX	Mid	Fair-Good	Good	Good	Good	Good	Better in moist, deep soils or irrigated in warm areas.	Improves fruit set. Takes acid soils. Low magnesium uptake, adapts to high magnesium soils.
Schwarzmann	Riparia X Rupestris	Good	XXX	Mid	Fair	Fair-Good	Fair-Good	Good	Good	Moist deep soils. Not for heavy or drought soils.	Improves fert. of scion. Stem thickens quickly.
S04	Berlandieri X Riparia	Good	XXXX	Mid	Poor-Fair	Fair-Good	Good	Good	Good	Moist clay/cool wet. Not for dry soils/ drought conditions.	Similar to 5C, slightly less vigorous than 5BB.
5C	Berlandieri X Riparia	Good	XXXX	Mid	Fair	Fair	Good	Good	Good	Cooler areas, best with humid clay loam soils, but can take heavy clay; shallow root system.	Has broad nematode resistance. young plants need water.
5BB	Berlandieri X Riparia	Good	XXXX	Mid	Differs Widely	Poor	Varies	Good	Sensitive To Viruses From Wood	Cooler areas, best with humid clay loam soils, but can adapt to heavy soils if not water-logged.	Better drought resistance than 5C & 420A. Slightly more vigorous than S04 & 5C.
1103 Paulsen	Berlandieri X Rupestris	Good	XXXXX	Mid-Late	Good	Good	Fair	Good	Good	Drought soils, hillsides best. Can adapt to water-logging & clay-lime soils.	Resistant to lime, salt & clay. Susceptible to potassium deficiency.
110R	Berlandieri X Rupestris	Good	XXXXX	Mid-Late	Excellent	Poor-Fair	Low-Fair	Poor-Fair	Field Grafts Well	Shallow drought soils & hillsides. Can adapt to sandy, gravelly, silt, rocky clay.	Tolerant of some acid & lime. Crown gall susceptible. Deep root system.
140R	Berlandieri X Rupestris	Good	XXXXXX	Mid-Late	Excellent	Poor-Fair	Moderate	Poor-Fair	Varies	Best suited to dry farmed sites and drought prone soils. Can adapt to shallow clay.	Good tolerance to lime based soils.
VR 039-16	Vinifera X Rotundifolia	Questionable Long-Term	XXXXX	Mid-Late	Poor		Fan-Leaf Tolerant	Poor	Varies	Drought sensitive. Use only in fan-leaf zones as last resort.	High sodium & chloride levels. Zinc deficient. Over cropping & poor color in table grapes. Largest number of roots.
St. George	Rupestris	Good	XXXXX	Late	With Deep Soil Good	Poor-Fair	Poor	Good	Good	Dry deeper soils & on hillsides. Deep large roots.	High juice potassium. Poor fruit set.
Harmony	1613C X Champinii	Not Recommended	XXXXXXA	Late	Fair	Poor	Very Good	Good	Good	Sandy soils best, only if root-knot nematodes a problem & no phylloxera.	Crown gall resistant. High potassium, sodium & zinc in table grapes.
Freedom	1613C X Champinii	Questionable Long-Term	XXXXXXB	Late	Good	Poor	Very Good	Good	Sensitive To Viruses From Wood	Sandy soils best, only if root-knot nematodes a problem & no phylloxera.	Highest nitrogen & potassium potential in table & wine grapes.
Salt Creek (Ramsey)	Champinii	Questionable Long-Term	XXXXXXC	Late	Fair-Good	Good	Very Good	Good	Good	Loamy sands to fine sands. Warm climate.	Susceptible to crown gall. Can take salinity. High zinc, nitrogen, potassium & phosphorus in table grapes.
99R	Berlandieri Las Sorres X Rupestris Du Lot	Good	XXXX	Mid-Late	Moderate	Poor-Fair	Low-Fair	Fairly Well	Good	Tolerates up to 17% active lime, but does not tolerate salt.	Similar to 110R. Not as vigorous.
1616C	Solonis X Riparia	Good	XX	Early-Mid	Poor	Good	Moderate	Good	Good	Fairly weak variety. Best in fertile, humid, badly drained soils without excess lime.	Can withstand only up to 11% active lime.
161-49C	Riparia X Berlandieri	Good	X-XX		Poor	Fair-good	Poor	Fair	Varies	For humid fertile soils. Tolerant of high lime soils.	In dry conditions susceptible to thyllosis. Cases of incompatibility with scion varieties.
Gravesac	161-49C X 3309C	Very Resistant To Root Form	Moderate		Moderate		Low	Good	Good	Good results in sandy & sandy-gravelly soil.	Average requirements in potassium. Quite resistant to magnesium deficiency.

This data compilation is meant to be used as an initial information source only. Growers are encouraged to seek further information from research and viticultural experts' advice. A complete bibliographical listing of sources for this data is available upon request.