

Foothill Wine Grape Day
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ROOTSTOCK SELECTION

The academic approach:

Familiarize yourself with your site. Determine the soil type, depth, structure, water holding capacity and fertility. Decide planting density, trellis style and block layout based on above site characteristics and irrigation capacity. Determine if and what soil pests are present. Select rootstock.

A very common approach:

Buy whatever rootstock the nursery has available!

There are many things concerning rootstock that will not be covered today. I will briefly mention just two of them here. First, rootstocks respond very differently to different vine and row spacings in terms of both growth and yield. Secondly, rootstocks affect vine nutrition somewhat consistently across several varieties.

The bottom line of the interaction of rootstock with planting density is crop load per vine versus yield per acre. In general, crop load per vine increases with wider row spacings. This is primarily due to larger clusters because there are more berries per cluster. Also, yield per acre is greater with narrower row spacings due to more vines per acre.

Nutrient levels (as measured by bloom petiole analysis) are affected by rootstock. Some examples are provided here.

N: Nitrate - nitrogen: High = 039-16, Freedom, 3309. Low = Harmony, 5C, own root.
P: Phosphorus: High = 110R. Low = Harmony, Freedom.
K: Potassium: High = Harmony, Freedom, 039-16. Low = 110R, 5BB, AXR#1.

Rootstocks are a product of their heritage. A brief description of the characteristics of three *Vitis* species that are used as rootstocks follows.

Riparia

- Moist sites near streams, high humidity, variable soils but generally high organic matter and fertile;
- not widely adapted to limestone soils;
- susceptible-to-weak resistance to nematodes;
- hastens maturity in scions.

Rupestris

- Rocky streambeds with standing water near the crown at times;
- not very fertile sites due to excessive leaching;
- susceptible to nematodes;
- no dramatic affect on maturity of scions.

Berlandieri

- Found on limestone bluffs in relatively dry areas in central Texas;
- also adapted to non-limestone areas;
- some selections have resistance to root knot nematode.

Examples of commonly used rootstocks and their parents:

- *Vitis berlandieri* x *Vitis rupestris*: 110R, 140R, 1103P
- *V. rupestris*: St. George
- *V. berlandieri* x *V. riparia*: 5C, 5BB, 420A
- *V. riparia* x *V. rupestris*: 101-14, 3309C
- (Longii x Othello) x Dog Ridge: Freedom, Harmony

