

|   |                                 | Maturity & |              | Nematode resist. and toler.                          |                            |             | Phylloxera | Lime      | Drought   | Crown gall | Phytophthora   | Comments  | 03-05 yield  | 03-06 yield | nursery         |   |
|---|---------------------------------|------------|--------------|--|----------------------------|-------------|------------|-----------|-----------|------------|----------------|---|--|-------------|-----------------|---|
| Rootstock   | Vitis Parentage                 | Veg cycle  | Vigor        | Rootknot   | Dagger                     | Root lesion | resistance | tolerance | tolerance | resistance | root rot susc. |   | Cab. Franc   | Chardonnay  | status          |   |
| Most vinifera   | vinifera                        | varies     | varies       | low, i   | low, i                     | low, i      | low        | varies    | varies    | sus, l     | low            | alkalinity tolerant, Chardonnay was 0.5 brix lower than grafted   |  | 5.8         |                 |   |
| Ramsey (Salt Cr.)   | champinii                       | late, 4    | High-ex high | High, t  | low, i                     | high, t     | mod, high  | mod-high  | mod-high  | mod/tol    | low-high       | Iron chlorosis toler., high N & K, suited to sandy soils, but adaptable to almost any, susc. To Zn def.                     |  |             |                 |   |
| V. Champinii imparts cotton root rot resistance, unknown for hybrids  |                                 |            |              |  |                            |             |            |           |           |            | Cotton         | tolerates mod. wetness and salinity, hard to propagate. Moderate resistance to Armillaria root rot.                         |  |             |                 |   |
| Dog Ridge   | champinii                       | late, 4    | High-Ex high | high t   | low, i                     | m-h, t      | mod, high  | low-mod   | L, M, H   | res        | mod/Cotton     | High N, K, & juice pH, suckers, wetness and salt tolerance, good for low vigor scion in sandy soils.                        |  |             |                 |   |
| Freedom   | champinii x 1613                | late, 4?   | high         | High, t  | high,                      | mod,        | high       | mod?      | mod       | res        | mod-high?      | High N & K, suited to sandy soils, but does well in loams. Most resistant to Armillaria.                                    |  | 8.6         | 2               |   |
| Harmony   | "                               | late, 4?   | mod-high     | mh, in   | ml, in                     | low, i      | mod, low   | mod       | mod       | res        | mod-high?      | suited to medium and sandy soils. High K uptake, reduced N.   |  |             | others better   |   |
| RS-3  | riparia x rupestris x champinii |            | mod-high     | high   | mod-high                   | mod-high    | high?      | mod?      | mod?      | high?      | mod-high?      | Highly recommended, but not widely tested. Less K uptake and  |  |             | 1               |   |
| (Ramsey x Schwar.)  |                                 |            |              | also mod.  | Resistant to ring nematode |             |            |           |           |            |                | vigor than Ramsey but similar resistance and tolerances. Reported to bring balance to the vine in med. Texture soils.       |  |             |                 |   |
| RS-9  | "                               |            | low          | High   | High                       | High        |            |           |           |            |                | Coarse textured soils, not widely tested  |  |             | 2               |   |
| Riparia Gloire  | riparia                         | early, 1   | low-mod      | low  | mod                        | na          | high       | low       | low       | mod-high   |                | well drained deep, moist, fertile loams, improves set, often overcrops. Low N, susc to Armillaria                           |  |             |                 |   |
| Schwarzmann   | riparia x rupestris             | mid, 1     | low-mod      | high, t  | high, t                    | low         | high       | mod-high  | low-mod   | high       | high           | suited to deep moist soils, tends to overbear, mod high salt  |  |             | others better   |   |
|   |                                 |            |              |  |                            |             |            |           |           |            |                | and some wetness toler. high K and low Mg passed to fruit   |  |             |                 |   |
| 3309C   | "                               | mid, 2     | mod          | low, in  | mod, t                     | mod,        | high       | mod       | low-mod   | res        | low-v. high    | suited to deep soils, some wetness tolerance, improves set, susc.   |  | 6           | 6.2             | 1 |
|   |                                 |            |              |  |                            |             |            |           |           |            |                | to Armillaria, low K, sensitive to acid soils   |  |             |                 |   |
| 3306C   | "                               | mid?, 2?   | mod          | low-mod, in  | low-mod, in                | mod         | high       | mod       | low-mod   |            | low-mod        | suited to moist fine textured soils, resistant to M. arenaria (Peanut), less vigor than 3309                                |  |             |                 |   |
| 101-14  | "                               | early, 1   | low-mod      | mod-high, ir   | low-mod, in                | mod         | high       | mod       | low-mod   | res        | low-mod        | suited to mod-deep clays, tolerates wetness and mod. salinity, high N & K, improves set., low juice pH.                     |  |             | 1               |   |
| 44-53M  | " x cordifolia                  | mid, 2     | mod-high     | low  | mod                        | mod         | mod, high  | low-mod   | mod-high  |            | vhigh          | suited to high Mg soils & tol. Mod. acid., has high K. Tendency to overbear.  |  |             |                 |   |
| Boerner   | " x cinerea                     |            | mod          | high   | high                       |             | high       | low       |           |            |                |   |  |             |                 |   |
| 99R   | berlandieri x rupestris         | mid, 4     | mod-high     | mod-high   | low-mod                    | low-mod     | mod, high  | mod       | high      | low        | mod-high       | wide range of mod. And well drained soils (including acid), good constant ylds. High K.                                     |  |             |                 |   |
| 110R  | "                               | m/l, 1     | low-mod      | mod, i   | low, i                     | low,        | high       | mod       | very high | sus        | mod            | low juice pH, suited to dryland and hills, high yields, Mod. Res. to Arm.   |  | 8.3         | 1               |   |
| 140R  | "                               | m/l, 2     | mod-vhigh    | High   | low                        | low         | high       | high      | very high | mod        | mod            | high yielder, wide variety of infertile/dry soils, tolerates salinity, low pH   |  | 9           | 1               |   |
| 1103P   | "                               | m/l, 4     | mod          | mod-high   | low-mod                    | mod         | high       | mod       | high      | mod        | high           | tolerant of wetness, salinity, and low pH, suited to clay so  |  | 8.3         | 7.2             | 1 |
|   |                                 |            |              | Can have high vigor if planted in deep fertile soils |                            |             |            |           |           |            |                |   | Had some (roots) submersed in a bucket over 2 weeks and 56% survived |             |                 |   |
| St. George  | rupestris                       | late, 4    | mod-vhigh    | low, in  | low, i                     | mod,        | mod-high   | mod       | mod       |            | high           | better on deep well drained soil, but not good w/ shy bearers (High N)  |  |             | others better   |   |
| Susceptible to oak root fungus  |                                 |            |              |  |                            |             |            |           |           |            |                | (e.g., pinot noir, chardonnay or merlot), high K.   | 7.7  | 10.1        |                 |   |
| 5BBK  | berlandieri x riparia           | mid, 2     | mod-high     | high, t  | low, in                    | low,        | high       | mod       | low-mod   | res        | low            | Suited to fertile clay loams in cool areas.   |  |             | 8 others better |   |
|   |                                 |            |              |  |                            |             |            |           |           |            |                | some cot. root rot resistance, susc. to Armillaria, High K and pH. Both 5BB & 5C have low-mod. wetness tol. And give low pH |  |             |                 |   |
| 5A  | "                               | early, 2?  | high         | mod  |                            |             | high       | mod       | low       |            |                | Genetically identical to 5BB, probably an early maturing vigorous clone.  |  |             | others better   |   |
| 5C  | "                               | mid, 3     | mod          | mod  | low-mod                    | mod         | high       | mod       | low-mod   | low-mod    | low            | Suited to deep fertile C loams. Good for var. w/ poor set (low N) and ripens wood. Selected from 5A.                        |  |             | others better   |   |
| SO4   | "                               | mid, 2     | mod          | Mod, t   | sus, in                    | sus         | high       | mod       | low-mod   | mod        | low-mod        | Suited to irrig. soils and var. with poor set. Good wood ripening, & some acid tolerance                                    |  |             | others better   |   |
| 420A  | "                               | early, 2   | low-mod      | mod, i   | low                        | low         | high       | mod       | mod       |            | low            | Suited to poor clayey soils. Shorter veg. cycle. Overbear when young. Low N & K.  |  |             | others better   |   |
| 125AA   | "                               | mid?, 4    | Mod-high     |  |                            |             |            | mod-high  | mod-high  | high       |                | Dense soils w/ poor drainage, & high yielders but not var. w/ irregular set. Mod. Tol. Of acid. High N                      |  |             |                 |   |
| 1616C   | acerifolia x riparia            | mid, 4     | low          | High, t  | mod, in                    | ?           | mod, high  | low-mod   | low       |            | good           | suited to fertile soils, tolerates wetness and salinity, reduced N, high K.   |  |             | 2               |   |
| 1613C   | " x vinifera x labrusca         |            | mod          | mod, i   | mod, t                     | low, i      | mod        | low       | low-mod   |            |                | suited to moist fertile sandy/sandy loam soils, tolerates wetness and salinity  |  |             | others better   |   |
| VR039-16  | " x rotundifolia                | m/l        | high         | low  | Vhigh                      |             | high       | low       | low       |            |                | tolerant of fanleaf virus, and acid soils, High N & K. susc to Armillaria   |  |             |                 |   |
| 8909-05   | rotundifolia x rupestris        |            | mod-high     | vhigh  | vhigh                      | vhigh       | high       |           |           |            |                | still in testing, PD resistant, not cold hardy  |  |             |                 |   |
| 9365-43   | complex x (Dog rid. x Riparia)  |            | mod          | high   | high                       | high        | high       | Vhigh?    | vhigh?    |            |                | ", Moderate ring nem. Resist.   |  |             | 3               |   |
| 9365-85   | rofutomen. X dog x riparia      |            | mod-high     | high   | high                       | high        | high       |           |           |            |                | ", lower nematode res. Than 43, but more vigorous   |  |             | 3               |   |
| 9407-14   | complex x (Ramsey x Riparia)    |            | low-mod      | high   | high                       | high        | high       |           |           |            |                | Not widely tested   |  |             | 3               |   |
| ES 15-53  |                                 |            |              |  |                            |             |            |           |           |            |                | ", Adds 10+ degrees of cold hardiness to scion, still in testing  |  |             | 3               |   |
| Fercal  | berlandieri x columbard         |            |              | med  | med                        | med         | high       | Vhigh     | low-med   |            |                | favors fruitset, tolerates some wetness, still in testing   |  |             | Not recommended |   |
| Gravesac  | 161-49c x 3309c                 | 2          |              | low  | low                        | low         | high       | mod       | mod       |            |                | tolerates some wetness, bred for acid soils   |  |             |                 |   |
| Minn 1095   |                                 |            |              |  |                            |             |            |           |           |            |                | Adds cold hardiness, still in testing   |  |             |                 |   |
| Vegetative cycle 1= shortest 4= longest   |                                 |            |              |  |                            |             |            |           |           |            |                |   |  |             |                 |   |
| The general consensus is that most rootstocks impart some cold hardiness to most vinifera varieties. However, some can impart excessive vigor and reduce cold hardiness. Some rootstocks can even delay budbreak. |                                 |            |              |  |                            |             |            |           |           |            |                |   |  |             |                 |   |

