

COMPLEX PARENTAGE INCLUDING VITIS VINIFERA

613 Coudere - This is a common rootstock in California due to its nematode-resistance, however, it has insufficient phylloxera resistance to be used in the North Coast or other phylloxera-infested areas.

Harmony & Freedom - These stocks were developed by the USDA to provide a combination of root-knot nematode resistance and phylloxera resistance. These stocks have only recently been used in the North Coast to any great extent. In laboratory tests, Freedom showed a greater resistance to Type B phylloxera than did Harmony. However, due to the *V. vinifera* in the parentage of these stocks, their long term phylloxera resistance must be questioned. Rootstocks without *V. vinifera* in their parentage would be better choices for use in the North Coast.

VITIS VINIFERA X VITIS ROTUNDAFOLIA

SW  
LW  
039-16 and 043-43 - These two rootstocks were recently patented and released by the University of California specifically for use in vineyards infested with Grapevine Fanleaf Virus (GFLV) and its nematode vector *Xiphinema index*. They are often referred to as the VR hybrids (see *California Agriculture* March-April 1989). In work in Dr. Jeffrey Granett's lab at UCD, 039-16 was shown to have better resistance to Type B phylloxera than 043-43. Because of this, and the fact that 043-43 acquired GFLV sooner, 039-16 would seem to be a better rootstock choice for vineyards infested with GFLV and *Xiphinema index*. As with Harmony and Freedom, the long-term phylloxera resistance of these stock must be questioned due to the *V. vinifera* in the parentage. However, because fanleaf can be such a devastating disorder, the planting of 039-16 is warranted in vineyards where both the virus and the nematode vector are present. 039-16 is a vigorous stock which has easily supported quadrilaterally trained vines.

Selected References:

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lesion nematode, citrus nematode, and *N. arvensis* pv. *Harmony* than is Freedom. It is less tolerant of nematode feeding than Freedom so pre-plant fumigation will be useful wherever grapes follow grapes.

K51-32 -- (*V. champini* X *V. riparia* by L. Lider). In most ways this stock performs similar to Ramsey except it is an excellent host for ring nematode which is common in the sandy soils where we would want to use it. Not recommended.

DOGRIDGE -- (*V. champini*). Too vigorous and not as broad of nematode resistance as that in Ramsey. Not recommended.

COUDERC 1613 -- (complex cross of *V. labrusca*, *V. riparia*, and *V. vinifera* in 1881). This stock performs well on sandy loam or finer-textured soils but not on sandy soils. Freedom provides broader nematode and phylloxera protection than 1613C. Major reasons for its failure on sandier soils are its extreme susceptibility to ring nematode, its susceptibility to a non-galling root knot nematode and its inherent ability to grow better on sandy loam versus sand.

SCHWARZMANN -- (*V. riparia* X *V. rupestris* by Schwarzmann in 1891). Against ectoparasitic nematodes this stock performs as well as Freedom. Against endoparasitic nematodes it does not perform as well as Freedom but is tolerant of nematode feeding and tends to keep endoparasitic nematodes off its older roots. This stock should be field evaluated in the north coast region and it has potential in breeding programs.

VR 039-16 -- (*V. rotundifolia* X *V. vinifera* by Lider, Olmo, Goheen 1988). This rootstock contains *V. vinifera* parentage making its value against phylloxera questionable. It is susceptible to all endoparasitic nematodes but especially to root lesion nematode. In warm sandy soils this stock provides no nematode protection advantage over Freedom. Against ectoparasitic nematodes it appears to provide wide protection but no better than that in Freedom or Schwarzmann. It is a particularly good host to certain *X. americanum* populations.

171-6 -- (*V. rufotomentosa* X *V. vinifera*). This stock is difficult to propagate. It performs well against specific nematode populations and poorly against others. No reason to field test this *V. vinifera*-containing stock in the San Joaquin Valley.

COUDERC 3309 -- (*V. riparia* X *V. rupestris* by Couderc in 1881). In 1938 Jacob of University of California wrote, "This is a good old friend but it is time to say goodbye." This statement came before we knew much about nematodes. There is no reason to use this stock anywhere that nematodes commonly occur. It is highly susceptible to most nematode species. Within the first 2 years of planting it tolerates their presence but for the long term it is too risky.

99 RICHTER -- (*V. berlandieri* X *V. rupestris* by Richter in 1889). This stock is a good host for almost all nematode species except citrus nematode. There is no reason to test this stock in warmer soils.

MALEGUE 44-53 -- (*V. cordifolia* X *V. rupestris* by Malegue). There are at least five references from France and Germany claiming this stock has resistance to root knot nematodes. We found it quite susceptible to each of five root knot nematode populations we screened against it. No reason to field test this stock in warm soils.

M.V. MCKENRY NEMATOLOGIST U.C. RIVERSIDE