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Grape Rootstocks Show Promise in North Coast

By Mark S. Arcamonte
Editor

According to some veteran pest control advisors and a Napa Valley winegrape grower in whose vineyard Type B phylloxera was first discovered in 1983, there are three important things for the industry to focus on when battling the pest: Research, research research.

Tucked off the side of picturesque St. Helena Highway, about 1.5 miles east of Rutherford, Calif. lies Baritelle Vineyard, where approximately 63 acres of cabernet sauvignon flourish in a pastoral, seemingly idyllic area of the Napa Valley.

In 1983, while cruising along in its second generation, Baritelle Vineyards came upon a vineyard threat that was so huge and so immediate it jarred the entire industry. That widely-documented emergency was a new strain of phylloxera that attacks and kills most rootstocks with *vinifera* parentage, such as AXR No. 1.

The discovery was a very unfortunate one for many North Coast winegrape growers, and for much more than just the obvious phylloxera-related reasons.

"This vineyard was where the phylloxera problem was first identified in the Napa Valley," said John Baritelle, owner of Baritelle Vineyards. "The pest had adapted itself to the AXR rootstock over time, and AXR was the rootstock of choice in the early 1980s."

In response to the emergency, University of California researchers entered the Napa Valley and planted a variety of different rootstocks to test for resistance to the new phylloxera. Among the survivors were St. George,

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Non-shedding bark of 039-16 rootstock puts bite on N. Coast 'todes.

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5-C and 039-16 rootstocks.

About seven acres of Baritelle Vineyard's 63 acres of winegrapes were devoted solely to rootstock trials begun in 1986. The trials quickly flushed out other dangers lurking beneath the surface, such as Xiphinema index, also known as one kind of the dagger nematode, which vectors grapevine fanleaf virus, said Mike McKenry, a renowned nematologist from UC Riverside who is conducting research at the UC Kearney Ag Center near Parlier, Calif.

"Napa Valley growers have more of a problem with nematodes than they think they do, and their problem is with Xiphinema index. So when you find protection from phylloxera, you also need to find protection from Xiphinema index," said McKenry.

"039-16 has a great resistance to Xiphinema index. For that nematode, 039-16 is 2/100ths of the host of own-rooted grape. Freedom rootstock is also 2/100ths of the host of own-rooted grape, and that's as good as it gets," said McKenry. "For 5-C the number is 9/100ths."

"All you need is one nematode with the [fanleaf] virus inside it, and one feeding, and your plant has the virus. One advantage of 039-16 is that it appears the virus damage is slowed in development, compared to when they're on their own root," McKenry added.

One disadvantage of 039-16, said McKenry, is it's not resistant to endoparasitic nematodes such as root knot nematode and root lesion nematode. However, 5-C has protection against endoparasites, especially root knot nematode, but it is only mediocre against root lesion, he said.

"Of the three [varieties] that we tested, there are those who prefer the 5-C, and those who prefer the 039-16. But they're both very good and make very good wine. Nobody seems to prefer the St. George," said Baritelle.

According to McKenry, St. George is about as good a host for Xiphinema index, root knot and root lesion nematodes as can be found. "It seems to have some degree of phylloxera tolerance, but the nematodes do very well on it. It's a fantastic host for [nematodes], but it's a very hardy rootstock."

Though Baritelle is very firm in his belief that growers should continue working with University of California scientist in screening chemicals to control pests such as phylloxera and nematodes, he is just as firm about the need for growers to continue working with geneticists to breed plants that can tolerate such pests.

Even though 039-16 has *vinifera* in its parentage, it is still one hopeful-looking rootstock that Baritelle is impressed with. Developed in 1948 by Harold Olmo, a man who spent his career working on it, the UC's VR039-16 rootstock has only been released to growers since 1988.

Bob DeMasters, a pest control advisor with Growers Ag Service, who works out of the company's Geyserville office, offered sage advice for North Coast growers who are faced with replanting their winegrapes:

"I would suggest looking at several different rootstocks, rather than selecting one rootstock like we did with AXR. And when you select a site, one of the first things you want to consider is phylloxera resistance, and then nematode tolerance, and then soil type."

'Napa Valley growers have more of a problem with nematodes than they think they do, and their problem is with Xiphinema index.' **—Mike McKenry, *UC Riverside Nematologist***

DeMasters said his 19 years of PCA experience, much of it spent working in Sonoma, Napa, Lake and Mendocino counties, has led him to believe that growers need to look at different rootstocks and a different means of keeping the populations of phylloxera and nematodes under control. "We're never going to eradicate phylloxera and nematodes, we've seen that. So we need to look at rootstocks that build resistance to these."

However, DeMasters pointed out that one of the problems with building a trait in a rootstock is that at the same time you also take something away from it. "So the new rootstocks that are phylloxera resistant and not nematode resistant," he said.

Hal Carlson, a PCA with AgroTech Supply, also located in Geyserville, said his 20 years of field experience has led him to pay close attention to the results that Baritelle is having with 039-16.

"I lean very hard to 039-16 because of what John Baritelle has been able to do. His variety is cabernet, so I don't know what would happen with a white grape variety, but with cabernet where you have flat ground and a lot of water, it's working for John," said Carlson.

Carlson said assisting newly planted vines with a tailored nutritional program also helps them thrive. He suggests newly planted vines 1 to 3 years old should, regardless of where they're planted, have phosphorous and potassium put on, and to a lesser extent nitrogen, at about 30 percent of the amount of phosphorous that was applied.

"People haven't typically put on much phosphorous, and put it on in spots, but my mind has changed and I say to put it on everywhere," he said. "And from that point you really need to take the samples and tailor it to whatever area you're in.

"If you use liquid fertilizers it's much easier to tailor your nutrients to your specific site. And everything that is being replanted now is almost without exception being put in with drip systems, so it becomes a very easy application method," said Carlson.

Baritelle Vineyards, site in Napa Valley where Phylloxera Type B was first found in 1983.

Though Baritelle makes very strong qualifications for his praise of 039-16, he says that he has had encouraging early results from the acreage he planted in 1989.

"There is no universal rootstock. Not only just in grapes, but peaches, citrus, almonds, walnuts, essentially all of your commercial perennial crops. These all require different genetic material for different situations," he said. "Soil type and climate affect the kinds of nematodes you've got, and therefore there's no universal rootstock."

McKenry said the protection that's offered by 039-16 may be too narrow for growers from Lodi and the Central Coast where endoparasites can also be a problem, but it may work for people on the North Coast. ❐

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Joint Venture Creates Wholesale Giant

A letter of intent has been signed to create a joint venture between Farmland Industries Inc. and Wilbur-Ellis Co. that will result in one of the largest wholesale distribution companies for crop protection products in the United States.

Stan Riemann, vice president of crop production, and Brayton Wilbur Jr., president and CEO of Wilbur-Ellis, said the joint-venture company will be named WilFarm LLC.

WilFarm will combine more than 50 Farmland and Wilbur-Ellis wholesale distribution locations in more than 20 states throughout the Central United States. The organization will provide wholesale distribution of row crop and cereal grain protection products to independent and cooperative retailers throughout the central areas of the country.

Keith G. Boyer, vice president and general manager of the Brayton Division of Wilbur-Ellis Co., will be named president and CEO of WilFarm. Steven J. Dietze, director of ag chemical operations for Farmland Industries, will serve as vice president and COO. The joint-venture will be owned equally and administered by a board of managers comprised of three members from each of the parent companies.

Riemann and Wilbur emphasized that the new company will focus specifically on providing local independent and cooperative agricultural chemical and fertilizer retailers with wholesale distribution of crop protection chemicals, specialty and private label products, and dealer support programs and services.

Each parent company will bring unique strengths to the joint-venture, including proprietary products, innovative support programs to assist retailers with state and federal regulatory requirements, and merchandising and marketing programs. Among those programs are "Big League Manager," "Spring Training Camp," "Ag 21," and "Crop Management Specialist," as well as a number of other popular agronomic programs.

Management offices for the joint-venture will remain in their present locations in Kansas City, Mo., and W. Burlington, Iowa, for the immediate future.

In addition to the wholesale distribution of crop protection products, WilFarm will introduce branded private-label products beginning in 1995. Those products will include private-label seed and grain protection products, specialty products, surfactants and additives, and post- patent products including atrazine and phenoxies.

Farmland Industries Inc. is one of the nation's largest agricultural cooperatives, owned by about 1,500 farmer-cooperative associations, which in turn are owned by about 500,000 farmers across the heartland of the United States. ❐