

Wine and Table Grape Varieties for New England

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In climates outside the range of typical grape growing regions of the world, grape growers are faced with challenges due to a range of climate related factors. Disease pressure may be more severe, and cold temperatures experienced either in mid-winter or just after bud break may result in catastrophic crop losses. New varieties are being developed at Cornell University with a number of goals in mind. Cold hardiness and disease resistance plus excellence in wine and table grape quality are of greatest importance. In this presentation, the role played by Cornell's new grape variety releases in expanding the spectrum of options available to growers will be reviewed. Four new varieties have been named at Cornell's New York State Agricultural Experiment Station since 2003. These and other breeding program varieties and selections are reviewed here.

White Wine Grapes:

'Valvin Muscat'TM - (formerly NY62.0122.01 - Muscat du Moulin x Muscat Ottonel) produces an excellent, high quality muscat wine, without bitterness, that may be made into a dessert wine or used in blending. Own-rooted vines are small (1.4 lb./vine in Geneva), and therefore grafting is recommended. Though grafting improves vine size, planting at somewhat closer than normal spacing (approx. six feet between vines within rows) may also improve vineyard productivity. The fruit is highly flavored, very juicy, and ripens mid-season. Released in 2006 and a royalty is charged on vine sales.

Spring 2004 % live nodes following a very cold winter: 28%

Trunks: Moderately hardy. Some trunks were damaged in 2004.

'Traminette' (Joannes-Seyve 23-416 x 'Gewürztraminer') – Gaining in popularity throughout the eastern United States, 'Traminette' is a late mid-season white wine grape, which produces wine with pronounced varietal character likened to one of its parents, 'Gewürztraminer'. It is distinguished by its superior wine quality combined with good productivity, partial resistance to several fungal diseases, and cold hardiness superior to its acclaimed parent, 'Gewürztraminer'. The balance between sugar, acidity and pH is excellent. Released in 1996 as a public domain variety for domestic use only.

NY76.0844.24 - ('Traminette' x Ravat 34) makes a top ranked floral, muscat wine. Own rooted vines have been highly productive and highly vigorous in limited testing in Geneva. Clusters are large and loose. Leaf phylloxera have been an occasional problem. Maturity is mid-season, ripening in mid-late September in Geneva.

Spring 2004 % live nodes: 81%

Trunks: Very hardy.

NY81.0315.17 - ('Cayuga White' x 'White Riesling') produces a floral and sometimes spicy light muscat wine. Highly rated for wine quality for several years. Own-rooted vines are small; therefore grafted vines were planted and added to our trials in 1999. Botrytis rot has been

negligible and winter primary bud hardiness ranks better than Cayuga, and with many French-American hybrids.

Red Wine Grapes:

‘Corot noir’TM - (pronounced “kor-OH nwahr”; formerly NY70.0809.10 - SV 18-307 x ‘Steuben’) A late-season red wine grape, suitable for either blending or the production of varietal wines. The wine has a deep red color and attractive cherry and berry fruit aromas. A distinct improvement in the red wine varietal options available to cold climate grape growers, wines are free of the hybrid aromas typical of many other red hybrid grapes. The vine is vigorous and very productive at Geneva. Some cluster thinning is usually required to avoid overcropping. Vines are healthy with good powdery mildew and Botrytis rot resistance. Released in 2006 and a royalty is charged on vine sales.

Spring 2004 % live nodes: 75%

Trunks: Moderately hardy. Among 13 vines, 8 had no damage, and 5 were either killed to the ground or had crown gall.

‘Noiret’TM - (pronounced “nwahr-AY”; formerly NY73.0136.17 - [(NY33277 x Chancellor) x Steuben]) The distinctive red wine is richly colored and has notes of green and black pepper along with raspberry, blackberry, and some mint aromas. A major distinguishing characteristic of this selection is the fine tannin structure. This combined with the relative freedom from hybrid aromas strongly distinguishes this selection from other red hybrid grapes. Vines have generally been highly vigorous and productive in the Finger Lakes of New York, though older vines occasionally show a slow decline in vigor that may be indicative of a need for grafting. The leaves show moderate resistance to powdery mildew, but both fruit and leaves require a regular spray program to control downy mildew. Fruit maturity is mid- to late-season, approx. Oct. 1 in Geneva. Released in 2006 and a royalty is charged on vine sales.

Spring 2004 % live nodes: ~53% (very little fruit production)

Trunks: Expect some damage after cold winters. All 14 vines at Geneva required trunk renewal in 2004. If grafted, the graft union must be protected by hilling up in the fall.

‘GR 7’ - (“Geneva Red 7”) - (Buffalo x Baco noir) Vines are highly vigorous, highly productive and winter hardy, with moderate resistance to diseases. ‘GR 7’ makes dark red wines with a classical hybrid aroma. It has better tannin structure than ‘Baco noir’ and ‘De Chaunac’, yet it still has a short finish. Use hot pressing, short skin contact time or some carbonic maceration. It has a place in traditional red hybrid blended wines, and has been used for a number of years in commercial wine production. Released in 2003.

Spring 2004 % live nodes: 93%

Trunks: very hardy

Future plans: - what’s on the “drawing board”?

Disease Resistance Breeding: A large portion of our program focuses on breeding highly disease resistant varieties selected under “no-spray” conditions. One selection with potential for production under no-spray or minimal spray conditions is described below:

NY95.0301.01 – Wine grape with high disease resistance and potential to produce red wines of good quality. Most years at Geneva, NY, fruit and foliage are free of downy and powdery

mildew, and only a low level of black rot appears under fungicide-free conditions. In 2009, under ideal climatic conditions for downy mildew development, moderate foliar symptom appeared in September, but not prior to that. The vine is moderately productive (>13 lbs. fruit/vine) and winter hardy (estimated temperature of 50% primary bud kill in mid-winter is -14 F). Wine is very drinkable and enjoyable, with clean light aroma, nice mouth feel, good structure, and blueberry fruit character. The color is dark red and the wine has little hybrid character. It has been well-received by taste panels.

Selected Seedless Varieties for the Northeast:

Marquis, a cross of Athens x Emerald Seedless released in 1996, is a white seedless grape from Geneva, with excellent, mild American flavor. The berries are large, often 3.5 to 5.0 grams/berry, with juicy, melting texture. Clusters are large and attractive, while the vines are moderately hardy, and very productive. Ripening in New York is between 15 and 30 September. Diseases must be controlled due to powdery mildew and black rot susceptibility. The vine is sensitive to gibberellic acid use, which is therefore not recommended. Well-timed cluster thinning and cane girdling can increase berry size and improve cluster compactness. Vines are moderately hardy, medium in vigor and productive.

Himrod, produced from a cross between Ontario and Thompson Seedless, is the most successful table grape released from the Cornell University grape breeding program (1952). It produces large bunches of white seedless grapes with excellent, honey-like flavor and melting, juicy texture. The clusters are loosely filled, but cane girdling, gibberellic acid treatments, or cluster thinning may be used to increase cluster compactness and improve berry size. Despite these cultural defects, Himrod is presently the most commercially important of the seedless grapes grown in New York (cluster weight = 0.36 lb., berry weight = 2.1 g).

Einset Seedless (Plant patent 6160) is a winter-hardy, red seedless grape with a unique, strawberry-like flavor. The medium sized clusters produce bright red, ovoid berries that have good storage potential until the end of November. The skin is slightly tough and adheres to the tender flesh. Cultural problems include susceptibility to fungal diseases and a seed remnant that is occasionally noticeable. Along with Vanessa, Einset Seedless probably has the most commercial promise of the red seedless varieties that can be grown successfully in New York (cluster weight = 0.32 lb., berry weight = 2.3 g).

Vanessa was developed by the Horticultural Research Institute of Ontario, Canada, and is a red dessert grape of excellent quality. The vine is moderately vigorous and among the hardiest of seedless grapes. Grafting may be desirable on many sites to increase vine size (however, vines grafted on Teleki 5C at trials in Fredonia, New York have shown poor fruit set with very small berries). The seed remnant is usually large and soft; when noticeable, it is sometimes a cause for limited marketability. Berries are medium in size on medium, well-filled clusters. Storage potential is good. The flavor is mild and fruity, and berry texture is firm to crisp. The fruit quality is among the best of the red seedless types.

Canadice is more winter hardy than most seedless grapes, although trunk injury has occurred on some sites. It produces medium clusters with small red berries that are similar to Delaware in

flavor and appearance. With cordon training systems and careful management, Canadice clusters may average 0.5 lb., and the vines can be extremely productive. Fruit rot is a problem in wet years because the clusters are excessively compact (cluster weight = 0.50 lb., berry weight = 1.6 grams).

Mars (Plant patent 5680), a release from the University of Arkansas, is a vigorous, blue seedless grape. The flavor is mildly labrusca, similar to Campbell's Early, and the berries are slipskin. Clusters are medium-sized, cylindrical, and well filled. Hardiness has been good at Geneva, New York. High vigor; has the least susceptibility to common grape diseases among the Arkansas varieties, but still requires fungicide applications for disease control; resistant to fruit cracking; occasional seed traces found in some berries in some years. Mars has been recommended in Arkansas as a home garden grape with limited potential for commercial marketing (cluster weight = 0.40 lb., berry weight = 3 grams in Arkansas)

Jupiter (Plant patent 13,309) - This early maturing blue variety has large, firm, non-slipskin berries on medium sized clusters. Fruit has a distinct muscat flavor. It's in very early stages of testing at Cornell, so hardiness is not yet determined. In Arkansas, it is rated as hardier than Einset Seedless, Himrod, and Marquis, but not as hardy as Mars and Reliance. Medium vigor; resistant to fruit cracking; moderate resistance to common fungal diseases but does require fungicide sprays for successful production; small, soft seed traces observed occasionally but not noticeable due to berry texture. (cluster weight = 0.40 lb., berry weight = 4 to 5 grams in Arkansas)

Testing Cornell breeding program selections: As soon as the most elite selections in the breeding program are identified, they are propagated for testing beyond our Geneva campus. We typically offer these first to University and Experiment Station cooperators, and then to grower cooperators. Vines are distributed for test purposes prior to release via two commercial nurseries: Double A Vineyards (Fredonia, NY; <<http://www.rakgrape.com/>>) and Grafted Grapevine Nursery (Clifton Springs, NY; <<http://www.graftedgrapevines.com/>>).

For more information:

For current information about the Grape Breeding program at Geneva:

<<http://www.nysaes.cornell.edu/hort/faculty/reisch/grapeinfo.html>> and

<<http://www.nysaes.cornell.edu/hort/faculty/reisch/cultivars.html>>

Complete bulletins describing all Cornell grape variety releases are available on the internet, or as Adobe Acrobat PDF files, at the above web sites. In addition, general reviews of options available among grape varieties are found at these three web sites:

<<http://www.nysaes.cornell.edu/hort/faculty/reisch/bulletin/wine/>>

<<http://www.nysaes.cornell.edu/hort/faculty/reisch/bulletin/table/>>

<<http://www.nysaes.cornell.edu/hort/faculty/reisch/winehandout.html>>