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'Reliance' Grape

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'Reliance' seedless table grape has been the most successful release to date from the University of Arkansas grape breeding program. Although mostly utilized commercially in small vineyards, it has found its way into many local markets and home gardens and is best known for its exceptional sweetness and flavor. The story of how 'Reliance' came to be released, its success as one of the first proprietary eastern grape cultivars, and its widespread acceptance in the eastern U.S. is noteworthy. 'Reliance' resulted from a cross of 'Ontario' x 'Suffolk Red', two New York-developed cultivars (4). The source of seedlessness of 'Reliance' - transferred through its male parent 'Suffolk Red' is 'Black Monukka', a *Vitis vinifera* L. seedless cultivar. Also in the background of 'Reliance' is a mixture of cultivars including 'Concord', 'Iona', 'Lucile', 'Fredonia' and 'Diamond'. The cross was made in 1964, and the seedling vine was selected in 1967 by Dr. James N. Moore during the first year of selection of the Arkansas program. It was designated and tested as Ark. 1163.

Selection Ark. 1163 was noted in Dr. Moore's selection ratings and notes taken in the late 1960s as "very high quality, good vigor and health," along with the notation "thin skin, cracks badly." The notation of "cracks badly" was a major limitation of Ark. 1163, and one that early in its evaluation left it on the back burner of promise as a release from the program. This trait was variable in expression, being most evident in years when summer rains fell as the berries were nearing full color development. However, the continued high-quality fruit observations kept Ark. 1163 alive in the program. Interest in testing selections from the Arkansas program developed in the mid 1970s, and Dr. Moore sent Ark. 1163 to two key testing locations. The evaluation of Ark. 1163 in Sturgeon Bay, Wis., by Franklin Gilbert was pivotal in determining its extremely high winter hardiness level, where it was observed to produce reliable crops even following lows down to -34° C. Cooperative testing with Garth Cahoon at Wooster, Ohio, resulted in a substantiation of its exceptional hardiness level along with additional observations of its exceptional fruit quality. And, testing at these locations indicated a lower tendency toward fruit cracking than had been observed on Ark. 1163 in Arkansas.

Given the exceptional performance of Ark. 1163 at these locations, and the high level of interest in its release by these and other cooperators, Dr. Moore released this selection as 'Reliance' in 1983. In its release notice, 'Reliance' was not recommended for Arkansas due to fruit cracking limitations, but rather for the midwestern and northeastern U.S. due to its excellent vine hardiness. The name 'Reliance' was chosen due to its hardiness, which was a departure from the theme of naming Arkansas table grapes for planets, begun with 'Venus' in 1977 (6), followed by 'Mars' (5), 'Saturn' (7), 'Jupiter' (1), and 'Neptune' (2).

'Reliance' has medium clusters, averaging 300 g, with berry weight averaging 2.7 g. Berries are fully seedless, with no seed trace found in this stenospermocarpic berry. The fruit is pink to red when fully mature and 'Reliance' can attain a high soluble solids level, up to 25° Brix. Thus it often has been harvested when berries were not fully colored, since green berries often contain 18 to 20° Brix sweetness levels,

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which render them edible even though they are not fully mature. Development of full color of fruit has been a limitation in some years, especially with heavy crops, and has been enhanced by fruit thinning (3). The flavor of 'Reliance' is almost universally judged to be exceptional, with a light *V. labrusca* L. flavor profile. Based on this wide acceptance of the flavor of 'Reliance', Dr. Moore often referred to 'Reliance' as a "Will Rogers" grape, in that he never met anyone who did not like the flavor and quality of 'Reliance'. This parallel is based on the famous quote by American humorist Will Rogers, who once stated, "I never met a man I didn't like."

Vines of 'Reliance' are medium in vigor, very winter hardy, and have a typical *V. labrusca,* mostly procumbent growth habit. Vines produce well on their own roots. 'Reliance' is moderately resistant to black rot [*Guignardia bidwell* (Ellis) Viala & Ravaz]; anthracnose [*Elsinoë ampelina* (de Bary) Shear]; powdery mildew [*Uncinulata necator* (Schw.) Burr.]; and downy mildew [*Plasmopara viticola* (Berk. & Curt.) Berl. & de Toni]. However, a fungicide program is needed to reliably produce disease-free fruit in the eastern U.S.

Proprietary fruit cultivars released from public breeding programs were quite rare in the eastern U.S. in the early 1980s. However, because the greatest potential for 'Reliance' to be grown successfully existed outside Arkansas, Dr. Moore felt that patenting 'Reliance' was appropriate to gain some financial return from this cultivar, that could bolster the largely Arkansas taxpayer-supported breeding program. 'Reliance' was granted plant patent #5,174 on 10 Jan. 1984.

The release of 'Reliance', with its use recommended outside Arkansas, coupled with how to license propagating nurseries for this new cultivar posed a new challenge. However, after a few years, several nurseries had become interested in this high-quality cultivar and subsequent propagation and resulting sales became rather substantial, resulting in over 400,000 vines reported propagated through 2001. The royalty on 'Reliance' was 25 cents per vine, and by the time the patent expired, between $100,000 and $125,000 in royalties had been collected; 'Reliance' was being propagated by 26 nurseries in the U.S. and one in Canada, with these nurseries located from the northeast to Pacific Northwest. This is a true success story of what was perceived to be a rather limited-use genotype evolving into a substantial program supporter at a time when patenting of public-released varieties was rare. This "first step" in patenting led to the much larger proprietary fruit cultivar development program in place at the University of Arkansas today.

The patent on 'Reliance' expired in January 2001, and it remains a popular eastern U.S. table grape. It is anticipated it will continue to be planted and enjoyed by eastern viticulturists for many years.

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Ethylene - Peach Firmness

The melting and non-melting cultivars showed increases in ethylene production and drops in flesh firmness where as the stony hard cultivar, 'Yumyeong,' produced little or no ethylene and remained firm during storage. Stony hard is a mutant in ethlyene production and this may be used as a genetic source for improving keeping quality of dessert peaches. From Haji et al. 2001. J. Jap. Soc, Hort. Sci. 70(4)458-459.