

New USDA Table Grape Varieties: Autumn King and Scarlet Royal

THE AGRICULTURAL RESEARCH SERVICE, United States Department of Agriculture, announced the release for propagation of two new *Vitis vinifera* L. table grape cultivars on July 13, 2005: Autumn King and Scarlet Royal.

Autumn King (formerly tested as C10) is a white seedless grape that ripens late and has very large berries with a sweet neutral flavor. It is the result of a cross A61-20 X B99-131 made in 1993. A61-20 and B99-131 are complex hybrids whose parents include Agadia, Blackrose, Calmeria, Cardinal, Divizich Early, Italia, Maraville, Muscat Hamburg, Muscat of Alexandria, Perlette, Sultanina, and Tafafihi Ahmur. The original vine was planted in 1994 in cooperation with California State University, Fresno, and selected in 1996 by David W. Ramming and Ronald Tarailo. Autumn King has been tested in the San Joaquin Valley of California.

Autumn King is a late-season variety that ripens about eight weeks after Thompson Seedless, about the third week of October in Fresno. By this time it has reached 18.6 % soluble solids and 0.31 mg acid / 100 ml juice. The clusters are medium in size (0.5 Kg or 1.1 pounds) and length. They are conical to cylindrical and are medium to well-filled. The natural berry is cylindrical to ovoid in shape and averages 9.8 grams. Berries from girdled vines treated with 2.5 to 5 ppm gibberellic acid at bloom (GA) averaged 11.5 grams, 25 mm in diameter, and 35 mm in length. Autumn King is sensitive to GA applied at berry set which has reduced fruitfulness the following year making production below commercial levels. Therefore GA application during berry set is not recommended. The flavor is sweet and neutral. The skin of Autumn King is medium in thickness and adheres to the flesh. The berries contain 2 to 3 aborted seeds, which are small and not noticeable when eaten. The flesh is meaty in texture and medium in firmness.

Autumn King blooms about 7 days after Thompson Seedless and is medium in vigor. Production has averaged 17 Kg (38 pounds) per vine when head trained and pruned to 5-6 canes and grown on a "Y" trellis. In cold storage trials the firmness remained good even after 2 months. No surface or internal browning was noticed throughout the cold storage period. Postharvest berry attachment was good and much less shatter occurred than in Thompson Seedless.

Scarlet Royal is a new red seedless table grape cultivar, formerly tested as B1. This red seedless grape ripens in the mid-season and has large, sweet, firm berries with a neutral flavor. Scarlet Royal resulted from the cross C33-30 X C51-63 made in 1992. Embryos were recovered and plants produced from C33-30, a seedless selection, by using embryo rescue procedures. C33-30 and C51-63 are complex hybrids whose parents include Blackrose, Calmeria, Cardinal, Crimson Seedless, Divizich Early, Italia, Maraville, Muscat of Alexandria, Sultanina, and Tafafihi Ahmur. The original vine was planted in 1993

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Autumn King

Scarlet Royal



planted here. However, some that are hard to fully ripen in France because they tend toward low sugars and high acid will be interesting to plant in our warmer viticultural areas where the opposite problems (high sugar and low acid) are more common.

More specifically, Muscardin, Terret Noir, Cinsault, and Vaccarèse are possible sources for floral character, freshness and acid to blend with wines from varieties that tend toward high alcohol levels, such as Grenache Noir, Syrah, and Petite Sirah**. Bourboulenc, and Picardin could do the same for Viognier**, Roussanne, Grenache Blanc, and other white Rhône varieties that tend toward high sugars. Clairette may have some possibilities for making sweet wines or good fresh, dry wines in very cool growing areas.

Other authors have described these blending possibilities, including the noted French ampelographer, Galet, who says, "For the wines of the Midi made from Carignan and Grenache, the use of a percentage of Cinsault allows one to obtain products more simple and harmonious by tempering the alcoholic excesses of Grenache [Noir]" and "Separate vinification [of Muscardin] in Châteauneuf-du-Pape gave wines distinguished by their often floral bouquet and a stunning sappy freshness, making the variety a particularly interesting element in blending."

Jancis Robinson writes about the "useful" high acidity in Picardin. Bourboulenc is a late budder, according to Viala and Vermorel in *Ampelographie*, making it a good variety to plant in areas with spring frost problems.

Other characteristics of these varieties will hopefully appear after we gain experience by growing them under local conditions. Most importantly, it is desirable to continue importing and testing varieties so we can discover new possibilities for our young industry and stop the marketers from dictating the same-old, same-old varieties and styles forever and ever. 🍇

* Bourboulenc, Cinsault, Clairette, Counoise, Grenache Blanc, Grenache Noir, Mourvedre, Muscardin, Picardin, Picpoul Blanc, Roussanne, Syrah, Terret Noir, Vaccarèse.

** Not a Châteauneuf-du-Pape grape, but a popular Rhône variety in California.

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in cooperation with California State University, Fresno, and selected in 1995 by David W. Ramming and Ronald Tarailo. Scarlet Royal has been tested in the San Joaquin Valley of California.

Scarlet Royal is a mid-season variety which ripens between Flame Seedless and Crimson seedless. Its fruit had reached 16.7 % soluble solids and a 22:1 sugar/acid ratio by July 20, 2004 with the application of 1 pint per acre Ethrel and pulling leaves. Scarlet Royal continues to mature on the vine and by August 15 had reached 22.0 % soluble solids and 0.55 mg acid / 100 ml juice without Ethrel. The clusters are large in size (0.8 Kg or 1.8 pounds) and length. They are conical in shape and are medium to well-filled. The natural berry is oval in shape and averages 5.8 grams. Berries from girdled vines treated with 2.5 ppm gibberellic acid (GA) at bloom and 20 ppm GA at berry set averaged 8.3 grams, 22 mm in diameter, and 33 mm in length. The flavor is sweet and neutral. The skin of Scarlet Royal is medium to thick and adheres to the flesh. The flesh texture is firm and meaty. The berries contain 3 to 4 aborted seeds, which are small and not noticeable when eaten. The fruit retained its firmness during two months of cold storage. The berry attachment to the pedicel is very good and very little postharvest shatter occurs. The rachis is tough with a woody peduncle.

Scarlet Royal blooms about 3 to 4 days after Ruby Seedless and is medium in vigor. Production has averaged 27 Kg (60 pounds) per vine when trained to quadrilateral cordons, pruned to 2 bud spurs and grown on a "Y" trellis. The 20 ppm GA size spray applied in 2003 reduced cluster counts in 2004 by 10 to 38%, leaving 48 to 64 clusters, which is still commercially acceptable.

Autumn King and Scarlet Royal were indexed for virus by Foundation Plant Services, University of California, Davis. All tests required to qualify for the California Grapevine Registration and Certification Program were negative. A U.S. Plant Patent application is pending for both varieties. Both varieties are exclusively licensed to the California Table Grape Commission, which will make them widely available through sublicensing agreements. Inquiries regarding availability of Autumn King and/or Scarlet Royal should be addressed to Ross Jones, ross@freshcaliforniagrapes.com, California Table Grape Commission, 392 W. Fallbrook, Suite 101, Fresno, CA 93711-6150 or David W. Ramming, dramming@fresno.ars.usda.gov, USDA, Agricultural Research Service, Crop Diseases, Pests and Genetics Research Unit, 9611 South Riverbend Avenue, Parlier, CA 93648. It is requested that appropriate recognition be made if this germplasm contributes to the development of a new breeding line or cultivar. 🍇