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## Cultural Practices for Scarlet Royal

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Scarlet Royal (US Plant Patent 16,229\*) is a mid-season red seedless table grape developed by David Ramming and Ronald Tarailo of the USDA-ARS in Parlier, California. The cultivar, formerly known as B1, was released in 2006 and resulted from the cross of two red seedless USDA selections C33-30 x C51-63. The parentage of Scarlet Royal includes Blackrose, Calmeria, Cardinal, Crimson Seedless, Divizich Early, Italia, Maraville, Muscat of Alexandria, Sultanina and Tafafihi Ahmur. The cultivar produces large (0.8 kg./1.8 lb.), conical-shaped clusters that are medium to well filled. Berries are oval in shape and its appearance is similar to Crimson Seedless. Natural Scarlet Royal berries weigh about 5-7 grams, though berry weight and size is slightly increased when fruit is treated with gibberellic acid. The flesh is firm and meaty and the skin is medium to thick. The flavor is described as sweet and neutral. Scarlet Royal ripens mid-to-late August, filling the harvest

window between Flame Seedless and Crimson Seedless.

### Site Selection and Planting

Scarlet Royal is moderately vigorous when planted on its own roots. Rootstock selection should be based on site-specific soil pest or soil chemistry problems. Common rootstock choices for Scarlet Royal have included Freedom and 1103-P, but rootstock effects on fruit yield, quality and vine performance have not yet been evaluated. It is likely that grafting to these and other rootstocks common for table grape production in the San Joaquin Valley will increase vine vigor.

### Training and Trellising Systems

Quadrilateral cordon training and spur pruning are suggested for Scarlet Royal vines. Depending on vine vigor and in-row spacing, 32-40 2-bud spurs should be retained during pruning. Quadrilateral cordon trained vines may be trellised to the standard California "T" or the open gable "Y" system.

## **Productivity and Crop Load Management**

Information on commercial production potential has yet to be established given its brief production history. However, experimental observation and data indicate that mature Scarlet Royal will yield 1100-1300 10 kg (22 lb.) boxes per acre for quadrilateral cordon, spur-pruned vines grown on a gable system. Cluster counts prior to bloom ranged from 50-70 per vine and crop load should be adjusted by thinning to about 40-45 well shaped clusters following berry set so as not to impede fruit growth. In addition to cluster thinning, it may be necessary in some years to thin berries due to their naturally large size.

## **Girdling and Gibberellic Acid**

Very limited information has been developed on cultural practices to reduce set and improve the size of Scarlet Royal grapes. Girdling at berry set to increase berry size is not recommended on Scarlet Royal vines as previous work has shown that girdling may cause significant sunburn damage to fruit and may increase astringency in the berry skins. Initial work on bloom time applications of gibberellic acid (GA) indicate that rates of 2-2.5 ppm applied at 40%-60% bloom may not be completely effective for loosening the cluster. When determining optimal rates and timing, it's best to observe untreated fruit during the first fruiting year and then begin with lower rates (2 ppm) and evaluate treatment effects before using higher rates. GA at the rate of 20 ppm applied at fruit set appears to be effective for increasing berry size. However, a 40 ppm rate has been shown to reduce return fruitfulness (the following year). In most cases the reduction may not be of economic importance due to the cultivar's highly productive nature. More work is needed to determine GA rates that will provide consistent effects on cluster thinning and increased berry size.

## **Color Development**

Scarlet Royal grapes color well when grown under a full canopy and do not appear to have the problems of other red seedless cultivars, like Crimson Seedless and Flame Seedless, if crop load is properly managed. Ethrel (ethephon) is generally not recommended, as treated fruit may develop an undesirable purple color in comparison to the deep crimson hue of untreated fruit. Observations indicate that minimal basal leaf removal and other common canopy management practices are sufficient to enhance coloration.

## **Canopy Management**

Shoot thinning should be performed on vines when shoot length reaches 8-10 inches. Shoot positioning should be performed on open gable or other divided canopy systems. Minor leaf pulling in the fruit zone is generally recommended to facilitate air flow and foliar spray penetration, and facilitate color development. Shoot trimming or hedging in the row middles just prior to harvest is typically performed to maintain canopy shape and reduce humidity within the fruiting region.

## **Special Problems and Considerations**

Scarlet Royal is susceptible to undesirable skin astringency, or bitter flavors if fruit is held too long on the vine and allowed to become over ripe (>23% soluble solids). Harvest must not be delayed. It is recommended that harvest begin when berries are well colored near the capstem and the fruit is sweet ( $\geq 17\%$  soluble solids) and well balanced and continue harvest until soluble solids reach 22% to ensure high quality, palatable fruit.

*\* Scarlet Royal is exclusively licensed to the California Table Grape Commission and inquiries regarding availability of Scarlet Royal should be addressed to the commission at 392 W. Fallbrook, Suite 101, Fresno, CA 93711-6150.*



Scarlet Royal grapes on 1.5 year-old vines. Arvin, California. Photo taken 7/24/2007.