

# Cultural Practices for Autumn King

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Autumn King (US Plant Patent 16,284\*) is a late-season white seedless table grape developed by David Ramming and Ronald Tarailo of the USDA-ARS in Parlier, California. The cultivar, formerly known as C10, was released in 2006 and resulted from the cross of USDA selections A61-20 x B99-131. The parentage of Autumn King is complex and includes Agadia, Blackrose, Calmeria, Cardinal, Divizich Early, Italia, Maraville, Muscat Hamburg, Muscat of Alexandria, Perlette, Sultanina and Tafafihi Ahmur. The cultivar produces medium-sized (0.5 kg./1.1 lb.), conical to cylindrical-shaped clusters that are medium to well filled. The natural berry size of Autumn King is quite large and without gibberellin or girdling, berry weight can average 8-9 grams or more. Berries are cylindrical to ovoid in shape, and have medium to firm flesh and skin. The berries contain 2-3 aborted seeds which are inconspicuous when eaten and the flavor is described as sweet and neutral. Autumn King ripens mid-September to late-October, or about eight weeks after Thompson Seedless, and the appeal of Autumn King will certainly rest on its large natural berry size and late harvest.

## **Site Selection and Planting**

Autumn King is moderate-to-highly 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 Autumn King 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**

Autumn King should be head-trained and cane-pruned for maximum productivity and fruit quality. Depending on vine vigor and trellis system, 5-8 canes that are 12 to 15 buds long are retained at pruning. Up to 4, 2-bud renewal spurs must be left to generate canes for the following year. Head trained, cane pruned Autumn King vines may be trellised to the standard California "T", but the open gable "Y" system is preferred.

## **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 Autumn King will yield 700-800 10 kg (22 lb.) boxes per acre for head-trained, cane-pruned vines grown on a gable system. Initial cluster counts during the spring ranged from 50-80 per vine and crop load may need to be adjusted by thinning to about 40 clusters following berry set so as not to impede fruit growth. Due to its moderate cluster length, cluster tipping is not normally necessary.

### **Girdling and Gibberellic Acid**

The natural berry size of Autumn King is very large ( $\approx$ 10 grams, 24 mm berry diameter, 29 mm berry length), possibly limiting the need for cultural inputs to increase berry size. The application of a girdle at berry set to increase berry size is not recommended, however a bloom-time girdle (70% bloom) may be necessary in areas where vines are extremely vigorous and poor berry set is observed. Gibberellic acid (GA) thinning sprays are generally not necessary due to the cultivars naturally loose architecture. Autumn King is extremely sensitive to applications of GA at berry set which have reduced return fruitfulness below acceptable levels and is not recommended at this time.

### **Canopy Management**

Canopy management practices, including shoot thinning, sterile shoot removal, leaf removal around the clusters and summer pruning, should be performed as with Thompson Seedless and Princess. It is important to remove leaves in direct contact with clusters following fruit set in order to reduce the potential of berry surface bruising. However, care must be taken to avoid excessive and/or direct sunlight exposure of clusters that results in yellowing of the berry surface. In general, fruit should be well shaded until just before harvest. The fruit of Autumn King is harvested very late, making it susceptible to heavy rains and frost and may necessitate the use of plastic vine covers in northern table grape production areas.

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

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Autumn King produces naturally large grapes with a sweet neutral flavor. Photo by Stephen Ausmus.