



Fantasy Seedless Production Practices

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Fantasy Seedless is a mid-season black seedless table grape developed by David Ramming and Ron Tarailo of the USDA Fruit Genetics and Breeding Research Unit, Fresno, CA. Fantasy Seedless, previously known as USDA selection #C23-92, resulted from a cross of USDA selections B36-27 x P64-18. The variety was released to the industry in 1989. There are approximately 1000 acres of Fantasy Seedless planted in California.

Fantasy seedless is one of the three black seedless table grape varieties grown commercially in California. The others are Black Seedless and Marroo Seedless. Black Seedless is a mid-season variety introduced to California from Chile in the 1980's. Marroo Seedless is a mid-season variety recently developed in Australia, and is available in California on a proprietary basis only. Both Black Seedless and Marroo Seedless are reportedly heavy producers (>750 boxes per acre), requiring intensive cultural practices (gibberellic acid, girdling, etc.) for commercial production. Fantasy Seedless is a moderate producer (<750 boxes per acre), requiring few inputs for commercial production. Fantasy Seedless has the largest berries among the three cultivars (berry fresh weight = 8 grams or more), and does not require gibberellic acid thinning or sizing sprays, or sizing girdles.

Fantasy Seedless berries are thin skinned, firm and have excellent flavor when fully mature.

The primary problems associated with the production of Fantasy Seedless are its excessive vigor, low bud fruitfulness, and high susceptibility to berry cracking and subsequent bunch rot.

Site Selection and Planting

Fantasy Seedless is highly vigorous when planted on its own roots. While the cultivar is adapted to a wide range of soil types and conditions, our observations suggest that sites of moderate vigor are preferable for planting compared to high vigor sites. Vines may become excessively vegetative when planted in deep, fertile soils. Extravagant nitrogen fertilization and irrigation should be avoided in order to reduce potential problems with excessive vigor. Vines should be spaced 8" (between vines) x 12" (between rows).

Insufficient information is currently available for the recommendation of rootstocks. Because of the high vigor of this variety, the use of low vigor rootstocks is preferable to the use of high vigor stocks.

Training and Trellising Systems

Fantasy Seedless must be cane pruned for adequate production. The standard system is a single cross-arm trellis utilizing 7-foot stakes and 42" to 48" wide cross-arms. The wider cross-arm should be utilized when high vigor is expected. Four or five wires are attached to each cross-arm; the middle wires are used to tie canes

and the outside wires provide support for foliage. The cross arm is usually oriented horizontally (flat), but may be offset 10 to 20° above horizontal on the north (east-west oriented rows) and east (north-south oriented rows) side of the vine row.

The buds of Fantasy Seedless require relatively high sunlight exposure to achieve adequate fruitfulness. Poor bud fruitfulness has been a problem on vigorous vines with dense, shaded canopies. The productivity of highly vigorous vines could likely be improved with the use of large, extensive trellis systems such as the "Y" trellis or the gable trellis. When properly managed these systems maximize the exposure of developing fruit wood to sunlight.

Pruning

Three or four canes may be retained on third leaf vines. Care must be taken not to over-crop the vines in their first year of production. Cluster number per vine should usually not exceed 18 in the first year of production.

Due to the low fruitfulness of highly vigorous vines, it is often necessary to retain up to eight canes to insure adequate productivity on mature Fantasy Seedless. Vines of moderate vigor are usually more fruitful than vigorous vines, and adequate productivity may be obtained by retaining only five or six canes.

Cluster Thinning and Tipping

Due to its moderate fruitfulness, cluster thinning is usually not required on Fantasy Seedless. Mature vines pruned to 6 or 7 canes normally bear 35 to 40 clusters. Vines with more than 50 clusters should be thinned after berry set. Although vine leaf area appears sufficient to mature large crops, fruit maturation rate is greatly retarded on vines carrying heavy crop

loads. Large crops reduce fruit coloration and extend the harvest period. The latter increases harvest costs and the potential likelihood of fruit losses due to berry cracking and bunch rot.

A minimal amount of cluster tipping and manual berry thinning is needed. An occasional large, heavily shouldered cluster should be tipped to 6 or 7 branches following fruit set. In some years a few clusters may set too many berries, resulting in tight bunches at harvest. Berries and/or shoulders can be removed from the compact regions of well-set clusters to reduce cluster tightness.

Girdling

Girdling at berry set (5-6 mm berry diameter) will result in a 10 to 15% increase in berry weight. However, berry set girdles delay fruit maturation and berry coloration. Berry set girdles therefore lengthen the period in which fruit remains on the vine prior to harvest, increasing its potential susceptibility to berry cracking and rot.

Girdling vines at color break (1 to 5% of the berries showing some color) advances fruit maturation and fruit coloration. Fruit from vines girdled at berry softening obtain sufficient color for harvest about one week ahead of ungirdled vines, and up to two weeks ahead of vines girdled at berry set. Girdling at color break also improves the uniformity of berry color. Color break girdles have no effect on berry size. The color break girdle should probably be considered for Fantasy Seedless (when vines are old enough).

Gibberellic Acid

Gibberellic acid is extremely phytotoxic to Fantasy Seedless. Vines treated 20 to 40 grams

of gibberellic acid per acre exhibit symptoms of foliar toxicity, berry and cluster abscission (bloom applications), and a significant reduction in the number of flower clusters the year following application.

Canopy Management

Canopy management practices which reduce humidity and improve light exposure within the canopy interior should be employed. Many growers remove the basal leaves surrounding fruit clusters after berry set. The removal of leaves on the canopy exterior at the height of the fruit zone to create a "canopy window" has also been used to improve the microclimate of cane pruned vines.

Fruit Maladies

Fantasy Seedless berries are highly susceptible to cracking. Berry cracking can occur during the initial stages of berry development (shortly after fruit set), or following berry softening. Berries

which crack prior to fruit softening usually dry rapidly, and pose little problem with regard to potential fruit rot. These berries often abscise from the cluster prior to harvest, or are easily removed by trimming at harvest.

Berries which crack during the latter stages of ripening pose significant problems. Extensive berry cracking during this period usually results in yield losses due to bunch rot. In cases where the rotten portion of a cluster can be removed by trimming, care must be taken to eliminate all rotten and cracked berries prior to packing. Clusters with cracked berries will leak during storage, resulting in further losses.

Significant fruit damage as a result of sunburn was observed on Fantasy Seedless in 1991. The susceptibility of Fantasy Seedless to sunburn appears similar to that of Thompson Seedless. Berry attachment to the cluster is moderate, and berry shatter at harvest has been reported as a problem in some vineyards.