'Fantasy Seedless': A New Black Seedless Grape

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'Fantasy Seedless' grape (*Vitis vinifera* L.) (Fig. 1) is a midseason, attractive, blue-black, referred to as black in the industry, seedless grape with naturally large berries. This grape was introduced in 1989 to fill the need for a black seedless cultivar for the fresh market. The California table grape industry has made dramatic strides in producing more seedless grapes. In 1982, 61.4% (31,300,000 boxes; box = 10 kg) of the grapes produced for the fresh market were seedless, compared to 80.0% (50,100,000 boxes) in 1992 (California Table Grape Commission, 1983, 1993). The development and release of 'Flame Seedless', a red grape (Weinberger and Harmon, 1974), in 1973 by the U.S. Dept. of Agriculture (USDA) played a significant role in this change. Since its inception in 1923 (Snyder, 1931, 1937), one of the objectives of the USDA grape breeding program in Fresno, Calif., has been to develop seedless grapes. However, since 1975, as a result of consumer demand, the development of seedless cultivars has become the most important objective. White seedless grapes (i.e., 'Perlette', 'Superior Seedless', and 'Thompson Seedless') are available most of the season. 'Flame Seedless' is available from May to October, ripening at various times in California's grape production districts. However, few black grapes are being produced. In 1992, most black grapes shipped were 'Ribier' (877,000 boxes) and 'Exotic' (661,000), both of which have seeds (California Table Grape Commission, 1993). A few black seedless grapes have been introduced, but they have not become major cultivars. Among these is 'Beauty Seedless' (174,000 boxes shipped in 1992), which has been planted principally in the Coachella Valley of southern California for the early market. Also, 'Black Monukka' has been grown for the fresh market, but it shatters badly and is not economical to produce. Other minor black seedless cultivars are 'Negrita' (5600 boxes) and 'Majestic' (97,000 boxes).

Origin

'Fantasy Seedless' is the result of four generations of hybridization at the USDA Fresno location, starting in 1926 (Fig. 2). The

source of seedlessness is from 'Sultanina' (synonym for 'Thompson Seedless') or 'Black Monukka', both of which were used as parents in the first generation of crossing. 'Fantasy Seedless' originated from intermating two siblings, one seeded and the other seedless. The cross was made in 1978; in 1979, 238 seedlings were planted in research plots in cooperation with California State Univ., Fresno (CSUF). Eight seedless seedlings were selected, of which seven had black fruit and one white fruit. 'Fantasy Seedless' was selected in 1981 and tested as C23-92.

Description

'Fantasy Seedless' vines are vigorous and moderately productive when cane-pruned. Seven to eight canes may be necessary on mature vines to provide commercial production. Spur-pruned vines are unproductive. Yields of 1000 to 1500 boxes/ha in commercial production have been achieved compared to an average of 1750 to 2250 boxes/ha for 'Ribier'. The yields per vine from the advanced test plot at CSUF varied by a factor of nearly two between years (Table 1). 'Fantasy Seedless' ripens in early August in Fresno, when it generally has reached 19% soluble solids and a >20 sugar : 1 acid ratio (Table 2). It matures slightly before 'Ribier' (Table 2).

The clusters are medium in size (weight = 0.5 kg; length = 24 cm) and are conical. The berries are well spaced, resulting in medium to loose clusters. The vigor of the vine can greatly affect cluster compactness and yield. High vigor reduces berry set, resulting in loose clusters and decreased yield. The berries of 'Fantasy Seedless' are large, averaging 6.0 to 7.0 g, 21.8 mm in diameter, 26.5 mm long, and

Fig. 1. 'Fantasy Seedless' grapes.

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Fig. 2. 'Fantasy Seedless' grape pedigree.

are mostly oval; 'Ribier' averages 6.3 g, 20.8 mm in diameter, 22.2 mm long. The berries can be enlarged by girdling, but full black pigmentation is more difficult to achieve. The berries are bluish black ($L^* = 28.89$, $a^* = +0.45$, $b^* = -0.28$, Chroma $C^* = 56$, hue angle $= 326.41$) compared to 'Ribier' ($L^* = 29.19$, $a^* = +0.49$, $b^* = -0.21$, Chroma $C^* = 54$, hue angle $= 317.56$), which is also bluish black as determined by a chromameter (model CR-200; Minolta, Osaka, Japan). The berries have a light white, waxy bloom. The flesh is pale green, translucent, meaty, medium in firmness, and does not separate from the skin. We consider the flavor to be good, with a sweet taste. The skin is medium to tender. The berries contain one to two aborted soft seeds, and the largest aborted seeds average 7 mg fresh weight compared to 4 mg for 'Thompson Seedless'.

Gibberellic acid should not be used on 'Fantasy Seedless' because it results in poor berry set, eliminates the crop for the following year, and causes elongated vegetative growth [similar to 2,4-dichlorophenoxyacetic acid (2,4-D) damage].

Availability

'Fantasy Seedless' was released as a public cultivar. There are no restrictions on its propa-

Table 1. Mean productivity characteristics of 'Fantasy Seedless' in U.S. Dept. of Agriculture plots, California State Univ., Fresno.^z

Year	Clusters/vine	Yield (kg/vine)	Cluster wt (g)
1990	30.7 ± 3.4 ^y	12.2 ± 1.38	394 ± 33
1991	30 ^x	10.5 ± 1.61	350 ± 54
1993	18.5 ± 2.1	6.5 ± 0.97	346 ± 19

^zPlanted 1988, pruned to seven to eight canes per vine.

^yMean of five vines ± SE.

^xThinned to 30 clusters per vine at berry set.

gation. Certified, virus-free plants or cuttings can be obtained from the Foundation Plant Material Service, Univ. of California, Davis, CA 95616.

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Table 2. Maturity characteristics of 'Fantasy Seedless' compared to 'Ribier' in 1987 at U.S. Dept. of Agriculture plots, California State Univ., Fresno.

Harvest date	SSC (%) ^z	Sugar : acid ratio
Fantasy Seedless		
20 July	17.0	17:1
28 July	19.2	19:1
3 Aug.	19.4	22:1
Ribier		
20 July	17.8	15:1
28 July	17.2	16:1
3 Aug.	19.4	20:1

^zSoluble solids concentration.

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