

Saturn: A new seedless grape

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'Saturn' is the fourth in a series of seed less table grape cultivars to be developed by the Arkansas Agricultural Experiment Station. The previous releases, 'Venus' (1977), 'Reliance' (1982) and 'Mars' (1984), are serving as the foundation for an emerging commercial table grape industry in Arkansas. Saturn is expected to contribute to further expansion of that industry.

Saturn originated from a cross of Dunstan 210 x NY 45791 (see pedigree in Fig. 1) made in 1971. The original plant was selected from a seedling field in 1974. It has since been tested as Ark. 1448 in plantings at the Fruit Substation, Clarksville, the Main Station, Fayetteville, the Strawberry Substation, Bald Knob, and at experiment stations in several other states.

Vines of Saturn are productive. In a two-year-old planting at the Strawberry Substation, only Mars, a very precocious cultivar, outyielded Saturn (Table I). Saturn has a tendency to overbear and cluster thinning may be required in some years to prevent over production and subsequent uneven and slow ripening.

The fruit of Saturn is bright red in color and medium oval in shape. The fruit is of the stenospermocarpic type of seedlessness and produces only small soft seed traces that are not noticeable when eaten. The flesh of the fruit adheres to the skins and is firm and crisp in texture. The fruit quality is typically vinifera in character. The flavor is sweet and fruity, with no strong flavor components. While Saturn is being introduced as a table grape, tests have shown that the fruit can be processed into an acceptable blending wine which is vinifera in character.

Fruit clusters of Saturn are medium in size and conical in shape, with an occasional shoulder. Clusters are compact and well filled. Berry size is large (ca. 3.0g); equal in size to Venus and larger than Reliance. Soluble solids content has averaged 20.1 %, slightly less than Reliance but higher than Venus and Mars (Table 1).

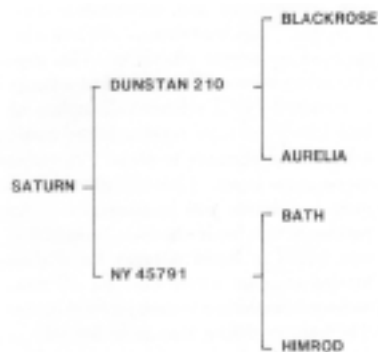


Fig. 1. Pedigree of 'Saturn'.

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Saturn ripens its fruit in midseason, about 1 week after Reliance and 2 weeks after Venus. The average ripe date at Clarksville is July 30. Fruit cracking has not been observed and berries adhere well to the pedicels and do not shatter from the cluster. In experimental tests, clusters of Saturn have been successfully stored for 12 weeks at 35F under SO₂ pads. This capability for long term storage and shelf life far exceeds that of Venus, Reliance, or Mars.

Vines of Saturn have medium vigor and have moderate resistance to the diseases black rot, powdery mildew and anthracnose. However, in some years vines have shown susceptibility to downy mildew. A disease control program sufficient for Venus has been satisfactory for Saturn. The northern limits of adaptation for Saturn have not been determined. Canes mature their wood early and enter winter in a well-hardened condition. Vines have withstood -10F for short periods of time with minimal injury.

The outstanding characteristics of Saturn are its large fruit size, its excellent fruit texture and flavor, its attractive fruit color and shape, its resistance to fruit cracking, and its adaptability to long-term cold storage of the fruit. Since the fruit ripens later than Venus, Reliance and Mars, the commercial harvest season for table grapes in Arkansas can be extended. The ability of the fruit to be processed into a good quality blending wine will provide an economic outlet for portions of the crop that cannot be marketed as fresh fruit.

A plant patent application has been submitted for Saturn. A list of nurseries licensed to propagate and sell Saturn can be obtained by writing to Dr. J. N. Moore, Department of Horticulture and Forestry, 316 Plant Science Building, University of Arkansas, Fayetteville, AR 72701.

Table 1. Production and fruit characteristics of seedless grape cultivars.

Cultivar	Yield ¹ (lb/A)	Cluster Weight ² (Grams)	Berry Weight ² (Grams)	Soluble Solids ³ (%)	Texture ⁴	Flavor ⁴
Saturn	8108 b	236	3.0	20.1	10.0	8.4
Venus	6741 b	317	3.2	16.7	6.9	7.8
Reliance	6352 b	280	2.3	22.3	6.2	10.0
Mars	13357 a	182	2.6	17.5	7.0	8.0
Canadice	—	187	1.8	20.5	7.5	8.7

¹1987 yields at Strawberry Substation. Plants established in 1985. Means followed by different letters are significantly different (P = 0.05).

²Means of 7 years, 1979-87, Fruit Substation.

³Means of 5 years, 1983-87, Fruit Substation.

⁴Means of 3 years, 1985-87, rating scale 1-10: 10 = best.