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BunchGrapes Information

Jupiter Seedless Table Grape

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Horticulture

Jupiter is the fifth in a series of seedless table grapes released from the University of Arkansas. The release of this new cultivar is intended to expand the cultivar options for eastern table grape growers, specifically providing a muscat-flavored seedless table grape.

Jupiter was selected in 1984 in a seedling vineyard at the University of Arkansas Fruit Substation, Clarksville. Jupiter was tested as selection Ark. 1985. The source of the muscat flavor of Jupiter was the *Vitis vinifera* L. cultivar Gold and the source of seedlessness was Glenora.

Kniffin and bilateral cordon training systems have been used in the testing of Jupiter with testing at Clarksville and Fayetteville. Vines in tests were trickle irrigated, had fungicide and insecticides applied according to a commercial pest control program, received annual preemergence and postemergence herbicide applications and were fertilized annually with nitrogen. Also, Jupiter was evaluated at West Lafayette, Ind. by Dr. Bruce Bordelon, Purdue University.

Fruit of Jupiter is reddish-blue at early maturity and becomes completely blue when fully mature. Berry shape is oval to slightly oblong. Berry weight of Jupiter averaged 5.5 g over 12 years of evaluation, larger than that of the comparison cultivars Venus, Reliance and Mars. No evaluations of gibberellic acid or girdling effects on berry weight of Jupiter have been conducted. Jupiter berries are non-slipskin and semi-crisp in texture. Small, soft seed traces have been observed in some berries of Jupiter in some years of evaluation, but were usually considered not noticeable due to size and softness and also the non-slipskin texture of the berries. No skin cracking has been observed on

Jupiter in any years of evaluation although severe fruit cracking was seen on Reliance and other crack-susceptible genotypes. Skin of Jupiter is of medium thickness and edible. Flavor of Jupiter is a mild muscat and has been consistently rated high, exceeded only by Reliance among the comparison cultivars. Soluble solids concentration of Jupiter averaged 19.8% over 12 years, higher than that of Venus and Mars but not as high as Reliance. No post-harvest or processing evaluations have been conducted on Jupiter.

Clusters of Jupiter are conical and occasionally have a shoulder. Cluster weight averaged 257.1 g over 12 years, similar to Venus but smaller than Reliance. Cluster fill ratings averaged 8.5 for Jupiter indicating well-filled clusters, although the clusters are not too tight to hinder handling or packaging. Shatter of berries from the clusters at maturity has not been observed and the clusters hung well on the vines after achieving full maturity.

Yields of Jupiter were equal to or exceeded those for Venus and Mars in the replicated trials. Crop ratings, taken over 12 years, were higher for Jupiter compared to Venus, Reliance and Mars indicating consistent cropping during the evaluation period. In only one of the 12 years of

evaluation was a crop rating of less than 7 (on a 10-point scale with 10=full crop) recorded for Jupiter, occurring in 1996 following a spring freeze that damaged emerging buds. Jupiter vines have not been evaluated for the effects of flower cluster thinning, and excessive cropping has not been observed on Jupiter in Arkansas. In Indiana, however, Jupiter was noted to have a tendency to overcrop if not cluster thinned.

Jupiter's average maturity date was 24 July at Clarksville, and is considered an early mid-season maturity cultivar. Jupiter ripened 5 days later than Venus and 5 and 12 days earlier than Reliance and Mars, respectively. Budbreak of Jupiter is similar to Venus and 4 days earlier than Mars.

Vines of Jupiter have medium vigor, similar to Venus in pruning weight and Reliance in vigor rating, but less vigorous than Mars. Growth habit of Jupiter is mostly procumbent although not as procumbent as Mars. Shoot positioning is more easily done on Jupiter than for Mars due to lower vigor and less tendril interference than that of Mars. Jupiter shoots mature early with wood maturity extending to the shoot tips in the fall. Minimum winter temperature at Clarksville from 1987 through 1998 was

-8 oF in December 1989, although for most winters the lowest temperature experienced was from 1 to 9 oF. Winter injury was not observed on Jupiter during this period. Jupiter fruited consistently during all years of evaluation and had a crop rating of 10 (indicating a full crop) for the 1990 season following exposure to -8 oF. Observations on Jupiter in West Lafayette, Ind. indicated that it was moderately hardy, similar in hardiness to Suffolk Red, more hardy than Einset Seedless, Canadice, Himrod, Marquis, Remaily Seedless, Saturn, Vanessa Seedless and Venus, and less hardy than Mars and Reliance. Some vine death occurred after exposure to -26 oF in the West Lafayette planting. A crop reduction on Jupiter occurred in Clarksville in 1996 due to a spring freeze (10 oF in March) near budbreak but freeze damage ratings to breaking buds were similar to Mars and less damage was noted than that for Venus.

Jupiter has shown moderate resistance to black rot, powdery mildew and anthracnose (in tests using a commercial fungicide program). Slight infections of powdery mildew were observed in 2 of the 12 years of evaluation. Neither black rot nor anthracnose were observed with the commercial fungicide program utilized in the test vineyard. No powdery mildew, black rot or phomopsis cane and leaf spot was observed in Indiana evaluations. Downy mildew has been observed on Jupiter, and susceptibility to downy mildew is similar to that of Venus. However, downy mildew has not been a concern with the utilization of a commercial fungicide program. Overall, plant health ratings for Jupiter were high during the 12 years of evaluation, exceeding that of Venus and near that of Mars and Reliance. Jupiter is moderately sensitive to phenoxy- herbicides but not as sensitive as Mars, Sunbelt or Remaily Seedless (determined in Indiana testing). Green June beetle feeding on ripening fruit of Jupiter has been observed several years and it is suspected that the aromatic muscat fruit coupled with ripening earlier than many cultivars contributes to this insect activity. Additionally, feeding by mammalian predators has been noted in Arkansas and Indiana.

The outstanding characteristics of Jupiter are its excellent flavor, high fruit quality, large berry, good productivity, resistance to fruit cracking, and good level of vine hardiness. Jupiter is recommended for trial where other eastern U.S. table grape cultivars are adapted. An application for a U.S. plant patent has been filed for Jupiter. A list of nurseries licensed to propagate and sell Jupiter can be obtained from:

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