

LIBERTY..

A Red Bunch Grape for Florida

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Bunch grape production in Florida is limited to the varieties resistant to Pierce's disease. To date four such varieties have been released by the University of Florida Agricultural Research Center at Leesburg: 'Lake Emerald' (white, 1954), 'Blue Lake' (blue, 1960), 'Norris' (blue, 1967), and 'Stover' (white, 1968). 'Liberty' is a new red-fruited cultivar with resistance to Pierce's disease and good fresh eating quality. The name 'Liberty' commemorates the 200th anniversary of our nation's founding.

ORIGIN

'Liberty' was one of 46 seedlings grown from a cross between 'W716' and 'Buffalo' made at the Agricultural Research Center, Leesburg, in 1961. It first fruited in 1965, was selected in 1966, and was grafted for further test in 1972. The female parent, 'W716', is a prolific blue cultivar from the cross of 'Fla 43-47' (open-pollinated selection of *Vitus smalliana* Bailey) with 'Golden Muscat'. 'Buffalo', the pollen parent, is a high quality blue cultivar developed at Geneva, New York, by crossing 'Herbert' with 'Watkins'. 'Liberty' was tested at the A.R.C., Leesburg, as selection D4-84.

CHARACTERISTICS

'Liberty' develops a medium-sized trunk and cane framework, with tendencies to recumbent lateral growth. Canes usually grow 6 to 15 feet (1.8 to 4.6 m) long, are brown to reddish brown, and have internodes of 3 to 4.5 inches (7 to 11 cm). Leaves are numerous, forming a canopy that shades the fruit and protects it from bird damage and sun-scald. The medium-sized leaves are pentagonal, with an undulating contour and a tendency for leaf edges to curl downwards. The upper surface of the leaf is slightly glossy and rugose, but the lower surface is dull and moderately pubescent. Petioles are shorter than mid ribs, and serration of leaf margins is slight.

The flowers are self-fertile. Fruit clusters weigh about $\frac{1}{4}$ pound (113 g) each and are moderately loose, permitting good spray penetration (Table 1). The berries are red, spherical, larger than 'Stover' or 'Blue Lake', and average 17.7% soluble

Table 1. Descriptions of fruit characteristics of 'Liberty' and three other cultivars of bunch grapes resistant to Pierce's disease.

Cultivar	Cluster wt (g)	Berry wt (g)	Color	Sol. solids (%)	Seeds per berry	Flesh per seed (g)	Yield (tons per acre)	July ripening dates
Liberty	113	3.2	Red	17.7	2.4	1.3	2.5	9-15
Stover	98	2.4	Lt. Gr.	17.0	2.4	1.0	4.1	1-8
Blue Lake	122	2.0	Purple	16.1	3.0	0.7	5.9	15-22
Lake Emerald	184	1.8	Green	19.5	3.8	0.5	3.8	24-31

solids. They ripen after 'Stover' but before 'Blue Lake' in most years (about July 9 to 15 in Leesburg).

Four years after being grafted on 'Dog Ridge' rootstock, 'Liberty' produced yields averaging 2.5 tons per acre (5.6 metric tons/hectare). Further yield increases can be expected as vines mature. Fresh fruit taste panel ratings were good to very good, higher than 'Stover', 'Blue Lake', and 'Norris' (Table 2). One of the reasons for the superior fresh fruit quality is the higher weight of flesh per seed (Table 1).

'Liberty' is resistant to Pierce's disease and anthracnose, and tolerant of powdery mildew, downy mildew, and fruit rot (Table 3). It is susceptible to *Isariopsis* leaf blight, requiring fungicidal sprays after harvest to prevent early defoliation. 'Liberty' is adapted to the well-drained soils in the state where the soil pH is below 6.5.

ROOTSTOCK VARIETIES

'Liberty' grows faster and yields more fruit on a vigorous rootstock such as 'Dog Ridge', 'Blue Lake' or 'Lake Emerald' than on its own roots. Special soil problems such as parasitic nematodes can be overcome by grafting or budding 'Liberty' on one of the above rootstocks. 'Dog Ridge' is the preferred rootstock where the soil pH is near neutral or higher, since it tolerates high pH better than 'Liberty' or the other rootstocks.

USES AND LIMITATIONS

Because of its superior fresh fruit quality, 'Liberty' is well suited for pick-your-own vineyards and dooryard plantings.

Table 2. Results of fresh fruit taste panels consisting of 18, 54, and 45 persons (1972-1974).

Cultivars tasted	Mean taste rating ¹			
	1972	1973	1974	3 yrs.
Liberty	4.17	4.20	3.69	4.02
Stover	4.36	3.46	—	3.91
Blue Lake	3.44	2.33	—	2.89
Norris	2.78	2.81	2.98	2.86

¹ Ratings (0=poor, 1=fair, 3=good, 5=very good, 10=excellent).

Table 3. Disease and insect resistance ratings and vine characteristics of Liberty and three other Pierce's disease-resistant cultivars of bunch grapes.

Cultivar	Vine vigor ¹	Bud break (%)	Growth habit	Disease and insect resistance levels ²							Resistance score ³
				PD	A	I	D	P	R	F	
Liberty	4	70	recumb.	hi	hi	low	med	med	med	med	18
Stover	4	78	erect	hi	low	hi	med	med	med	hi	21
Blue Lake	5	59	recumb.	hi	hi	low	hi	hi	hi	low	25
Lake Emerald	5	48	erect	hi	med	med	low	hi	low	low	14

¹ Vigor ratings (1=poor, 2=fair, 3=fair to good, 4=good, 5=excellent).

² Diseases (PD=Pierce's disease, A=anthracnose, I=Isariopsis blight, D=downy mildew, P=powdery mildew, R=ripe rot). Insects (F=grape leaf folder).

³ Score (low=0, med=2, high=5) based on total score for 6 diseases and 1 insect.

While yields appear to be lower than those of 'Stover' and 'Blue Lake', increases can be obtained by optimum fertilization, irrigation, spraying, and use of the Geneva Double Curtain trellis. The wine and juice potential for 'Liberty' is not presently known, but acceptable wines have been made from the fruit of both parent varieties.

DISTRIBUTION OF PLANTS AND CUTTINGS

Distribution to nurseries is being handled by the Florida Foundation Seed Producers, Inc., P. O. Box 14006, University Station, Gainesville, Florida 32604. Make all requests directly to this agency.



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