

Research Note

'Ruiduwuheyi Seedless': A new late-maturing seedless table grape

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Introduction: Chinese consumers prefer seedless grape cultivars. The foreign cultivars such as 'Autumn Royal', 'Superior Seedless', and 'Crimson Seedless' (DAVID 1995) show different adaptation responses to the local environment. The natural berry size of domestic seedless cultivars is usually small. The 'Ruiduwuheyi Seedless' grape (*Vitis vinifera* L.) is a late-season, attractive, red seedless grape with naturally large and firm berries (Fig. 1). In the current study, the average bud break date is April 23rd, average bloom date is May 29th, and typically harvest is September 15th. The cultivar, released in 2010, has a sweet crisp flavor and is a good seedless alternative for table grape production in northern China.



Fig. 1: Cluster of 'Ruiduwuheyi Seedless' grape.

Material and Methods: The table grape breeding program is based at the Institute of Forestry and Pomology in Beijing (39°58' N and 116°13' E), where the winter temperature is usually between 0 and -10 °C and summer temperature ranges from 32-36 °C. 'Ruiduwuheyi Seedless' is the result of three generations of hybridization in 1997 (Fig. 2). The progeny of 'Muscat Hamburg' and 'Pearl of Csaba' was hybridized with 'Cardinal' to obtain 'Xiangfei' (XU, 2001), which is the seed parent of 'Ruiduwuheyi Seedless'. The seedlessness of 'Ruiduwuheyi Seedless' is attributed to its pollen parent, 'Ruby Seedless'. 84 hy-

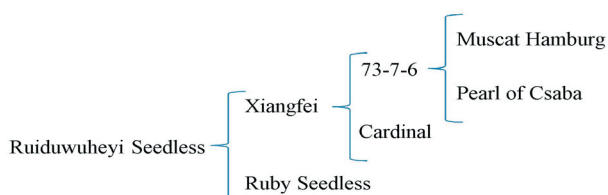


Fig. 2: Pedigree of 'Ruiduwuheyi Seedless' grape.

brid seedlings were planted in a vineyard, among which 10 vines produced seedless berries. The original plant was preliminarily selected in 2003 from the 10 vines and tested as '17-13-3'. 20 buds were grafted on the rootstock for trials in 2004. The plantings were spaced 2 x 3 meters. The asexually reproduced vines first produced fruit in 2005, yielding 4,500-7,500 kg·ha⁻¹; in 2006, the yield was 9,000-1,500 kg·ha⁻¹.

Results and Discussion: 'Ruiduwuheyi Seedless' vines are moderate to vigorous on their own roots, with relatively short internodes and good productivity when spur-pruned. On the average, it ripens during middle to late September in Beijing. The cluster is medium-sized, well-filled to compact, has an average weight of 459 g, and is conical-shaped with a shoulder. The round to oval-shaped berry weights on average 6.2 g with a maximum weight of 11.4 g, and is 21.8 mm in diameter and 24.3 mm in length. In comparison, 'Ruby Seedless' has a natural berry that weights only 2.5 g, 15.0 mm in diameter, and 17.7 mm in length. The berries are not sensitive to gibberellins. The peduncle of the 'Ruiduwuheyi Seedless' grape is medium in diameter and length, averaging 3.9 cm. The pedicel, with an average of 0.7 cm, is medium in length. The berries are reddish-purple in color with light white bloom. The flesh is firm and crisp with an excellent flavor and does not separate from the skin. The average soluble solid content of 'Ruiduwuheyi Seedless' is 16.2 %. For commercial production, the cluster size of this grape should be thinned to 70-90 berries. These grapes mature relatively earlier than 'Ruby Seedless' grapes. The vine has the characteristics of early fruiting and easy management.

Table

Fruit characteristics of the two cultivars during 2006-2008 at the Institute of Forestry and Pomology, Beijing^x

Year	Characteristic	Ruiduwuheyi Seedless	Ruby Seedless
2006	Soluble solids (%)	18.0a ^y	19.1a
	Cluster weight (g)	359.2a	396.5b
	Berry weight (g)	4.3a	2.5b
	Harvest date	Sep 27	Sep 27
2007	Soluble solids (%)	19.5a	22.0b
	Cluster weight (g)	423.3a	513.5b
	Berry weight (g)	5.1a	2.5b
2008	Harvest date	Sep 27	Sep 28
	Soluble solids (%)	15.2a	20.0b
	Cluster weight (g)	518.1a	513.3a
	Berry weight (g)	7.4a	2.8b
	Harvest date	July 3 ^z	Sep 28

^x Data are the means from 20 vines of each cultivar with 10 berries per vine.

^y Mean separation within columns by Duncan's multiple range test, p < 0.05.

^z No fruit in the field due to the bad weather that year; data obtained were from the greenhouse.

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