

Black Table Grape 'Heukboseok'

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'Heukboseok', a tetraploid (4X) grape, resulted from the cross between 'Beniizu' (4X, *Vitis* sp.) and 'Kyoho' (4X, *Vitis* sp.) at the National Horticultural Research Institute (NHRI), RDA, Korea in 1992, and was preliminarily selected in 1998. Regional adaptability tests were conducted in seven sites from 1999-2003 under the name of 'Wonkyo RA-14'. It was finally selected in 2003 due to its large and high quality berries with excellent skin color. Although most tetraploid cultivars have a berry shattering problem, 'Heukboseok' showed a low incidence of berry shattering, resulting in a good berry set compared with 'Kyoho'. 'Heukboseok' has a mean budburst on 16 April, flowers on 1 June, and fruit matures on 9 September (almost 10 days earlier than 'Kyoho') at Suwon, Korea. The mean berry weight of 10.6g and mean soluble solids of 18.4°Brix are similar to 'Kyoho'. The skin color is black-blue with abundant bloom and flesh firmness is soft and juicy. It is recommended that it be pruned to 6 to 12-node canes, 2 to 4 nodes shorter than 'Kyoho' during winter because it is not as vigorous. 'Heukboseok' may be used as a substitute for 'Kyoho' in grape cultivation in Korea, due to its large sized berries with high quality and several characteristics for facilitating vineyard management such as excellent skin color, good cold hardiness, good disease resistance, and good fruiting.

'Heukboseok' is a black table grape which produces fruits with pronounced varietal characters similar to 'Kyoho', one of its parents. 'Heukboseok' is distinguished by its superior fruit quality with good productivity, partial resistance to crown gall, and cold hardiness superior to its parent, 'Kyoho'.

'Heukboseok', which means "black balls" in Korean, is the sixth table grape cultivar named by NHRI. It followed the release of 'Cheongsoo' (1), 'Hongdan' (5), 'Tamnara' (3), 'Heukgoosul' (4), and 'Hongisul' (2).

Origin

'Heukboseok' resulted from the cross 'Beniizu' x 'Kyoho' made in 1992 with the intention of producing a high quality table grape with the taste of 'Kyoho'. Seeds harvested were planted in 1993. Fruits were first observed in 1997 and the original vine was propagated in 2000 under the number '92-2-1'. 'Heukboseok' was finally selected in 2003 as a table grape. It was applied for a plant patent in Korea.

Flowers

Flowers of 'Heukboseok' are perfect and self-fertile, blooming at mid-season (on 1 Jun. in Suwon, Korea) following early season bud-break.

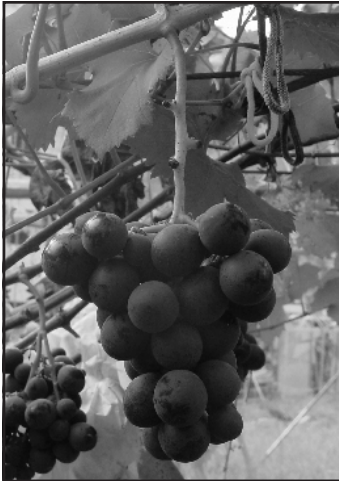
Fruits

'Heukboseok' has black blue skin color when fully ripened. Fruits are large averaging 11.5g and round to slightly ovate. When the grapes are fully ripened, the aroma of 'Heukboseok' is very similar to that of 'Kyoho' with pronounced balanced flavor. 'Heukboseok' ripens between 5 Sept. and 8 Sept. in Suwon, Korea, 12 days earlier than 'Kyoho'. Juice soluble solids are usually higher and pH is usually similar to 'Kyoho' (Table 1). The balance between sugar (18.3°Bx), acidity (0.48% titratable acidity) and pH (pH 3.12) is excellent. These data indicate that 'Heukboseok' can accumulate satisfactory amounts

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Table 1. Fruit characteristics of grape cultivar 'Heukboseok' and its parent 'Kyoho'

Cultivar	Maturing date	Cluster weight (g)	Berry skin color	Berry weight (g)	Soluble solids (°Bx)	Acidity (%)
Heukboseok	6 Sept.	420	Black	11.5	18.3	0.48
Kyoho	18 Sept.	451	Black	11.6	17.1	0.49

**Fig. 1.** Fruits of grape cultivar 'Heukboseok'.

of sugar while maintaining sufficient acidity. Its berry has two seeds of 8.0 mm in length. Its skin is slip, pulpy, medium in thickness and there are some skin splits in rainfall.

Clusters

The clusters are large in size (400 to 450g with 35-40 berries per each), conical, sometimes with a small shoulder, and tight in berry setting. The cluster appearance is excellent with black skin color. Incidence of berry drop is low during storage and transport after fruit harvest.

Vines

Own-rooted vines are vigorous, productive (20 Mt/ha), and cold hardy, showing no bud damage at -20°C in Suwon, Korea. Vines show uniform clusters in size and ripening period with excellent berry setting by

cane pruning. The foliage is moderately susceptible to anthracnose (*Elsinoe ampelina*) and downy mildew (*Plasmopara viticola*). However, the trunk is moderately resistant to crown gall (*Agrobacterium vitis*). After fruit harvest, it is required to keep as many healthy leaves as possible on the vines to maintain sufficient nutrient for good plant growth in the following year.

Availability

Requests for cuttings for research purposes may be addressed to Haekeun Yun (hekeun@rda.go.kr). Vines are available for sale at the Korean Society for Fruit Tree Nursery (4-38 Seonghwang-dong Cheonan, 330-130, Korea).

Literature Cited

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