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'Zaohongmi' Peach

MA ZHISHENG AND JIA YUNYUN

Abstract

'Zaohongmi' peach (*Prunus persica* (L.) Batsch) was released as an early, high quality and productive cultivar. It is now extensively grown in China because of its superior fruit size, fine texture, firmness, and flavor.

'Shenzhoumitao,' a white-fleshed, clingstone peach, has been the major cultivar—famous both in China and abroad. Its fruit is large, finely textured, fairly firm, sweet and juicy,[1] but it is unproductive. It was selected as a parent based on its favorable size, texture, firmness, and sweetness. 'Zaohongmi' originated from a 1982 cross between 'Shenzhoumitao' and 'Hangzhouzaoshuimi' at Shijiazhuang Pomology Institute, Hebei Academy of Agriculture and Forestry Sciences (SPIHAAFS) (Fig. 1). It was first selected in 1985, and tested as 83-1-7. It was repropagated for second testing in 1986 and named in 1992.

After more than 15 years of study, 'Zaohongmi,' which inherited the high fruit quality traits of 'Shenzhoumitao,' was released in 1992 by SPIHAAFS for the fresh market as an early, high quality, productive peach adapted to most peach growing regions of China (North China, Northwest Yellow Plateau, middle and lower reach of Yangtze River). It has become a leading early-maturing peach cultivar in China, and its area of production continues to increase.

Description

Leaf and flower bud-break occur after accumulating about 850 chilling units. In central Hebei Province (North China, 37.5° N latitudes). 'Zaohongmi' bud-break begins in early March and full bloom is reached about the second week in April. The fruit development time is 70-75 days, fruit ripen during the last week of June or first week in July. Leaf drop occurs in late October.

The shoot is thick, glabrous and green with a few inconspicuous, raised lenticels. Average leaf dimensions are about 15.4 cm long and 3.6 cm wide. They are flat, long, lanceolate, and thick, with the upper surface dark green. They usually have 2 or more reniform lands on the petiole. Floral buds are large, obtuse or conical plump and pubescent. Flowers are light pink and showy with an average of 47 anthers per flower. The pistil and stamens are equal in length. Pollen is bright yellow and abundant, flowers are self-fertile.

'Zaohongmi' produces large fruit for an early peach (7.6 cm height and 6.8 cm width) with an average fruit mass of 180g. Fruits are generally long round, symmetrical, with a prominent round tip and a shallow suture. The stem cavity is shallow and moderately wide. The skin has short pubescence with 50-60% red blush over yellow-green ground color. The flesh is greenish-white, firm, nonmelting, medium-juicy, sweet, aromatic,

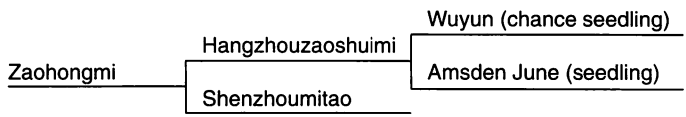

Figure 1. Pedigree of 'Zaohongmi' peach.

Shijiazhuang Pomology Institute, Hebei Academy of Agriculture and Forestry Sciences, Shijianzhuang, Hebei, 050061, Peoples Republic of China.

semi-freestone with good eating quality. Fruits are uniform in size, with no preharvest drop or splitting. We believe it is one of the best tasting peaches in our extensive collections.

The tree is medium in size, semi-spreading and vigorous. The trunk girth and canopy increase quickly in the first several years. Trees respond well to pruning and are easily trained to open center form. It has high bud-bursting and branching abilities (84% of buds break and a mean of 3.6 long shoots develop after a heading cut). All kind of fruit shoots bear well, but long shoots fruit best. Fruit set is high, so manual fruit thinning is required in the absence of natural thinning by spring frost.

Resistance and adaptability: 'Zaohongmi' is resistant to anthracnose (*Gloeoporium laeticolor* (Berk)), powdery mildew (*Spharotheca punnose* (wallr)), bacterial leaf spot (*Xanthomonas pruni* (E. F. Sm) Dous), and brown rot (*Monilinia fructicola* (wint.) Honey). It is very cold hardy and its adaptability surpass 'Shenzhoumitao.' It can be grown in most peach growing regions (North China, Northwest Yellow Plateau, Middle and Lower reaches of Yangtze River) of northern or southern China.

Cultural Practices

The following practices were used for the study trees at SPIAAFS:

1. During the first 1-4 years, light dormant pruning was conducted, followed by heavy summer pruning, in order to decrease the vigor of the tree, promote flower bud differentiation, expand the canopy, increase bearing surface, control upright shoots and watersprouts, thin overcrowded branches, and develop fruiting shoots distributed throughout the canopy.
2. Manure was applied to supply complete and long-term nutrients to the tree, decrease deficiency symptoms and improve soil texture. Over-application of N-fertilizer was avoided.
3. Fruit were hand thinned, leaving 15-20 cm between fruit.

Availability

Budwood of 'Zaohongmi' for testing is available from the authors at Shijiazhuynag Pomology Institute, Hebei Academy of Agriculture and Forestry Sciences, Shijiazhuang, Heibei, 050061, Peoples Republic of China.

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Reference

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Interaction of Rootstock and Balanced Pruning

Total grapevine canopy was found to depend on site and rootstock but was independent of pruning formula. Vines on 11OR exhibited the most vegetative growth and vines on O39-16 the least. Increasing buds left in pruning decreased bud viability and individual shoot length altering the partitioning but not the magnitude of the total canopy. Yield depended on both rootstock, pruning formula and vine size. Increased in yield due to higher pruning formulae or larger vine size were partially offset by compensating decreases in bud viability, clusters per shoot and berry set. Differences in time of ripening caused by pruning formulae were largely accounted for by changes in crop to vegetative partitioning. At similar crop loads maturity was advanced by 0.7 Brix on 3309C and delayed by 0.7 Brix for vines on O39-16. Rootstock and vine size effects on vigor or partitioning could be adjusted through changes in pruning formulae. From Benz and Wolpert. 1999. Amer. J. Enol. and Vit. 50(3):375.