'Xiami' Peach

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Abstract. The 'Xiami' peach [*Prunus persica* SUMMERHONEY('Xiami')] has been released by the Taiwan Agricultural Research Institute, Council of Agriculture to provide a late maturity in the last few days of May to mid June, a large peach, high yielding, excellent quality, melting, white with red fleshed, freestone, with a very low chilling requirement of around 125 chill units. 'Xiami' peach is named for its late ripening time, juicy, low acid, and sweet fruit.

Origin

'Xiami' originated from a cross of 'Premier' × 'Flordared' (Fig. 1), which was made at Taichung, Taiwan, in 1997 by S. K. Ou. The Pedigree of pollen parent was derived from (Southland × Hawaiian) F₄ (Okie, 1998). It was selected in 1999, propagated in 2000, and tested as ARI 86–37. Budded trees have been tested at Taiwan Agricultural Re-

search Institute (TARI) and two commercial farms in Shinshe Township and Fuhsing Township.

Description

The new peach cultivar 'Xiami' is the second "water-honey-peach" (melting) released for the low-elevation growing areas of Taiwan. It is named 'Xiami' because of its late ripening, sweet and low-acid fruit. Fruit weight of 'Xiami' peach averages ≈30% greater than fruit weight of 'SpringHoney' (Table 1). 'SpringHoney', released in 2001, was the first commercial cultivar released by TARI (Ou and Wen, 2003). The major advantages of 'Xiami' include a very low chilling requirement, late ripening, large fruit, low acidity, and high crop loading. Flowers are self-fertile, showy, with bright yellow and abundant pollen. Normal average bloom dates are from late January to the end of February in Taichung (Table 2).

Fig. 1. Pedigree of 'Xiami' peach.

The attractive fruits (Fig. 2) are ovate in shape, very large, with an average weight around 157 g without thinning and around 201 g with thinning. Fruits ripen ≈110 to 122 d from bloom in TARI (85 m above sea level [masl]), 116 to 121 d in Hsingshe Township (535 masl), and 121 to 136 d in Fuhsing Township (500 masl). The surface has 50% red blush at maturity and the background color is white with a cream yellow. 'Xiami' ripens later with less blush and better size than 'SpringHoney'. Pubescence is heavy on the fruit. Fruit has a desirable soluble solids (12.5% Brix), low titratable acidity (0.4% malic acid), firm but melting texture, aromatic flavor, and white flesh with red purple (≈10%) coloration around the pit cavity. The stone is free when fruit is ripe (Table 1). The high acidity of pollen parent 'Flordared' is not accepted by local consumers, but its traits concerning very low chilling requirements and large fruit have been incorporated into the breeding programs. The ripening date of 'Xiami' can be longer than 'SpringHoney' by 28 to 35 d (Table 2). The large fruit size, late ripening, and high average yield 17.6 t·ha⁻¹ (Table 3) are beneficial to the peach grower for increasing economic value and extending the fruit supply period.

Tree Characteristics

Tree description. Trees of 'Xiami' are vigorous, semispreading, and suited for open center pruning. Trees set a moderate number of flower buds, fruit set is high, and require fruit thinning at ≈10 to 15 cm apart to produce desirable fruit size. The leaf glands are reniform (Table 3).

Table 1. Fruit characteristics of 'Xiami' and comparable peach cultivars tested at TARI (2002–2004).

Cultivar	Skin overcolor (%)	Skin background color	Shape ^z	Firmness	Fruit wt (g) ^y	Stone freeness	Soluble solids (% Brix) ^y	Titratable acidity (% malic)	Taste ^z	Texture ^z	Flesh color
Flordared	60	Greenish white	8	Medium	153	Free	11.7	0.91	5	8	White
Premier	70	Cream white	8	Medium	107	Semi-cling	12.0	0.33	9	9	White
SpringHoney	90	Cream yellow	8	Medium	121	Semi-cling	11.0	0.42	8	7	White/red
Xiami	50	Cream yellow	9	Medium	157	Free	12.5	0.41	8	9	White/red

^zRating on a 1 to 10 scale where 10 is most desirable. A rating of greater than 6 is commercially acceptable.

^yEach value is the mean of 30 observations over 3 years of budded trees (second to fourth years).

Table 2. The average phenological periods for 'Xiami' and comparable peach cultivars tested at TARI (2002–2004).

Cultivar	Chilling requirement (chill units)	Bloom date				Ripening time			
		First bloom	Full bloom	Last bloom	Bloom length (days)	First harvest	Full harvest	End harvest	Fruit development period (days)
Flordared	100	27 Jan.	10 Feb.	25 Feb.	30	5 May	12 May	3 June	91–107
Premier	150	3 Feb.	21 Feb.	28 Feb.	26	27 April	12 May	31 May	81–93
SpringHoney	180	2 Feb.	19 Feb.	29 Feb.	28	23 April	1 May	21 May	72–89
Xiami	125 ^z	24 Jan.	9 Feb.	27 Feb.	35	24 May	1 June	10 June	110–122

^zBased on relative bloom order and time of bloom of known "key cultivars" such as Flordared, Premier and Tropicshow.

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Fig. 2. Fruit of 'Xiami' peach.

Table 3. Tree characteristics of 'Xiami' and comparable peach cultivars tested at TARI (1999–2004), Shinshe (2001–2004), and Fuhshing (2002–2004).

Cultivar	Vigor ^z	Leaf glands	Flower type	Flower density ^z	Fruit set ^z	Avg yield (t·ha ⁻¹)
Flordared	9	Reniform	Showy	8	8	16.2
Premier	8	Reniform	Showy	10	9	16.9
SpringHoney	10	Reniform	Showy	6	7	12.4
Xiami	9	Reniform	Showy	9	9	17.6

^zRated on a scale of 1 to 10, where 10 is most desirable.

Time of bloom and chilling requirements. 'Xiami' trees in the lowland subtropics require ≈ 125 chill units (CU) for breaking of dormancy (Table 2). This is more than

'Flordared' (100 CU) but less than 'Premier' (150 CU), as estimated by relative bloom order with key cultivars (Byrne and Bacon, 1991; Sherman et al., 1988) in the same

orchard. According to the Taiwan low-chill model (Ou and Chen, 2000), the optimum temperature contributed for chilling in peach is less than 15 °C. The accumulation of chilling temperatures in lowland Taiwan is less consistent than in temperate zones; hence, the bloom period of 'Xiami' as well as 'Flordared', 'SpringHoney', and 'Premier' can last up to 4 wk (Table 2) or more than 8 wk (Ou and Song, 1999) as a result of insufficient chilling.

Availability

Limited quantities of nonindexed bud wood may be available for research purposes only by request through the Plant Germplasm Division, Taiwan Agricultural Research Institute, Wufeng, Taichung, Taiwan.

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