‘SpringHoney’ Peach

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‘SpringHoney’, an early ripening, low acid, large-fruited, white, melting flesh peach [*Prunus persica* (L.) Batsch], was developed for lowland subtropical environments. ‘SpringHoney’ peach is named for its early ripening time and juicy, low acid, sweet fruit.

Origin

‘SpringHoney’ was released in 2001 by Taiwan Agricultural Research Institute (TARI). It is a hybrid between ‘Premier’ and ‘Flordabelle’ (Fig. 1) made by I.C. Wen in 1987. The seedling tree was selected in 1991, and further evaluated as ‘TARI 76-69’ in grower trials from 1992 through 2000 by S.K. Ou.

Description and Performance

Flowers are self-fertile, small, non-showy, with bright yellow and abundant pollen. Normal bloom dates are from early January to mid-March in Taichung. The attractive fruits are ovate and very large, averaging 136.6 g (Fig. 2). Fruit ripen $\approx$ 81–83 d from bloom in TARI [85 m above sea level (masl)], and 82–86 d from bloom in Tung-shin and Hsing-she (400–535 masl). The surface has 95% red blush at maturity and the ground color is white with cream-yellow. ‘SpringHoney’ ripens earlier and has more blush and larger fruit than does ‘Premier’, the first sweet, melting, white-flesh cultivar used for commercial production in Taiwan (Ou and Song, 1999). Fruit weight of ‘SpringHoney’ peach averages $\approx$ 137 g (Table

1), which is $\approx$ 40% greater than that of ‘Premier’. Pubescence is heavy. The fruit is sweet, low acid, and has a medium texture and a firm but melting, white flesh with red-purple ($\approx$ 25%) coloration. The stone is semi-free when fruit

is ripe (Table 1). Compared to the local stony hard ‘In-ge-taur’, the new cultivar is the first released “water-honey-peach” (melting) for the low elevation growing areas of Taiwan.

Trees are vigorous, semi-spreading, and suited for open-center pruning. Trees set a moderate number of flower buds and require fruit thinning to produce desirable fruit size. Leaf glands are reniform.

‘SpringHoney’ trees in the lowland subtropics require 180 chill units (CU) (Table 2), less than ‘Flordabelle’ (200 CU), but more than ‘Premier’ (150 CU), as estimated by relative bloom order with key cultivars (Byrne and Bacon, 1991; Sherman et al., 1988) and the Taiwan low-chill model (Ou and Chen, 2000). The value of CU is calculated by the Taiwan low-chill model (Table 3) (Ou and Chen, 2000). The optimum temperature for chilling accumulation to complete rest has been reported

Fig. 1. Pedigree of ‘SpringHoney’ peach.

Fig. 2. Fruit of ‘SpringHoney’ peach.

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Table 1. Performance of fruit characteristics for ‘SpringHoney’ and comparable peach cultivars fruited at TARI in 1998.^z

Cultivar	Fruit				Flesh							
	Red color (%)	Ground color	Shape	Firmness	Fruit wt (g) ^y	Yield (T·ha ⁻¹)	Stone freeness ^x	Soluble solids (°Brix) ^w	Acidity (%) ^v	Flavor	Texture	Color
In-ge-taur	40	Cream white	6 ^z	High	129.2 a ^x	---	Cling	14.9 a ^x	0.88 a ^x	6	Stony hard	White
Premier	70	Cream white	9	Medium	94.3 b	13.9	Semicycling	11.2 b	0.52 b	9	Melting	White
SpringHoney	95	Cream yellow	8	Medium	136.6 a	10.5	Semi-Free	10.2 b	0.42 b	8	Melting	White/red

^zRating, except for fruit red color, weight, soluble solids, and acidity, is on 1 (completely unsatisfactory) to 10 (best) scale. A rating >6 is commercially acceptable.

^yEach value is the mean of 30 observations.

^xMean over 4 years (2nd to 5th year).

^wDuncan’s multiple range test, 5% level. Means in the same column followed by the same letter are not insignificantly different.

^vAcidity is calculated as percent malic acid.

Table 2. Phenological periods for 'SpringHoney' and comparable peach cultivars fruited at several sites in central Taiwan (1991–98).

Cultivar	Chilling units ^z	Bloom date				Ripening time				Leaf drop	
		First bloom	Full bloom	Last bloom	Bloom length (d)	First harvest	Full harvest	End harvest	Fruit development period (d)	First leaf drop	End leaf drop
Flordared	100	1/5	1/19	3/9	63	4/17	4/22	5/29	93–98	10/20	11/19
In-ge-taur	170 ^a	1/13	1/26	3/17	63	5/25	5/29	7/1	123–133	10/29	12/12
Premier	150	12/30	1/13	2/24	56	4/11	4/22	6/5	96–99	10/29	12/2
SpringHoney	180 ^a	1/5	1/26	3/17	71	4/1	4/17	5/11	81–86	10/20	12/2

^aBased on relative bloom order, time of bloom, and calculations by Taiwan chilling model based on 8 years of data.

Table 3. The criteria of the Taiwan low-chill model are used to accumulate the chill unit.

Temp (°C)	Chill units contributed ^a
≤7.2	1.0
7.3 to 15.0	0.5
15.1 to 26.6	0
26.7 to 27.8	–0.5
>27.8	–1.0

^aThe Taiwan low-chill model was developed by trial and error from >3.3 million testing combinations.

at 7.2 °C (45 °F), but only an average of 17 h (chill hours) was accumulated in this range during 7 years (1993–94 to 1999–2000) at TARI. The Taiwan low-chill model indicates that the optimal temperature for chilling in

'Spring Honey' is <15 °C. The accumulation of chilling temperatures in lowland Taiwan is less consistent than in temperate zones, hence the bloom period of 'SpringHoney' as well as 'Flordared', 'In-ge-taur', and 'Premier' can last up to 8 weeks or more due to insufficient chilling (Table 2). The fruit development period of the new cultivar can be shorter than local 'In-ge-taur' by 42 or more days. The large fruit size and early ripening are beneficial to the peach grower.

Availability

Limited quantities of non-indexed bud wood may be available for research purposes only by request through the Office of Plant

Germplasm, Taiwan Agricultural Research Institute, Wufeng, Taichung, Taiwan, ROC.

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