'Roseprincess', a White-fleshed Nectarine

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Additional index words. *Prunus persica*, fruit breeding, cultivar

'Roseprincess' nectarine [*Prunus persica* (L.) Batsch] was released in 1989 to provide an attractive, white-fleshed nectarine for local sales and medium-distance shipping. 'Roseprincess' is well adapted to humid conditions in the southeastern United States.

Origin

'Roseprincess', initially tested as BY80N384, originated as an open-pollinated seedling of the nectarine selection BY76N138 (Fig. 1). Grandparent F100-62 was selected at the U.S. Dept. of Agriculture breeding program in Fresno, Calif. In 1979 when V.E. Prince collected the seed of BY76N138 at Byron, there were a few adjacent nectarine seedlings with white-fleshed fruit. These trees originated from seed he collected in 1975 from an unknown yellow-fleshed VPI selection planted along with 'Redchief' (white-fleshed) in a grower block in Alabama. Pollen from these 1976 seedlings was probably the source of the white-flesh gene in 'Roseprincess' since BY76N138 is homozygous recessive for yellow flesh. W.R.O. selected 'Roseprincess' in 1982 when it first fruited.

Description

Firmness was measured using a Magness-Taylor pressure tester. Color (L, a, b system) was measured with a Minolta tristimulus colorimeter using an 8-mm aperture. Measurements made in the laboratory were in duplicate on three samples of five fruit each. Sensory data came from a larger study of peach and nectarine varieties and selections using an untrained panel of 25 people presented duplicate samples (Robertson et al., 1990).

'Roseprincess' fruit is large for a nectarine (6 to 7 cm in diameter) when properly thinned (Table 1). At maturity the skin has a 50% rose-pink blush (L = 35, a = 13, b = 14) over an ivory ground color. The firm, melting flesh is white (L = 74, a = -4, b = 20) with some red (L = 55, a = 13, b = 12) in the freestone pit cavity. Flavor is good; the acidity is high (1.2%) and would appeal to those who prefer fruit with a strong flavor. Peach fruit acidity usually ranges from 0.6% to 1.0% (Robertson et al., 1990). Flesh browning appears to be moderate; browning of cut fruit occurs but more slowly than in old white-fleshed peach cultivars.

'Roseprincess' ripens $\approx$ 2 weeks after 'Snow Queen' (Table 2), a high-quality, white-fleshed nectarine that has developed a

niche market in Georgia. 'Roseprincess' has a more attractive shape, color, and finish and would be a good sequel to 'Snow Queen'. No other suitable white-fleshed nectarines are available for commercial production in the eastern United States.

Trees of 'Roseprincess' are vigorous and quite productive. The normally heavy set requires extensive thinning. 'Roseprincess' shows moderate resistance to bacterial spot [*Xanthomonas campestris* pv. *pruni* (Smith) Dye] in grower trials in Alabama. Chilling requirement is $\approx$ 850 hours below 7C, similar to 'Redgold' nectarine (Table 2). The self-fertile flowers are large and showy. Petiole glands are reniform.

'Roseprincess' carries but does not express the gene (*W/w*) for lack of anthocyanins. Seedlings of *w/w* genotype have green twigs, white flowers, and fruit without red pigment. 'Roseprincess' seedlings segregate both for skin color (*W/w*) and flesh color (*Y/y*), resulting in red, yellow, or ivory skin color and white or yellow flesh. The source of the *W/w* gene in 'Roseprincess' may have been a mutation. No white-flowered seedlings appeared in the 1976 seedlings or their progenies as they would have if one of the parents of 'Roseprincess' had carried the gene. The only white-flowered types in our collections in 1979 were $\approx$ 2 km away and had very poor fruit quality.

'Roseprincess' has performed well in central Georgia and Alabama and is recommended for trial in the middle to upper chill zones of the southeastern United States. June-budded trees are available from nurseries in Tennessee.

Table 1. Physical, chemical, and sensory characteristics of firm-ripe fruit of 'Roseprincess' nectarine and 'Loring' peach grown at Byron, Ga.

Attributes	Cultivar ^a	
	Roseprincess	Loring
Physical		
Diam (mm)	59 $\pm$ 2	69 $\pm$ 1
Wt (g)	122 $\pm$ 8	180 $\pm$ 7
Firmness (N)	60 $\pm$ 5	40 $\pm$ 1
Ground color (L)	66.2 $\pm$ 2.0	70.2 $\pm$ 0.4
(a)	11.3 $\pm$ 4.1	-3.6 $\pm$ 0.4
(b)	27.1 $\pm$ 1.2	42.5 $\pm$ 0.5
Chemical (fresh wt)		
Titrate acidity (% as malic)	1.21 $\pm$ 0.01	0.80 $\pm$ 0.003
Soluble solids concn (%)	13.9 $\pm$ 0.1	11.6 $\pm$ 0.05
Sucrose (%)	5.78 $\pm$ 0.09	4.22 $\pm$ 0.05
Glucose (%)	1.51 $\pm$ 0.03	1.03 $\pm$ 0.02
Fructose (%)	1.63 $\pm$ 0.03	1.08 $\pm$ 0.01
Sorbitol (%)	0.94 $\pm$ 0.03	0.47 $\pm$ 0.01
Sensory		
Mean Hedonic score ^b	5.3 $\pm$ 0.04	5.8
Sweet/sour balance^c		
Much too sour	24	---
Somewhat sour	62	70
Just right	12	28
Somewhat sweet	2	2

^aValues are the means of duplicate samples of three lots of five fruit each.

^bHedonic values for flavor are based on a 9-point scale, 1 = dislike extremely and 9 = like extremely (n = 50; 25 people with duplicate samples).

^cValues represent percentages of total response (n = 50; 25 people with duplicate samples).

Received for publication 19 Sept. 1991. Accepted for publication 3 Apr. 1992. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked advertisement solely to indicate this fact.

Table 2. Comparison of 'Roseprincess' with standard peaches and nectarines, based on performance over the last 5 years at Byron, Ga.

Cultivar	Full bloom date (March)	Chilling hours ²	Flower		Leaf glands	Fruit maturity date	Bacterial spot reaction ³	Flesh adherence to pit
			Type	Size				
Snow Queen	16	750	Nonshowy	Medium	Reniform	14 June	S	Cling
Redhaven	23	950	Nonshowy	Medium	Reniform	20 June	MR-R	Free
Roseprincess	21	850	Showy	Large	Reniform	25 June	MR	Free
Loring	18	800	Showy	Large	Globose	30 June	MR	Free
Redgold	21	850	Showy	Large	Reniform	14 July	MS	Free

²Hours below 7C needed for normal bloom.

³Disease ratings: S = susceptible, R = resistant, M = moderately.

Literature Cited

Robertson, J.A., R.J. Horvat, B.G. Lyon, F.I. Meredith, S.D. Senter, and W.R. Okie. 1990. Comparison of quality characteristics of selected yellow- and white-flesh peach cultivars. *J. Food Sci.* 55:1308-1311.

Fig. 1. Pedigree of 'Roseprincess' nectarine.