

‘Scarletprince’ and ‘Julyprince’ Peaches

W.R. Okie¹

USDA-ARS, Southeastern Fruit and Tree Nut Research Laboratory,
21 Dunbar Road, Byron, GA 31008

Desmond R. Layne

Department of Horticulture, Clemson University, Clemson, SC 29634

In recent years, the commercial shipping market has come to demand larger, more highly blushed peaches than many of the varieties traditionally grown in the southeastern United States. The peach breeding program of the Agricultural Research Service, U.S. Department of Agriculture (ARS-USDA, Byron, GA) is one of the few programs left actively developing new cultivars for this region. The survival of the southeastern industry requires cultivars that are competitive in the market as well as reliable producers in the highly variable southeastern climate.

‘Scarletprince’ is an attractive, very firm peach ripening in ‘Redglobe’ season. ‘Julyprince’ is an attractive, large, very firm peach ripening slightly after ‘Redglobe’. These yellow-fleshed, normal-acidity cultivars provide alternatives to southeastern growers for the ‘Redglobe’–‘Majestic’ ripening season. Both have performed well in South Carolina and Georgia and are suggested for trial wherever ‘Redglobe’ is grown.

Origin

‘Scarletprince’ resulted from open-pollinated seed of ‘Blazeprince’ collected in 1986. ‘Blazeprince’ was an open-pollinated seedling of BY81P2840, which was an open-pollinated seedling of ‘O’Henry’ (Fig. 1). ‘Blazeprince’ has very attractive, highly blushed, round fruit with excellent eating quality. ‘O’Henry’ is a major late-ripening California cultivar noted in the eastern United States for its firmness, high red blush, good eating quality when allowed to mature, and susceptibility to bacterial spot caused by *Xanthomonas campestris* pv *pruni* (Smith, 1903) Dye (Okie, 1998). The original seedling tree was planted at the Southeastern Fruit and Tree Nut Research Laboratory at Byron, GA, in 1987 and selected as BY87P994 by W.R. Okie when it first fruited in 1989.

‘Julyprince’ resulted from a 1992 cross of L75-A50-20 × BY89P2787 (Fig. 1).

BY89P2787 is an open-pollinated seedling of BY86P48 and is characterized by very firm, slow-softening flesh but poor texture when ripe. BY86P48 was a seedling from a cross of L72-4-20 × 7-28 with soft, low-acid flesh. L75-A50-20 and L72-4-20 were selections from the Louisiana State University peach breeding program formerly located at Calhoun, LA. The parentage of the large-fruited L75-A50-20 is unknown, whereas L72-4-20 was an open-pollinated seedling of ‘Harvester’, another Louisiana release and a major commercial cultivar in the southeast (Graham, 1999). Selection 7-28 resulted from a cross of ‘Koyohakuto’ × ‘Okubo’ made by Dr. Masao Yoshida at the National Institute of Fruit Tree Science, Ibaraki, Japan. This selection is a low-acid, white-fleshed peach homozygous-recessive for the “stony hard” gene. ‘Okubo’ is heterozygous for the stony hard gene (Yoshida, 1976). This trait curtails ethylene synthesis, resulting in a crisp fruit that can remain firm for 10 d or more after picking (Hayama et al., 2006). The original seedling tree of ‘Julyprince’ was labeled as BY93P3427 when planted at the Southeastern Fruit and Tree Nut Research Laboratory at Byron, GA, in 1993. It was selected by W.R. Okie when it first fruited in 1995.

Trees of ‘Scarletprince’ are vigorous and productive. Leaf glands are reniform. Trees appear to be moderately resistant to bacterial spot disease, much more so than ‘Blazeprince’, but are not highly resistant. Blossoms have large, showy pink petals and are self-fertile. Trees bloom with ‘Redglobe’, requiring ≈850 h of chilling below 7 °C (45 °F) to break the bud rest period in climates similar to that of Byron, GA. No virus symptoms have been observed on ‘Scarletprince’ trees at Byron.

Trees of ‘Julyprince’ are vigorous and productive. Leaf glands are reniform. Trees appear to be at least moderately resistant to bacterial spot disease, similar to ‘Redglobe’. Blossoms have large, showy pink petals and are self-fertile. Trees bloom with ‘Redglobe’, requiring ≈850 h of chilling below 7 °C (45 °F) to break the bud rest period in climates similar to that of Byron. Trees have not been extensively tested in northern climates, but the original seedling was one of the few peaches to crop well at Byron after the devastating freeze of 1996. No virus symptoms have been observed on ‘Julyprince’ trees at Byron.

Performance

Performance in Georgia was based on multiple nonreplicated trees in both seedling as well as selection test blocks. ‘Scarletprince’ ripens in late June or early July at Byron, about the same time as ‘Redglobe’. The fruit is large, 7 cm in diameter when adequately thinned, and usually very round. Fruit is firmer than ‘Redglobe’ and softens slowly on the tree. At maturity, the surface is 90% bright red with an attractive yellow ground color and little pubescence. The flesh is yellow with some red in the flesh if allowed to mature on the tree. The freestone fruit is

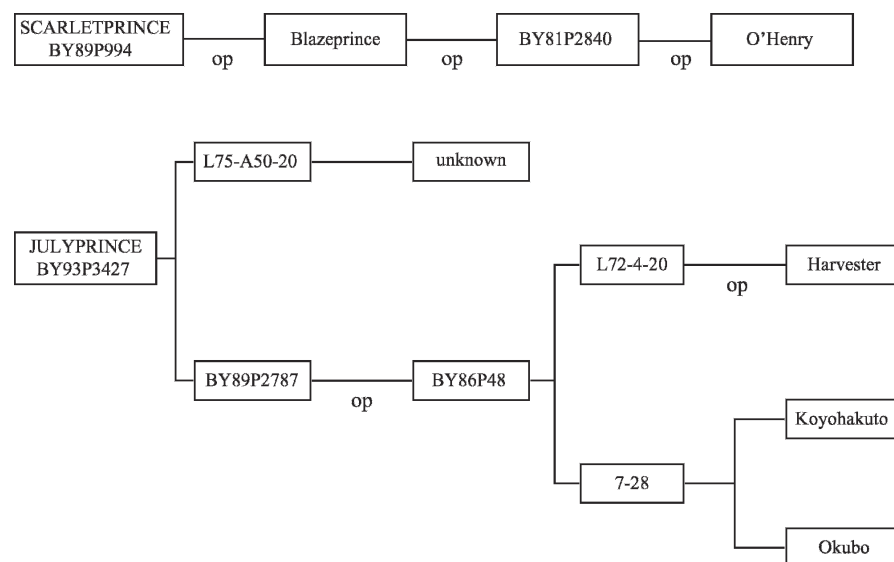


Fig. 1. Pedigrees of ‘Scarletprince’ and ‘Julyprince’ peaches (op = open-pollinated).

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‘Julyprince’ and ‘Scarletprince’ were officially released by ARS-USDA 4 June 2004.

¹To whom reprint requests should be addressed; e-mail william.okie@ars.usda.gov

firm with excellent melting texture and very good flavor.

'Julyprince' ripens in early to mid-July at Byron, ≈3 to 10 d after 'Redglobe'. The fruit is very large, 7 to 8 cm in diameter when adequately thinned, and usually very round. Fruit is very firm and softens very slowly on the tree, allowing it to be picked over a longer period than most other varieties. At Byron, fruit develops a yellow ground color early but can be left firm on the tree another 10 d to increase size and red blush color. At maturity, the surface is 70% to 80% bright red with an attractive yellow ground color and little pubescence. The flesh is yellow with some red in the pit cavity, especially if allowed to hang on the tree for an extended period. The freestone fruit develops melting texture and good flavor as it ripens. The slow-softening profile of 'Julyprince' indicates it may be heterozygous for the stony hard gene. Compared with 'Scarletprince', 'Julyprince' is larger, more productive, slightly later, and slightly less red (Fig. 2). 'Julyprince' probably has better disease resistance and frost tolerance as well. The decision was made to release both cultivars although they may overlap in ripening some years to allow the grower some flexibility in which season he needs to fill.

Fruit performance in South Carolina was assessed at two sites on commercial grower farms in the primary peach-growing regions of the state. At a Ridge area site (Watsonia Farms, Monetta, SC), a replicated trial of 51 advanced selections and industry standard cultivars was planted in 2000. In 2001, a similar trial with 55 entries was planted in the Piedmont (Cash Farms, Cowpens, SC). The trials spanned the ripening season from the first week of May through early September. The trial sites each had three blocks of three trees each per advanced selection and cultivar. All trees were propagated on Guardian™ rootstock and were planted at high density (6 m × 2 m = 996 trees/ha) and trained to the perpendicular V training system (DeJong et al., 1994). All orchard operations (fertilization, pesticide application, pruning, thinning, and training) were carried out by the commercial grower according to standard practices of the southeastern U.S. peach industry. Beginning in 2002 and 2003 for the Watsonia and Cash plantings, respectively, fruit evaluations began on a weekly basis each summer through the end of the 2006 season. Advanced selections and industry standard cultivars were assessed as they reached maturity throughout the season. On the date of evaluation, a visual assessment of the nine replicate trees was made for percentage of a full crop (set) on a 0 to 8 scale in which 8 represented a full crop. A composite fruit sample (25 to 30 representative fruit were picked randomly from each of the three blocks of three trees) was collected and evaluation was conducted in the field. From this sample, a subsample of six fruits was selected for a representative digital photograph to a standard scale. From the remaining fruits, a subset of 10 was selected and fruit

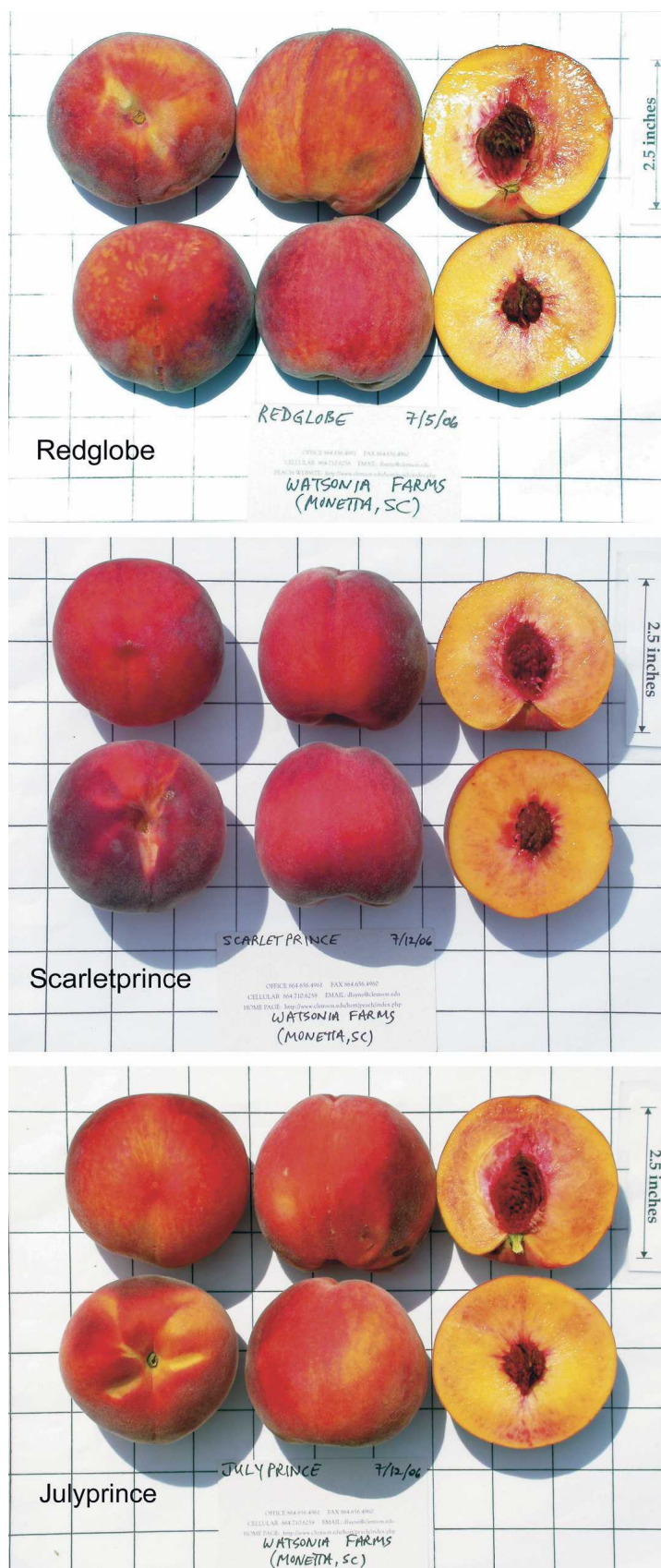


Fig. 2. Ripe fruit of 'Redglobe' (top), 'Scarletprince' (middle), and 'Julyprince' (bottom) harvested in Monetta, SC, on 5 July 2006, 12 July 2006, and 12 July 2006, respectively.

Table 1. Relative performance of peaches in South Carolina^a.

Cultivar	Ripe date (\pm days)	Mean set (0–8) ^y	Mean size (mm diam)	Mean shape (0–8) ^y	Mean blush (0–8) ^y	Mean firmness (N) ^x
Monetta, SC						
Fireprince	5 July \pm 1.3	7.4 \pm 0.4	70.4 \pm 1.6	7.3 \pm 0.1	7.4 \pm 0.1	33.6 \pm 4.6
Redglobe	8 July \pm 1.6	7.6 \pm 0.2	70.6 \pm 2.0	7.4 \pm 0.1	7.4 \pm 0.1	34.3 \pm 4.4
Bounty	8 July \pm 1.5	6.6 \pm 0.7	77.7 \pm 2.9	7.4 \pm 0.2	7.2 \pm 0.1	34.6 \pm 1.6
Scarletprince	9 July \pm 1.4	7.8 \pm 0.2	68.3 \pm 2.2	7.8 \pm 0.1	7.9 \pm 0.0	31.0 \pm 5.1
Julyprince	12 July \pm 1.5	8.0 \pm 0.0	72.2 \pm 2.8	7.7 \pm 0.1	7.6 \pm 0.1	33.3 \pm 5.0
Contender	15 July \pm 1.7	8.0 \pm 0.0	71.6 \pm 2.3	7.4 \pm 0.1	7.4 \pm 0.1	20.1 \pm 3.3
Cowpens, SC						
Fireprince	7 July \pm 0.8	7.5 \pm 0.3	70.1 \pm 4.4	7.6 \pm 0.1	7.6 \pm 0.1	23.4 \pm 3.5
Winblo	14 July \pm 0.7	7.8 \pm 0.2	70.1 \pm 2.2	7.7 \pm 0.1	7.6 \pm 0.1	16.8 \pm 2.9
Contender	15 July \pm 0.0	8.0 \pm 0.0	67.1 \pm 4.4	7.5 \pm 0.0	7.5 \pm 0.0	29.6 \pm 6.4
Julyprince	16 July \pm 2.1	8.0 \pm 0.0	66.8 \pm 3.4	7.6 \pm 0.1	7.6 \pm 0.1	28.0 \pm 6.7
Scarletprince	16 July \pm 2.1	8.0 \pm 0.0	66.8 \pm 2.8	7.7 \pm 0.3	7.8 \pm 0.0	31.9 \pm 3.4
Redglobe	17 July \pm 3.6	7.8 \pm 0.2	72.6 \pm 1.5	7.5 \pm 0.1	7.5 \pm 0.0	27.0 \pm 6.8

^aMeans (\pm SE across years) for 2002 to 2006 for Monetta; 2003 to 2006 in Cowpens. Ripe date and set estimated from three replications. Fruit parameter means based on a 10-fruit subsample of 25 or more fruit picked over the three replications.

^yRating scale 0 to 8: set 8 = full crop, shape (8 = round), blush (8 = solid red).

^xFirmness: N = penetrometer reading in pounds force \times 4.44838.

diameter (in millimeters) was determined using a digital caliper. Measurements were taken at the widest point along the stem–blossom end axis at the suture and perpendicular to the suture. An average of these two measurements was calculated. Of this 10-fruit subsample, an average visual rating for fruit shape (0 to 8 scale, perfectly globose = 8) and percent red surface (blush, 0 to 8 scale, 8 = 100% red surface) was determined. Flesh firmness was determined midcheek on opposite sides of the fruit (perpendicular to the suture) using an Effigi penetrometer (model FT327; McCormick Fruit Tech., Yakima, WA) equipped with an 8-mm stone fruit tip. The two measurements were averaged and converted from pounds force (lbf) to Newtons (N) by the formula $N = \text{lbf} \times 4.44838$. Means and SEs presented in Table 1 were calculated from the yearly means in Microsoft Excel (Microsoft, Redmond, WA). Additional performance information, digital images, and notes for all selections and cultivars are available at the Clemson University peach evaluation web site (<http://www.clemson.edu/hort/peach/index.php?p=73>). ‘Scarletprince’

and ‘Julyprince’ have performed well in South Carolina (Table 1). Cropping and red blush have been excellent at Monetta (Fig. 2). Although ‘Bounty’ has had larger fruit size, it has not cropped adequately and lacks red color. Set has also been excellent at Cowpens, a slightly higher chilling locale. Grower reaction to the initial commercial crops has been especially favorable for ‘Julyprince’ as a result of its productivity.

Trees of these cultivars are available from commercial nurseries that supply the southeastern peach industry (primarily in Tennessee). There are no restrictions on the propagation or sale of such trees. The ARS-USDA has no trees of ‘Scarletprince’ or ‘Julyprince’ for distribution. Clonal material of this release has been deposited in the NRSP5/IR-2 Fruit Tree Collection (NRSP5/IR-2, IAREC, Washington State University, Prosser, WA 99350) where it will be available as virus-indexed budwood for research purposes, including development and commercialization of new varieties. Budwood requests from foreign countries must include proper import permits. Limited amounts of

budwood are available from W.R. Okie, ARS-USDA, Southeastern Fruit and Tree Nut Research Laboratory, 21 Dunbar Road, Byron, GA 31008. It is requested that appropriate recognition be given when this germplasm contributes to the development of a new breeding line or cultivar.

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