‘TH-917’ Southern Highbush Blueberry Miss Jackie™

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Southern highbush blueberries (interspecific hybrids containing mostly *Vaccinium corymbosum* L.) continue to gain a significant share of the production acreage of commercial blueberries in Georgia. A major reason for the interest in the species has been that berries ripen during the months of April and May instead of June like most of the rabbiteye (*Vaccinium ashei* Reade) grown in the state. Recent, University of Georgia (UGA) cultivars Rebel (USPP 18138), Suziblue (USPP 21167), and Georgia Dawn™ (USPP 24696) were released for the early market window (NeSmith, 2008, 2010, 2014). However, there is a bit of a production gap between these earlier southern highbush and the rabbiteye cultivars. In 2007, ‘Camellia’ (USPP 18151) was released as a later-season southern highbush (NeSmith and Draper, 2007), and it has gained considerable interest to fill the production gap; but, additional late-season southern highbush blueberry cultivars are desired.

‘TH-917’ (USPPAF) southern highbush blueberry Miss Jackie™ has been released by the UGA College of Agricultural and Environmental Sciences along with the Georgia Agricultural Experiment Station as a later-season southern highbush. The new cultivar has good yield, along with good berry flavor, picking scar, and firmness. Miss Jackie™ flowers late also; therefore, frost/freeze protection measures are not typically necessary to achieve successful production as is often required for earlier flowering southern highbush cultivars.

Origin and Description

Miss Jackie™ was selected in 2005 at the Georgia Experiment Station in Griffin, GA, originating from a cross of TH-653 × ‘Millennia’ made in 2002. The maternal parent, TH-653, is a UGA breeding line derived from a cross of ‘Legacy’ × TH-454, whereas the paternal parent, Millennia, is a Florida-released cultivar (USPP 12816).

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Miss Jackie™ has been tested in plantings at UGA Blueberry Research Farms in Alapaha and Griffin, GA, since 2007.

Miss Jackie™ is being released for commercial usage. The new cultivar has an estimated chill requirement of 500 to 550 h (<7 °C) based on observations and comparisons with other cultivars. It is a late-season southern highbush with medium- to large-sized fruit (1.5 to 1.9 g/berry). Berries are medium to light blue in color and have a small, dry picking scar. Berry flavor is very good and firmness is good. Miss Jackie™ plants are moderately vigorous, and have an upright bush habit with a relatively narrow crown. Propagation is easily accomplished using either softwood cuttings or in vitro production.

Performance

Miss Jackie™ was established in selection blocks at the UGA Blueberry Research Farms in Alapaha and Griffin as multiple plants in 2007. Fruit and plant data averaged across several years from these two test sites for the new cultivar and for Star (Lyrene and Sherman, 2000; USPP 10675) and Camellia are presented in Tables 1 and 2. Miss Jackie™ flowered and ripened late, near the time of ‘Camellia’ at both locations, but was several days later than ‘Star’. Fruit ratings showed a good picking scar, berry firmness, and flavor for Miss Jackie™ comparable to the two cultivar standards. However, berry size ratings showed ‘Camellia’ with a larger berry. Plant vigor for Miss Jackie™ was equal to or better than ‘Star’, but less than ‘Camellia’. However, ‘Camellia’ has been almost too vigorous, especially in high-input systems where it can grow excessively with an unfavorable plant growth habit that leads to “legginess” and “floppiness.” Therefore, the more moderate plant vigor of Miss Jackie™ is more desirable.

Table 1. Five-year average ratings of some fruit and plant characteristics of Miss Jackie™ and southern highbush standard cultivars Star and Camellia (2009–13) in field test plots at Alapaha, GA. Rating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. A value of 6–7 is generally considered to be the minimum acceptable rating for a commercial cultivar. These plants were established in Fall 2007.

Berry and plant attributes ^z	Alapaha location		
	‘Star’	‘Camellia’	Miss Jackie™
Berry size	7.6 ± 0.2	8.9 ± 0.2	7.9 ± 0.3
Berry scar	7.0 ± 0.1	7.2 ± 0.2	7.5 ± 0.2
Berry color	7.1 ± 0.1	8.7 ± 0.2	7.6 ± 0.2
Berry firmness	7.2 ± 0.1	7.2 ± 0.1	7.8 ± 0.1
Berry flavor	7.0 ± 0.1	7.8 ± 0.1	7.5 ± 0.2
Cropping	4.7 ± 1.7	5.4 ± 0.3	5.9 ± 0.5
Plant vigor	6.3 ± 0.2	9.8 ± 0.2	8.5 ± 0.4
Date of 50% flowering	Mar. 3	Mar. 11	Mar. 10
Date of 50% ripening	May 8	May 15	May 17
Fruit development period (days)	66.3 ± 6.1	65.3 ± 4.9	67.0 ± 3.8

^zValues are means ± the SE with n = 5.

Table 2. Five-year average ratings of some fruit and plant characteristics of Miss Jackie™ and southern highbush standard cultivars Star and Camellia (2009–13) in field test plots at Griffin, GA. Rating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. A value of 6–7 is generally considered to be the minimum acceptable rating for a commercial cultivar. These plants were established in Fall 2007.

Berry and plant attributes ^z	Griffin location		
	‘Star’	‘Camellia’	Miss Jackie™
Berry size	7.4 ± 0.2	8.6 ± 0.2	7.5 ± 0.2
Berry scar	6.9 ± 0.1	7.0 ± 0.1	7.1 ± 0.1
Berry color	7.1 ± 0.1	7.9 ± 0.2	7.6 ± 0.2
Berry firmness	7.2 ± 0.1	7.2 ± 0.1	7.5 ± 0.3
Berry flavor	7.1 ± 0.1	7.4 ± 0.2	7.5 ± 0.3
Cropping	6.8 ± 1.1	7.9 ± 0.2	6.4 ± 0.4
Plant vigor	8.5 ± 0.3	9.8 ± 0.1	8.4 ± 0.3
Date of 50% flowering	Mar. 13	Mar. 25	Mar. 25
Date of 50% ripening	May 25	May 31	May 30
Fruit development period (days)	73.3 ± 10.4	67.3 ± 4.8	65 ± 1.9

^zValues are means ± the SE with n = 5.

Table 3. Three-year average ratings of some fruit and plant characteristics of Miss Jackie™ and southern highbush standard cultivars Star, Rebel, Suziblue, and Camellia (2014–16) in advanced selection field test plots at Alapaha, GA. Rating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. A value of 6–7 is generally considered to be the minimum acceptable rating for a commercial cultivar. These plants were established in Fall 2011.

Berry and plant attributes ^a	Alapaha advanced selection trial				
	‘Star’	‘Rebel’	‘Suziblue’	‘Camellia’	Miss Jackie™
Berry size	7.4 ± 0.2	7.2 ± 0.1	7.8 ± 0.2	8.6 ± 0.2	7.7 ± 0.1
Berry scar	7.0 ± 0.1	7.3 ± 0.1	7.4 ± 0.1	7.0 ± 0.1	7.5 ± 0.1
Berry color	7.0 ± 0.1	7.0 ± 0.1	7.0 ± 0.1	8.1 ± 0.1	7.5 ± 0.1
Berry firmness	7.1 ± 0.2	7.3 ± 0.2	7.5 ± 0.1	7.5 ± 0.1	7.5 ± 0.2
Berry flavor	7.0 ± 0.2	6.3 ± 0.2	7.2 ± 0.1	7.6 ± 0.2	7.8 ± 0.1
Cropping	5.5 ± 0.5	5.3 ± 1.0	6.7 ± 0.5	5.5 ± 0.2	7.0 ± 0.5
Plant vigor	7.6 ± 0.2	6.9 ± 0.2	8.0 ± 0.2	8.6 ± 0.2	7.5 ± 0.2
Date of 50% flowering	Mar. 6	Mar. 1	Mar. 1	Mar. 15	Mar. 17
Date of 50% ripening	May 7	May 1	May 7	May 16	May 19

^aValues are means ± the SE with n = 3.

Table 4. Yield and berry weight, firmness, and Brix for Star and Camellia cultivars and Miss Jackie™ grown in Griffin, GA, during 2010–13. These plants were established in Fall 2007.

Yr	‘Star’	‘Camellia’	Miss Jackie™
Yield (kg/plant) ^a			
2011	5.8 ± 1.6	4.4 ± 0.4	4.5 ± 0.3
2012	5.3 ± 1.0	4.8 ± 0.4	7.7 ± 0.5
2013	1.8 ± 0.3	7.2 ± 0.5	7.0 ± 0.4
Avg	4.3	5.5	6.5
Berry wt (g/berry) ^a			
2010	1.53 ± 0.09	2.94 ± 0.12	1.90 ± 0.10
2011	1.20 ± 0.04	1.97 ± 0.11	1.80 ± 0.08
2012	1.80 ± 0.07	1.60 ± 0.09	1.55 ± 0.05
2013	1.79 ± 0.06	2.56 ± 0.10	1.76 ± 0.03
Avg	1.58	2.28	1.75
Firmness (g/mm) ^a			
2010	196 ± 4	150 ± 2	165 ± 4
2011	206 ± 6	166 ± 3	173 ± 3
2012	190 ± 5	164 ± 4	168 ± 2
2013	191 ± 5	150 ± 2	166 ± 2
Avg	196	157	168
Brix (%) ^a			
2012	13.9 ± 0.6	14.5 ± 0.4	12.0 ± 0.3
2013	13.5 ± 0.5	13.3 ± 0.3	13.3 ± 0.7
Avg	13.7	13.9	12.7

^aValues are means ± the SE with n = 3.

^bValues are means ± the SE with n = 3 (each sample derived from 5 berry composite).

^cValues are means ± the SE with n = 3 (each sample derived from 25 berry average).

Fig. 1. Southern highbush blueberry ‘TH-917’ Miss Jackie™ fruit during ripening.

Table 3 depicts comparisons of Miss Jackie™ to several cultivars in a replicated advanced selection trial at Alapaha for the period from 2014 to 2016. There were two replications of 15 plants each in this trial that were established in 2011. Miss Jackie™ was the latest to flower and ripen among these cultivars on average over the 3-year period. Fruit attributes of size, scar, flavor, and firmness for the new cultivar were generally very good, and cropping was best for this cultivar overall.

Total yield per plant was determined for three single plant replicates via hand harvesting in selection test plots at Griffin in 2011–13 (Table 4). These data support that Miss Jackie™ is high yielding when compared with ‘Star’ and ‘Camellia’. A more detailed view of select berry attributes of size, firmness, and Brix, are also presented in Table 4 for a multiyear period. Miss Jackie™ berry size was typically less than ‘Camellia’ but similar to or greater than ‘Star’. Fruit firmness of the new cultivar was greater than ‘Camellia’, but less than ‘Star’, and Brix readings were variable among cultivars depending on the year.

In summary, Miss Jackie™ (Fig. 1) is a southern highbush blueberry with good berry quality with regard to size, firmness, picking scar, and flavor. The moderate degree of plant vigor, high yields, and a late-season ripening time, all add to the desirability of this new cultivar.

Availability

A patent application for Miss Jackie™ has been submitted (patenting as TH-917) and it is owned by the UGA Research Foundation. Propagation rights are controlled by UGA Research Foundation, Innovation Gateway, GSRC Boyd Building, Athens, GA 30602-7411 (<http://research.uga.edu/gateway/>).

Literature Cited

- Lyrene, P.M. and W.B. Sherman. 2000. ‘Star’ southern highbush blueberry. HortScience 35: 956–957.
- NeSmith, D.S. and A. Draper. 2007. Camellia southern highbush blueberry. J. Amer. Pomol. Soc. 61:34–37.
- NeSmith, D.S. 2008. ‘Rebel’ southern highbush blueberry. HortScience 43:1592–1593.
- NeSmith, D.S. 2010. ‘Suziblue’ southern highbush blueberry. HortScience 45:142–143.
- NeSmith, D.S. 2014. ‘TH-819’ southern highbush blueberry Georgia Dawn™. HortScience 49: 674–675.