'TH-819' Southern Highbush Blueberry Georgia Dawn™

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Southern highbush blueberries (*Vaccinium corymbosum* L.) continue to gain a significant share of the production acreage of commercial blueberries in Georgia. One of the major interests in the species is early-ripening berries, especially around 1 May or earlier. 'Star' (USPP 10675) has dominated the early market window as a result of its firm, early-ripening, flavorful berry (Lyrene and Sherman, 2000). In 2006, the University of Georgia (UGA) released 'Rebel' (USPP 18138), which quickly became popular because it is even earlier than 'Star' (NeSmith, 2008). Additional early-ripening blueberry cultivars are highly desired.

'TH-819' (USPPAF) southern highbush blueberry Georgia Dawn™ (Fig. 1) is being released by the UGA, College of Agricultural and Environmental Sciences along with the Georgia Agricultural Experiment Station. Georgia Dawn™ is a very early-season blueberry, having highly desirable flavor along with good berry scar, color, and firmness. The new cultivar flowers very early, and frost/freeze protection measures are highly recommended for successful production.

Origin and Description

In 2001, Georgia Dawn™ was designated as advanced seedling 01-28 in Griffin, GA, originating from a cross of 'Star' × 'Bladen' made in 1998 by D. Scott NeSmith (Lyrene and Sherman, 2000; Rooks et al., 1995). In 2003, it was designated 'TH-819' (USPPAF) and was propagated for additional testing. Georgia Dawn™ is being released for commercial use. The new cultivar has an estimated chill requirement of 300 h or less (less than 7 °C). It is a very early-season southern highbush with medium to medium-large size 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. Georgia Dawn™ plants are vigorous and have an upright bush

habit with a narrow crown. Propagation is easily accomplished using softwood cuttings; however, there have been some difficulties with in vitro propagation. Plants are self-fertile, but planting with other southern highbush blueberry cultivars for cross-pollination is recommended.

Performance

Georgia Dawn™ was established at the UGA Blueberry Research Farm in Alapaha, GA, and at a grower test site in Ware County, GA, as multiple plants in 2004. An additional

grower test site was established in 2007 in Bacon County, GA.

An outstanding feature of Georgia Dawn™ is early ripening fruit (Tables 1 through 3). In all tests in southern Georgia locations, Georgia Dawn™ averaged ripening 7 to 12 d earlier than 'Star' or 'Rebel' and ripened more than 2 weeks earlier than 'Emerald' (USPP 12165) (Lyrene, 2008). A more detailed view of ripening time is shown in the yearly data for the cultivars being compared at the Alapaha Research Farm location over a multiyear period (Table 4). In each year, Georgia Dawn™ consistently ripened earlier than any of the other three commercial cultivars. The data are estimates of 50% ripening time, and typically berries will begin ripening (10% ripe fruit) 7 to 10 d earlier than this. Thus, with Georgia Dawn™, there was harvestable fruit ready on the plants in some years by 15 Apr., which is very early ripening for southern Georgia.

As mentioned previously, the early-ripening berries of Georgia Dawn™ are coupled with an early flowering time as well. Data from the three trials indicated that the fruit development period of Georgia Dawn™, 'Rebel', and 'Star' is similar and that Georgia

Fig. 1. Southern highbush blueberry 'TH-819' Georgia Dawn™ fruit during ripening.

Table 1. Five-year average ratings of some fruit and plant characteristics of Georgia Dawn™ and standard southern highbush cultivars Emerald, Rebel, and Star (2006–11) in field test plots at Alapaha, GA.^z

Berry and plant attributes ^y	Cultivar			
	Georgia Dawn™	Emerald	Rebel	Star
Berry size	7.5 ± 0.2	8.6 ± 0.2	7.5 ± 0.2	7.7 ± 0.2
Berry scar	7.8 ± 0.2	7.8 ± 0.3	7.8 ± 0.2	7.5 ± 0.3
Berry color	7.7 ± 0.2	7.8 ± 0.3	7.2 ± 0.2	7.2 ± 0.1
Berry firmness	7.5 ± 0.2	7.3 ± 0.2	7.6 ± 0.2	7.2 ± 0.2
Berry flavor	8.1 ± 0.3	7.0 ± 0.2	6.9 ± 0.1	7.2 ± 0.2
Cropping	6.1 ± 1.4	5.1 ± 1.1	7.5 ± 1.7	6.0 ± 1.6
Plant vigor	8.7 ± 0.5	7.0 ± 0.3	7.7 ± 0.4	8.6 ± 0.4
Date of 50% flowering	21 Feb.	18 Feb.	3 Mar.	7 Mar.
Date of 50% ripening	24 Apr.	9 May	3 May	6 May
Fruit development period (days)	62 ± 2.0	80 ± 4.0	62 ± 2.0	62 ± 1.0

^zRating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. These plants were established in 2004. A severe freeze in 2007 limited evaluations for that year. This was not a freeze-protected site.

^yValues are means ± SE with n = 5.

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Table 2. Five-year average ratings of some fruit and plant characteristics of Georgia Dawn™ and standard southern highbush cultivars Emerald, Rebel, and Star (2005–10) in field test plots at a grower test site in Ware County, GA.^z

Berry and plant attributes ^y	Cultivar			
	Georgia Dawn™	Emerald	Rebel	Star
Berry size	7.6 ± 0.2	9.0 ± 0.3	8.3 ± 0.3	7.6 ± 0.2
Berry scar	7.3 ± 0.2	8.0 ± 0.2	8.4 ± 0.2	7.6 ± 0.3
Berry color	7.4 ± 0.2	8.0 ± 0.1	7.8 ± 0.1	7.2 ± 0.1
Berry firmness	7.5 ± 0.2	7.9 ± 0.1	8.1 ± 0.1	7.6 ± 0.3
Berry flavor	7.5 ± 0.3	7.2 ± 0.3	6.9 ± 0.1	7.4 ± 0.2
Cropping	5.3 ± 1.3	4.9 ± 1.3	6.7 ± 1.1	6.3 ± 0.6
Plant vigor	7.7 ± 0.1	8.9 ± 0.1	9.4 ± 0.3	8.1 ± 0.5
Date of 50% flowering	15 Feb.	8 Feb.	26 Feb.	1 Mar.
Date of 50% ripening	26 Apr.	8 May	2 May	7 May
Fruit development period (days)	72 ± 3.9	89 ± 4.0	66 ± 2.2	67 ± 2.7

^yRating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. These plants were established in 2004. A severe freeze in 2007 limited evaluations for that year. This was a freeze-protected site through overhead sprinklers most years.

^zValues are means ± SE with n = 5.

Table 3. Three-year average ratings of some fruit and plant characteristics of Georgia Dawn™ and standard southern highbush standard cultivars Emerald, Rebel, and Star (2009–11) in field test plots at a grower test site in Bacon County, GA.^z

Berry and plant attributes ^y	Cultivar			
	Georgia Dawn™	Emerald	Rebel	Star
Berry size	7.5 ± 0.1	8.7 ± 0.3	8.2 ± 0.2	7.8 ± 0.2
Berry scar	7.3 ± 0.1	7.2 ± 0.2	8.0 ± 0.1	7.2 ± 0.2
Berry color	7.5 ± 0.1	7.8 ± 0.6	7.4 ± 0.3	7.2 ± 0.2
Berry firmness	7.3 ± 0.1	7.5 ± 0.3	7.9 ± 0.3	7.5 ± 0.3
Berry flavor	7.7 ± 0.2	7.1 ± 0.4	6.8 ± 0.1	7.0 ± 0.1
Cropping	6.5 ± 0.7	6.3 ± 0.8	7.3 ± 0.4	6.0 ± 0.5
Plant vigor	9.3 ± 0.3	8.8 ± 0.6	9.6 ± 0.3	8.8 ± 0.2
Date of 50% flowering	7 Mar.	8 Mar.	12 Mar.	16 Mar.
Date of 50% ripening	29 Apr.	14 May	7 May	10 May
Fruit development period (days)	56 ± 2.0	68 ± 2.4	59 ± 1.8	57 ± 2.0

^yRating scales are based on a 1 to 10 score, with 1 being the least desirable and 10 being the most desirable. These plants were established in 2007. This was a freeze-protected site through overhead sprinklers each year.

^zValues are means ± SE with n = 3.

Table 4. Date of 50% ripening for Georgia Dawn™ and three standard southern highbush blueberry cultivars at the Alapaha Research Farm during 2006–11.^z

Yr	Cultivar			
	Georgia Dawn™	Emerald	Rebel	Star
		Date of 50% ripening		
2006	22 Apr.	3 May	1 May	3 May
2008	19 Apr.	8 May	29 Apr.	6 May
2009	23 Apr.	8 May	28 Apr.	1 May
2010	4 May	19 May	11 May	15 May
2011	24 Apr.	9 May	6 May	7 May
Average	24 Apr.	9 May	3 May	6 May

^zNote that a severe freeze in 2007 resulted in lost evaluations during that year.

Table 5. Berry weight, firmness, and Brix for Georgia Dawn™ and standard southern highbush blueberry cultivars grown in Griffin, GA, during 2013.^z

Cultivar ^y	Berry wt (g)	Berry firmness (g·mm ⁻¹)	Berry Brix (%)
Georgia Dawn™	1.73 ± 0.03	150.3 ± 3.3	13.7 ± 0.9
Rebel	2.52 ± 0.15	181.0 ± 2.9	11.0 ± 0.6
Star	1.79 ± 0.06	190.7 ± 4.7	13.5 ± 0.5

^yBerry weight and firmness were from 25-berry samples, and Brix was from 5 berry composite samples taken from three single-plant replicates. Firmness measurements were made using a FirmTech 2 device.

^zValues are means ± SE with n = 3.

Dawn™ simply starts flowering earlier. This early flowering can result in freeze/frost issues during many years in southern Georgia; therefore, it is recommended that Georgia Dawn™ be grown using freeze protection measures (i.e., overhead sprinkler frost protection) when possible. Early flowering has often caused problems with growers producing the variety ‘Emerald’. Growers particularly become frustrated with the fact that although ‘Emerald’ flowers early, it does not ripen early; thus, there is little reward for the risk of growing the cultivar. However, the early ripening of Georgia Dawn™ should offer growers a chance for higher market prices, thus a reward for the risk.

Along with very early-ripening fruit, Georgia Dawn™ has additional favorable attributes. In most evaluations, Georgia Dawn™ had the best flavor as compared with the other cultivars, especially to ‘Rebel’ (Table 5). ‘Rebel’ often has bland flavor, and Georgia Dawn™ offers an improvement. Georgia Dawn™ fruit size is similar to ‘Star’ in most years, although ‘Rebel’ berry size was larger. Georgia Dawn™ has a good fruit scar and good plant vigor. Firmness is less than ‘Star’ and ‘Rebel’ but is adequate.

Although yields were not obtained in the trials, cropping estimates (related to yield) were made each year for the various trial entries. Georgia Dawn™ cropping has been good, especially for an early-flowering cultivar. Note that plants at the Alapaha site were not frost-protected in any year, whereas the Ware County site was frost-protected in some years, and the Bacon County site was frost-protected each year. Georgia Dawn™ has demonstrated good flower bud production and fruit set, both contributing to reasonable yield potential.

Availability

Southern highbush blueberry ‘TH-819’ (USPPAF) Georgia Dawn™ is owned by the University of Georgia Research Foundation. Propagation rights controlled by the University of Georgia Research Foundation, Technology Commercialization Office, GSRC Boyd Building, Athens, GA 30602-7411 (<<http://www.ovpr.uga.edu/tco/>>).

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