

Blueberry Cultivar Development at The University of Georgia

A Progress Report for 2009

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The UGA Blueberry Cultivar Development Program generates and evaluates numerous selections of southern highbush and rabbiteye blueberries each year. Currently, the UGA Blueberry Research Farm near Alapaha is the primary field evaluation site for new selections and advanced selections. Griffin is the primary site for high density seedling nurseries and it is a duplicate test site for growing selections for initial testing. Starting in 2004, some on-farm sites were enlisted as advanced selection testing sites for blueberry. Having these multiple sites provides considerable climatic and edaphic variability which enhances the cultivar development process.

General Overview of 2009

The 2009 growing season at Alapaha was generally characterized by a fair to good crop across most cultivars and selections. The blueberry crop in Griffin was good in 2009. There were significant freezing temperatures at Alapaha and Griffin in 2009 (Table 1), some of which occurred during the flowering period of some selections. Chill hours (calculated from Oct. 1 thru Feb. 15) were 858 for Alapaha and 1167 for Griffin, which were above average for the two locations. Comprehensive flowering notes, cropping notes and fruit characteristic evaluations were taken for more than 400 selections of rabbiteye and southern highbush blueberries, as well as numerous cultivar standards at the test sites. Ratings were also made for some selections at on-farm test sites in 2009.

Table 1. Below freezing minimum temperatures for selected dates at Alapaha and Griffin Blueberry Research Farm sites during 2009.

Dates	Minimum Temperatures (F)	
	Alapaha	Griffin
Jan. 16-17	23.0	12.2
Jan. 21-22	19.2	15.3
Feb. 4-5	17.4	15.1
Feb. 21	23.4	24.4
Mar. 3	28.2	20.8

Overview of Blueberry Traits and Our Rating Scale

Many of the traits evaluated in the blueberry breeding program are qualitative and/or subjective, and we use a 1 to 10 scale for our ratings. In this system, typically a value of 1 is poor and least desirable, and a value of 10 is excellent and most desirable. A value of 6-7 on this scale is generally considered to be the minimum level for “commercial acceptability”. An exception is cropping score, which can be less than 6 in some years depending on weather, pollination, etc. For advanced selections, nearly all traits would be at the minimum value (6-7), therefore, there is not a wide range in values among entries in these final trials (i.e., those selections with values < 6 didn’t make it this far). Ratings are based on averaged or integrated values across several plants and berries, not just single berries. More specific information for the different traits is listed below.

Berry size – For berry size, large berries are typically desirable. There are occasions that small berries may be desired, but in general we select for large fruit. Our berry size scale does relate to a quantity in many regards. A value of 6 is given to berries that are 13 to 14 mm in diameter, a value of 7 is 15 to 16 mm, a value of 8 is 17 to 18 mm, a 9 is 20 to 21 mm, and a value of 10 is greater than 21 mm.

Berry scar – Berry scar refers to the region where the fruit is detached from the stem. The most desirable form of this trait is a very small scar that is completely dry. A value less than 6 is generally unacceptable commercially because the tearing and/or leakage would cause fruit storage problems. A value of 6 would be a scar with perhaps slight tearing on an occasional berry. A value of 7 would be a large scar, but would tend to be dry. The rest of the scale (8 to 10) basically accounts for a smaller and smaller scar.

Berry color – The “blue color” of blueberries actually is caused by the waxy bloom covering the fruit. Nearly all blueberries are midnight blue to black if this wax is removed. So, in essence the color scale we use is an indicator of waxy bloom on the fruit. The most desirable form of this trait is a high wax bloom that gives a sky blue appearance. In our scale, a value less than 6 is considered too dark (not waxy enough) for commercial acceptance. Going from 6 to 10 is basically increasing in intensity of light blue color.

Berry firmness – Firmness of blueberries is important for harvesting, handling, and storage of the fruit. If a berry is too soft, it will bruise during these processes and become unusable. Our fruit firmness rating is based on “feel” when rolling berries between the fingers, and somewhat on texture “crispness” when biting into the fruit. Rating values < 6 are considered too soft to be commercially viable. Going from a value of 6 to 10 is increasing in firmness. Very few berries are ever rated at 10 on this scale. Typically fruit that exceed a value of 8.5 could likely be machine harvested.

Berry flavor – Blueberry flavor is a blend of volatiles, acids and sugars that give various combinations of flavor. If berries are too acid, they are bitter and are not appealing to consumers. If both acidity and sugars are too low, berries can have too bland of a flavor and this is not appealing to consumers either. A flavor rating < 6 is not considered commercially suitable. Going from a rating of 6 to 10, flavor is becoming increasingly sweet, aromatic, and more pronounced.

Cropping – Cropping score is an integrated value of the “percent” crop a plant is carrying. It is related to yield somewhat, but is actually more a measure of fruit set. Thus, overall size of the canopy is not accounted for. You could have a small plant canopy with high fruit set, but overall yield would be low due to its size. Also, large berry size can increase yield if two selections have a similar crop load, but one has larger berry size. The 1 to 10 scale used is basically a percentage of crop that is set (i.e., 1 = 10%, 2=20%, etc.).

Plant Vigor – Rating of plant vigor integrates the overall robustness and durability of the plant itself (wood and vegetation). It does not reflect berry quality, although poor vigor plants can have very small berries, but not always. This is a 1 to 10 visual scale, with 1 being near death, and 10 being extremely healthy and vigorous.

Performance of Field Grown Southern Highbush Selections at Alapaha

The UGA Blueberry Breeding Program continues to aggressively generate and evaluate southern highbush plant material. Most southern highbush selections that existed at Alapaha prior to 1998 had very low vigor due to the lack of suitable highbush soil at the site, poor drainage, and absence of irrigation. Since 1998, southern highbush selections have been planted in raised beds, with irrigation and pine bark mulch. Performance ratings of several of these new selections grown at Alapaha under field conditions, along with some standard cultivars, are depicted in Table 2. These selections are all less than 7 years old.

Much of our effort with southern highbush has been aimed at developing selections that have suitable berry quality and have a high degree of plant vigor. We are making considerable advances toward these goals. In 2009, several selections had a plant vigor rating of 9.0 or higher (on a 1 to 10 scale). Notable selections with regards to plant vigor were TH-798, TH-819, TH-921, TH-923, TH-925, TH-928, TH-1003, 01-14, and 02-28. While some of these selections may not become cultivars, they will be used in our breeding program to enhance overall plant vigor of our southern highbush germplasm.

Early ripening fruit continues to appeal to many Georgia blueberry growers. The Florida release 'Star' is currently a prominent standard cultivar, and it had 50% ripe fruit by May 1 at Alapaha in 2009 under field conditions. 'Rebel' reached 50% ripe fruit by April 29. These field plants were not frost protected and the cropping scores reflected crop losses due to early season freezes during flowering for many of the earliest ripening selections. Two of the selections (TH-664 and TH-921) ripened earlier than 'Star', but still had reasonable cropping scores. There were four additional very early selections (TH-925, 00-17, 01-14, and 02-28) that ripened with or before 'Rebel'. A notable early selection was TH-819 that ripened nearly 1 week earlier than Rebel. This selection also has a good berry scar and flavor, and we have propagated it for final evaluation. The selection TH-664 was approved for release in 2009 as an early ripening southern highbush, since we have several years of information for it from Alapaha, Griffin, and some on-farm test sites.

The fruit development period (FDP) of blueberries, defined as the days from flowering to ripening, can be very important. A short FDP can result in later flowering, which helps to avoid pressure from freezing temperatures, while achieving early ripening dates which can bring higher market prices. In 2009 we could not get accurate ratings of flowering times for selections due to highly variable damage to flowers from spring freezes. Therefore, we could not estimate FDP for 2009. However, past performance at Alapaha has shown 'Rebel' has a FDP of around 63 days, 'Star' has a FDP of 67 days, and 'Emerald' has a FDP of 78 to 80 days. We have several selections that have demonstrated shortened FDP during past years' evaluations at Alapaha. For example, TH-647, TH-664, and TH-923 typically have a FDP of 50 to 54 days.

Berry size is important, and is especially attractive to hand-harvesters. Currently, 'Emerald' is the standard cultivar grown in Georgia with the largest berry size, although the recent UGA release 'Camellia' also has impressive berry size. Several selections grown under field conditions at Alapaha during 2009 had berry size similar to 'Emerald'. These included TH-895, TH-898, TH-920, TH-928, TH-929, and TH-1008. Most of these large fruited selections also had other desirable traits such as good firmness or flavor.

Table 2. Ratings of some fruit and plant characteristics of field grown southern highbush blueberry cultivars and selections from Alapaha during 2009.

Selection or Variety	Date of 50% Ripening	Berry Size	Berry Scar	Berry Color	Berry Firmness	Berry Flavor	Crop Load	Plant vigor
Camellia	May 7	9.5	7.0	9.0	7.5	8.0	6.0	10.0
Emerald	May 8	9.3	7.8	8.0	7.0	6.8	2.5	7.5
Palmetto	May 3	7.0	8.0	7.0	8.3	8.8	4.0	8.0
Rebel	April 29	8.0	8.0	7.0	8.0	6.8	2.5	9.5
Star	May 1	7.5	7.0	7.0	7.0	7.0	2.0	7.5
Suziblu	May 4	8.3	8.0	7.0	8.0	7.0	6.0	8.0
TH-647	May 8	7.5	7.0	7.5	8.0	9.5	7.5	8.5
TH-664	April 30	7.5	7.0	7.0	8.8	8.8	4.5	8.5
TH-798	May 8	7.5	8.0	8.0	7.0	7.5	7.5	9.5
TH-819	April 23	7.5	8.0	7.5	7.5	8.0	2.0	9.5
TH-895	May 8	9.0	7.0	8.5	7.0	7.0	6.0	8.0
TH-896	May 5	8.8	7.5	8.8	9.0	7.8	5.0	8.5
TH-898	May 7	9.0	7.5	8.5	7.3	8.0	5.0	8.5
TH-904	May 3	8.5	8.5	8.5	9.0	9.0	6.0	8.3
TH-920	May 6	9.5	8.0	9.5	7.5	8.0	6.0	8.5
TH-921	April 30	8.5	9.0	8.0	7.5	8.8	5.0	10.0
TH-923	May 2	8.8	8.5	8.5	7.0	9.3	5.0	9.8
TH-925	April 27	8.8	8.5	8.0	8.0	9.0	2.0	9.0
TH-928	May 6	9.5	7.5	8.5	8.8	7.5	4.0	9.0
TH-929	May 7	9.0	7.5	8.8	8.0	7.0	4.5	8.5
TH-938	May 3	8.0	8.0	8.0	7.5	8.5	3.5	7.5
TH-982	May 3	7.5	7.5	7.5	7.0	8.8	5.0	8.5
TH-1003	May 2	7.8	7.0	7.0	8.8	9.0	6.0	10.0
TH-1008	May 14	9.5	8.0	8.8	7.5	7.8	6.0	8.5
00-17	April 28	8.5	8.0	7.0	8.5	8.0	2.5	8.0
01-14	April 26	8.3	7.5	8.0	9.3	9.3	3.5	9.5
02-28	April 30	8.8	8.0	7.0	9.0	8.0	1.0	9.5

Performance of Field Grown Southern Highbush Selections at Griffin

All of the southern highbush plants growing in Griffin are 6 years old or less. While the test site is not considered very suitable for southern highbush production, we have been able to grow many of our selections in the red Piedmont soil with pine bark mulch and irrigation. Table 3 lists data for several of the highbush selections in Griffin. Most of these were evaluated at Alapaha as well. Selections that demonstrated outstanding plant vigor at the Griffin site included TH-921, TH-925, TH-1003, and 02-28. Interestingly, these also had very good plant vigor at Alapaha. 'Camellia', a recent UGA release, also had very good plant vigor in Griffin as it did at Alapaha. Early season freezes prevented the collection of flowering time data at Griffin in 2009.

Berry size of 'Emerald' and 'Camellia' were largest among the standard cultivars in Griffin during 2009. Several newer selections also had very large berry size. These included TH-681, TH-921, TH-923, TH-928, TH-929, and TH-1008. Five of these (TH-921, TH-923, TH-928, TH-929, TH-1008) also had very large berry size in the test plots at Alapaha. These large fruited selections will be used in the breeding program for improving overall berry size and quality of the germplasm.

In Griffin during 2009, berry firmness was measured for several southern highbush selections using a FirmTech II firmness tester. This instrument basically records the force (g) required to deflect or compress berries a certain amount (measured in mm). The higher the units (g/mm), the more firm berries are. The standard instrument settings were 50 g minimum and 250 g maximum force. Table 4 depicts firmness values at harvest for several cultivars and selections, along with average berry weights of samples. The selections TH-663, TH-664, and TH-921 had firmness values of 200 or greater which is considered very firm. The new release Suziblue had very firm berries that were also quite large (2.48 g/berry). TH-664 may have potential for mechanical harvesting for fresh fruit, and the flavor is outstanding. This selection was approved for release in 2009.

While flavor is very subjective, we are trying to consider this more in our evaluations. 'Palmetto' has become the flavor standard in our program. The selections TH-664, TH-921, TH-923, TH-938, TH-982, and TH-1003 were all rated to have very good flavor in Griffin. This added benefit could make these selections desirable as cultivars if they hold up to continued testing.

Table 3. Ratings of some fruit and plant characteristics of field grown southern highbush blueberry cultivars and selections from Griffin during 2009.

Selection or Variety	Date of 50% Ripening	Berry Size	Berry Scar	Berry Color	Berry Firmness	Berry Flavor	Crop Load	Plant vigor
Camellia	May 26	9.0	6.8	7.0	6.8	7.0	8.5	10.0
Emerald	May 23	9.0	7.5	7.5	8.0	7.3	2.0	7.3
Palmetto	May 16	7.5	7.5	7.0	7.5	8.5	5.5	8.5
Rebel	May 12	7.8	7.5	7.0	7.5	7.0	2.5	7.3
Star	May 16	7.8	6.8	7.0	7.0	7.0	4.0	7.5
Suziblu	May 12	8.5	8.5	7.0	8.0	8.0	5.0	8.0
TH-664	May 11	7.3	8.0	7.5	8.8	9.0	7.0	6.0
TH-681	May 29	9.0	7.0	8.5	7.0	8.0	8.0	8.0
TH-798	May 26	7.3	7.0	7.5	7.0	7.5	7.5	7.0
TH-895	June 7	8.0	8.0	8.3	7.0	8.0	6.0	7.5
TH-896	May 27	8.5	7.0	7.5	8.8	7.8	5.0	7.5
TH-898	May 29	8.3	7.5	8.8	7.5	7.8	6.0	8.0
TH-904	May 27	8.2	7.3	7.0	7.3	7.8	6.0	6.5
TH-920	May 24	8.0	7.5	9.0	7.0	8.0	6.0	8.0
TH-921	May 18	8.8	7.5	8.0	8.5	8.5	6.0	9.5
TH-923	May 24	9.0	7.3	8.0	7.0	9.0	2.5	8.0
TH-925	May 18	8.5	7.5	8.0	8.0	8.0	4.5	9.5
TH-928	May 24	8.8	7.5	8.0	7.8	7.8	5.0	7.5
TH-929	May 23	9.2	7.0	8.0	7.5	7.8	5.0	8.5
TH-938	May 17	8.3	8.0	7.5	8.5	8.5	4.0	8.0
TH-982	May 20	7.5	8.5	7.5	8.0	8.8	5.0	8.0
TH-1003	May 17	7.3	7.5	7.0	9.0	8.5	2.0	9.0
TH-1008	May 22	9.3	8.0	8.5	7.5	7.0	4.0	7.0
00-17	May 14	7.8	8.8	7.0	8.5	8.0	4.0	6.8
02-28	May 13	8.5	8.5	7.0	8.0	8.3	1.5	9.5

Table 4. Berry weight and firmness at harvest for several southern highbush blueberry cultivars and selections grown in Griffin, GA during 2009. Firmness was measured using a FirmTech II device.

Selection or cultivar	Berry weight (g)	Berry firmness (g/mm)
O'Neal	2.12	157
Rebel	2.52	178
Star	2.28	187
Suziblue	2.48	220
TH-663	1.92	208
TH-664	1.52	200
TH-921	2.20	212

Performance of Rabbiteye Selections at Alapaha

Detailed data on plant and berry attributes were collected for various rabbiteye selections grown under field conditions in 2009 at Alapaha. There was some damage from frost to some of the earlier flowering selections. Table 5 depicts data for some of the more promising selections along with observations for some cultivar standards. We continue to be interested in early ripening rabbiteye selections in the ‘Climax’ and ‘Premier’ ripening window (or earlier). ‘Climax’ and ‘Premier’ had 50% ripening by June 4 this year. ‘Alapaha’ (UGA 2001 release) ripened May 31. ‘Alapaha’ fruit tend to be smaller than we would like, but ripening is concentrated, and yields continue to be good. ‘Alapaha’ fruit was reported to hold up well during the heavy rains we had in June this year, so that would be another noteworthy consideration for the variety. ‘Vernon’ (UGA 2004 release) was also 50% ripe by May 31, which was earlier than ‘Climax’ and ‘Premier’. ‘Vernon’ also had good berry size. We did see ‘Vernon’ flowering a little earlier than we would like this year, but it still made a good crop.

There were several 4 to 5 year old selections that had very early 50% ripe dates for rabbiteyes. These included T-743 (May 20), T-754 (May 21), T-761 (May 26), and T-786 (May 16). Some newer selections also had early ripening, and these included 03-06 (May 23), T-957 (May 22), T-959 (May 30), and T-965 (May 25). Some of these had light crops, but most had large to very large berry size which would be very favorable for hand-harvesting. Most notable was T-959, which continues to have the largest berries we have seen on a rabbiteye. Figures 1 and 2 show yields and berry size for some of

these selections from plants at the Alapaha Research Farm for 2009. These plants were only 3 years old (established Fall 2006), and several had impressive yields. We are rapidly advancing some of these selections for further trials.

Table 5. Ratings of some fruit and plant characteristics of field grown rabbiteye blueberry cultivars and selections from Alapaha during 2009.

Selection or Variety	Date of 50% Ripening	Berry Size	Berry Scar	Berry Color	Berry Firmness	Berry Flavor	Crop Load	Plant vigor
Alapaha	May 31	6.8	7.5	6.8	7.0	7.5	8.0	8.0
Brightwell	June 17	7.0	7.5	7.5	7.5	6.8	9.0	9.5
Climax	June 4	7.0	7.5	7.0	7.5	7.0	6.0	7.0
Ochlockonee	June 26	7.5	8.0	7.0	7.0	8.0	7.0	7.5
Powderblue	June 20	6.8	8.0	8.0	7.0	7.0	4.5	7.0
Premier	June 3	7.5	7.3	7.3	6.8	7.5	5.5	8.8
Vernon	May 31	7.8	8.0	7.0	7.5	7.3	6.0	9.5
T-743	May 20	8.0	7.5	7.5	8.0	7.5	6.0	10.0
T-754	May 21	8.5	8.0	8.0	7.5	8.0	3.0	9.0
T-759	June 5	8.0	8.0	7.0	7.0	8.0	6.0	10.0
T-760	June 8	7.8	7.5	7.0	8.0	7.5	9.0	10.0
T-761	May 26	7.8	7.5	8.3	7.8	8.0	3.5	10.0
T-786	May 16	7.8	7.5	7.5	8.0	8.8	5.0	8.5
T-851	June 6	8.0	8.3	8.3	8.0	8.5	5.0	9.5
T-957	May 22	8.5	7.8	8.0	8.0	8.0	5.0	8.0
T-959	May 30	9.5	8.0	7.5	8.5	7.0	7.0	10.0
T-965	May 25	9.0	7.8	7.5	8.0	8.0	6.0	9.0
T-968	June 7	8.8	7.5	8.0	7.0	7.5	8.0	8.0
T-1015	June 8	8.5	8.0	7.0	9.5	8.8	2.0	9.5
03-06	May 23	7.5	7.5	7.5	7.5	8.0	5.0	10.0

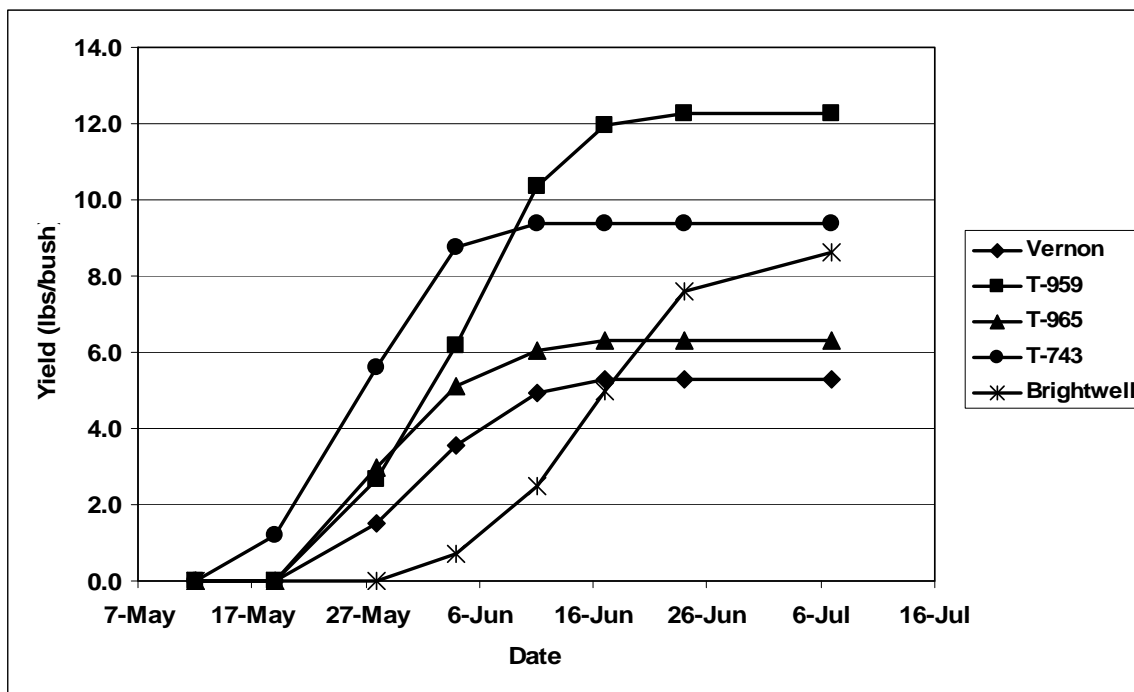


Figure 1 – Yield (lbs/bush) for some rabbiteye selections and standard cultivars taken at the Alapaha Blueberry Research Farm during 2009.

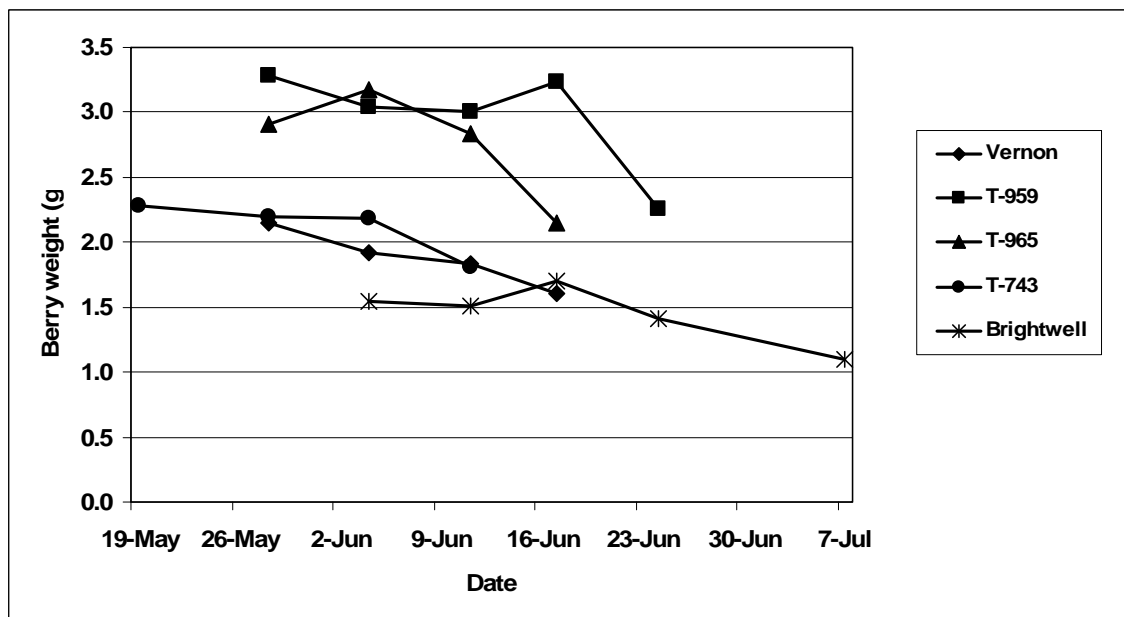


Figure 2 – Average berry weight (g/berry) for some rabbiteye selections and standard cultivars over various harvests taken at the Alapaha Blueberry Research Farm during 2009.

Performance of Rabbiteye Selections at Griffin

Many of the rabbiteye selections listed above for the Alapaha location also performed well at the Griffin test site in 2009 (Table 6). All plants at the Griffin test site are young (7 years old or less), and all plants are irrigated and mulched with bark. In Griffin, 'Climax' ripened on June 16 and 'Premier' ripened June 17 during 2009. Again, the UGA release 'Alapaha' performed well in comparison, as did 'Vernon'. Several older selections that ripened well before 'Climax' in Griffin were T-611, T-724, T-743, T-754, and T-786. Some 3 year old selections that ripened early included T-957, T-965, and 03-06. Most of these early selections had larger berry size than 'Climax'. We will continue to evaluate these selections at both Griffin and Alapaha, as well as at other locations.

For later season berries, Brightwell ripened in Griffin (50% ripe) on June 26, Powderblue on June 28, and Ochlockonee on July 2. The recent North Carolina release 'Columbus' ripened June 21, but the crop was light and berries had a bad scar this year. Some selections of interest in the later ripening time frame include T-619, T-760, and T-968. T-619 especially has intense light blue color and very good firmness. We have established advanced selection field trials with T-619 and hope to get more information in the next couple of years. It appears to be a bit slow to establish which may be a problem since we have several rabbiteye selections that have rapid establishment of highly vigorous plants (i.e., T-959).

As with the southern highbush in Griffin, we measured berry firmness and size for several rabbiteye selections and cultivar standards in 2009 (Table 7). Berry data were taken from random samples when at least 25% of fruit were ripe for each selection. The results show most rabbiteye are firm (180-200 g/mm), although, we have several selections that are very firm (> 200 g/mm). Increased firmness increases the likelihood that selections could be harvested mechanically, and firmer berries tend to hold up better during packing and shipping operations. In addition to firmness improvements, we are also making considerable progress in developing larger size in the rabbiteye berries, with many selections exceeding 2 g/berry in weight. T-965 and T-959 have the largest rabbiteye berry sizes we have observed, as both of these exceed 3 g/berry. This large berry size can improve hand harvesting efficiency, and may have increased consumer appeal in select markets. We are continuing trials with these selections, and are incorporating the larger fruited germplasm into our breeding efforts.

Table 6. Ratings of some fruit and plant characteristics of field grown rabbiteye blueberry cultivars and selections from Griffin during 2009.

Selection or Variety	Date of 50% Ripening	Berry Size	Berry Scar	Berry Color	Berry Firmness	Berry Flavor	Crop Load	Plant vigor
Alapaha	June 14	7.0	7.0	7.0	7.0	8.0	5.0	8.5
Brightwell	June 26	6.8	7.5	7.8	8.0	7.0	7.5	8.0
Climax	June 16	7.0	7.0	7.0	8.0	7.5	6.0	7.5
Columbus	June 21	8.5	6.5	8.0	7.0	7.0	2.0	7.0
Ochlockonee	July 2	7.5	7.5	7.0	7.5	8.0	6.0	9.0
Powderblue	June 28	6.5	7.0	8.5	6.5	7.0	6.0	7.5
Premier	June 17	7.8	7.0	6.8	6.8	7.5	4.0	6.5
Vernon	June 12	7.8	7.5	7.0	7.5	8.0	4.0	8.0
T-611	June 8	7.5	7.8	7.5	7.0	7.8	5.0	8.0
T-619	June 24	8.8	8.5	10.0	9.0	7.5	8.0	8.0
T-724	June 10	7.5	7.8	7.5	8.0	7.5	6.0	8.0
T-743	June 6	7.8	8.0	8.0	8.0	7.8	6.0	10.0
T-754	June 7	8.3	7.5	7.5	8.0	8.0	4.0	9.0
T-759	June 18	8.3	7.0	7.0	7.5	7.0	8.0	9.5
T-760	June 26	8.0	7.0	6.5	9.0	8.0	8.0	8.5
T-761	June 12	7.5	7.0	7.0	7.0	8.8	3.0	8.0
T-786	June 5	7.3	8.0	7.5	7.5	8.0	6.0	7.5
T-957	June 12	8.0	8.5	7.0	8.0	8.0	4.5	7.5
T-959	June 20	9.8	8.0	7.5	8.0	7.0	5.5	10.0
T-965	June 13	9.0	8.3	7.0	8.5	8.0	3.5	8.0
T-968	June 26	7.8	7.8	7.8	7.5	7.0	5.0	8.0
03-06	June 14	7.5	7.0	7.3	7.5	8.0	5.0	10.0

Table 7. Berry firmness and average berry weight of several rabbiteye blueberry selections from the Blueberry Cultivar Development Program at the Griffin, GA location during 2009.

Selection	Berry firmness (g/mm)	Average berry Weight (g)
Alapaha	193	1.80
Brightwell	216	1.56
Climax	200	1.72
Columbus	158	2.68
Premier	173	2.16
Powderblue	206	1.48
Ochlockonee	200	2.00
Vernon	192	2.28
T-619	262	2.48
T-724	172	1.80
T-743	198	2.56
T-754	180	2.39
T-759	188	2.44
T-760	231	2.24
T-761	203	2.36
T-957	192	2.40
T-959	212	4.14
T-965	200	3.20
T-968	220	2.60
03-06	195	1.96

Goals of The UGA Blueberry Cultivar Development Program for 2010

Plans for the year 2010 are to continue aggressively evaluating seedlings, advanced seedlings, selections, and advanced selections of both rabbiteye and southern highbush blueberries. Many new crosses of rabbiteye and southern highbush will be made during 2010. More than 2000 seedlings will be generated from crosses made in 2007-2009. These seedlings will be planted in a seedling nursery during the summer of 2010 to be grown for future evaluations. More than 2000 seedlings were planted in a nursery during 2008, and these seedlings will be screened during 2010 for fruit characteristics including size, scar, firmness, color, and flavor. The most promising seedlings will be identified as advanced seedlings and selections for further evaluation. In 2008, more than 100 new selections were made from seedlings of crosses made by the UGA program in the last 2 years. These were propagated, and multiple plants will be established at Alapaha and Griffin in 2010 for further evaluation. These new selections will be added to the more than 400 selections currently growing at these locations, and all will be evaluated during 2010 for possible designation as advanced selections.

In 2008 and 2009, several selections were identified as advanced selections and were propagated. These will be further evaluated in 2010 for potential as cultivars, and some of the advanced selections will be distributed to cooperators to assist in the final evaluation process. Several rabbiteye and southern highbush advanced selections were distributed to grower-cooperators in 2008 to begin the final phase of testing for their potential as cultivar releases. Data from these trials will be collected beginning in 2010 and will continue through 2015. Evaluations of these advanced selections will include fruit characteristics, plant growth characteristics, flowering times, and yields (when possible).

We established two special trials with advanced selections in 2007 and 2008. These included an early ripening rabbiteye advanced selection block and a mechanical harvested southern highbush advanced selection block. These are two high priority needs we recognize in the industry. The larger field plots planted with key selections will hopefully facilitate identification of cultivars to fill these needs.