

APPLICATION FOR APPROVAL OF CULTIVAR

D. Scott NeSmith, Dept. of Horticulture, Georgia Station, Griffin, GA 30223

1. **Crop:** Rabbiteye Blueberry (*Vaccinium ashei* Reade)
2. **Experimental no. or name:** T-584 *Vernon*
3. **Pedigree and history:** T-584 was selected in 1990 at the Coastal Plain Experiment Station in Tifton, Ga. from a cross of T-23 X T-260 made by Arlen Draper. A pedigree of the selection is depicted in Figure 1. The selection has been tested in a planting at Alapaha, Ga. since 1995. The selection was planted in other locations beginning in 2001.
4. **Description:** T-584 is an early season rabbiteye blueberry, having favorable fruit attributes, large berry size, good yields and excellent plant vigor. The selection likely has a chill hour requirement of 500 to 550 hours. Data describing these and other details follow in Tables.
5. **Station(s) where developed:** T-584 was developed primarily at the Coastal Plain Experiment Station, with some activity at the Georgia Station.
6. **Participating scientists:** Scientists participating in the development of this blueberry cultivar include D. Scott NeSmith, UGA; Arlen D. Draper, USDA-ARS retired; James M. Spiers, USDA-ARS Small Fruit Laboratory, Poplarville, MS.
7. **In what respect is the new cultivar superior to the cultivar now in use?:** Rabbiteye blueberries are the dominant species used by Georgia growers and many across the Southeast. Early rabbiteye cultivars are few, with Climax and Premier being the current industry standards. Climax yields have been highly unreliable, and Premier yields have been only moderate. Also, Climax is subject to spring freeze damage due to early blooming. Table 1 depicts yields over several years at Alapaha, GA for T-584, 'Climax', and 'Premier'. T-584 yielded more than 'Climax' in 4 out of 6 years, and more than 'Premier' in 2 out of 4 years.

Table 2 portrays average yields for T-584 and Climax at Griffin and Blairsville, Ga. during 2003 and 2004. T-584 yields equaled 'Climax' in Griffin both years, and was greater than 'Climax' in Blairsville. These yields were from plants established in 2001.

Flowering and ripening times are important data for growers who are considering producing rabbiteye blueberries. Generally, the early flowering times predispose

plants to frost damage, and in south Georgia plants that bloom after March 15 are desirable. Table 3 lists flowering and ripening dates for T-584 and 4 rabbiteye cultivars at Alapaha, Ga. over a 5 year period. T-584 flowering time was 10 days later than 'Climax' on average, and was 5 days later than 'Premier'. However, T-584 ripened at a similar time as both 'Premier' and 'Climax', but was considerably earlier than 'Brightwell' and 'Tifblue'. Thus, bloom time for T-584 is late enough to provide some protection from frost problems, and ripening time is early enough to receive higher early market prices.

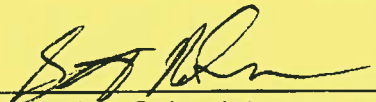
In addition to good yields and a favorable flowering time, T-584 plant vigor and berry characteristics have been equal to or greater than 'Climax' and 'Premier' over a 5 -year rating period at Alapaha, Ga. (Table 4). Berry size has been particularly favorable, which is desirable for growers. The larger berry size of T-584, especially as compared to 'Climax', more readily facilitates hand-picking, and produces a better fruit pack-out. T-584 is firmer than 'Premier' which is important for maintaining quality during harvesting and handling.

As for adaptability to other areas, T-584 seems to be as adaptable as 'Climax'. Table 5 depicts fruit and plant characteristics of T-584 and 'Climax' for 2 to 4 year-old plants at 2 locations in Georgia, one location in Mississippi, and one location in Arkansas during 2003. The two entries generally ripened at the same time, and had similar scar, color, firmness, and flavor. T-584 had larger berry size than 'Climax', and typically had a better vigor score also. Cropping of T-584 was greater than 'Climax' at two of the locations. Additional observations on farms in Baxley, GA, Waycross, GA, and White Lake, NC during 2004 indicated that T-584 was performing very well.

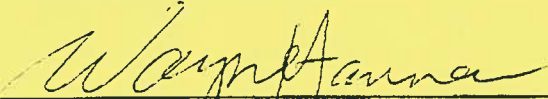
8. **Method of propagation:** Propagation of T-584 has been easily accomplished from softwood cuttings.
9. **Amount of breeder seed stocks available (if applicable):** NA
10. **Amount of foundation seed stocks available if applicable:** NA
11. **Amount of cutting or bud material available for vegetatively propagated material for nursery distribution (if applicable):** T-584 propagation material is currently available in limited quantities from stock plants at Alapaha and Griffin, Ga. Additionally, 3000 to 5000 rooted cuttings have been propagated during 2004 for distribution by GSDC.
12. **Is there likely to be unusual difficulty in the production of any class of seed stocks?** No.

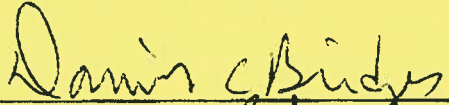
13. **Three suggested names for the cultivar: Proposed name: 1) *Vernon***
14. **Name approved by plant cultivar and germplasm release committee:**
15. **Form of intellectual property protection: Selection should be patented.**
16. **Is a royalty assessment recommended?: Yes No**

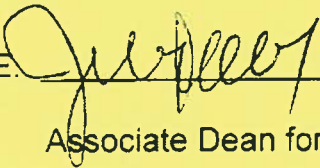
RECOMMENDED BY:

A. 
Originating Scientist

B.  8/5/07
Department Head

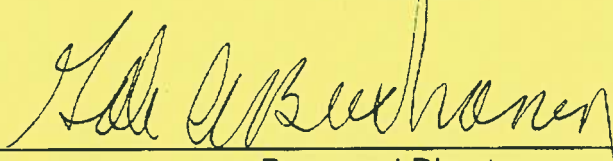
C. 
Chairperson, GAES Plant Cultivar and
Germplasm Release Committee

D.  11/2/07
Assistant Dean / Appropriate Station

E. 
Associate Dean for Research

F. _____

APPROVED:


Dean and Director
College of Agricultural and Environmental Sciences

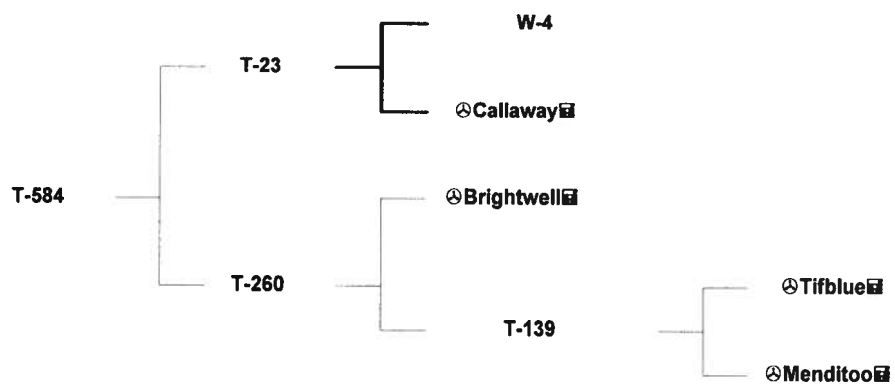


Figure 1. Pedigree of T-584 rabbiteye blueberry.

Table 1. Yield of the rabbiteye blueberry selection T-584 and the standard cultivars 'Climax' and 'Premier' during 1998 thru 2003 at Alapaha, Ga. Plants were established in 1992, and have been grown without mulch, bedding, or irrigation.

Year	Total yield per bush (lbs)		
	Climax	Premier	T-584
1998	6.6 a	8.0 a	7.4 a
1999	6.2 b	5.9 b	13.4 a
2000	11.2 a	11.7 a	14.0 a
2001	7.9 c	14.1 b	22.5 a
2002	5.2 b	---	13.0 a
2003	3.5 b	---	6.6 a
multi-year average	6.8 c	9.9 b	12.8 a

^{Y/} The same lower case letter indicates the yields were not significantly different at the 10% probability level.

Table 2. Yield of the rabbiteye blueberry selection T-584 and the standard cultivar 'Climax' during 2003 and 2004 at Griffin and Blairsville, Ga. Plants were established in 2001, and were grown with mulch and irrigation.

Location	2003		2004	
	Climax	T-584	Climax	T-584
	Total yield per bush (lbs)			
Griffin	2.7 a	2.6 a	9.5 a	11.9 a
Blairsville	2.5 b	5.8 a	5.1 b	15.8 a

^{Y/} The same lower case letter indicates yield was not significantly different at the 10% probability level between cultivars for a given year.

Table 3. Average flowering and ripening date of T-584 and four rabbiteye blueberry standard cultivars over a 5 year period at Alapaha, Ga.

Year	Cultivar				
	T-584	Climax	Premier	Brightwell	Tifblue
<i>Date of 50% flowering</i>					
1998	March 17	March 4	March 8	March 26	March 28
1999	March 20	March 16	March 25	March 29	March 30
2000	March 18	March 8	March 13	March 18	March 20
2001	March 6	March 1	March 3	March 5	March 11
2002	March 23	March 8	---	March 25	March 26
Average ^{Y/}	March 17 c	March 7 a	March 12 b	March 21 cd	March 23 d
<i>Date of 50% ripening</i>					
1998	June 4	June 2	June 4	June 20	June 26
1999	June 2	June 2	June 2	June 17	June 22
2000	June 1	May 31	June 2	June 11	June 18
2001	June 2	May 30	May 31	June 11	June 23
2002	May 24	May 25	---	June 11	June 19
Average	May 31 a	May 30 a	June 2 a	June 14 b	June 22 c

^{Y/} The same lower case letter indicates the flowering and ripening date across years were not significantly different at the 10% probability level.

Table 4. Ratings of berry and plant attributes of T-584, 'Climax', and 'Premier' rabbiteye blueberries. Data are averages for a 5 year period (1998-2002) from replicated plots at Alapaha, Ga. Berry size is actual weight of berries (g) at first harvest. Other ratings are on a scale of 1=poorest to 10=best, with a value of 6-7 generally considered "commercially acceptable". Plants of each blueberry line were established in 1992.

Berry/Plant attribute ^{Y/}	Selection		
	T-584	Climax	Premier
Berry size (g)	1.87 a	1.27 b	1.85 a
Berry scar	8.8 a	8.2 ab	8.0 b
Berry color	8.5 a	8.1 a	8.0 a
Berry firmness	8.5 a	8.3 a	7.4 b
Berry flavor	7.5 b	8.0 ab	8.3 a
Plant vigor ^{Z/}	8.5 a	8.3 a	8.8 a

^{Y/} The same lower case letter indicates the attribute was not significantly different at the 10% probability level.

^{Z/} Plant vigor is a relative scale (1 to 10) that considers overall robustness and durability of the plant itself (wood and vegetation). Vigor does not reflect berry quality, nor is it necessarily related to yield, especially annual yield.

Table 5. Ratings of some fruit and plant characteristics of T-584 and the rabbiteye blueberry standard 'Climax' at four locations in 2003. Plantings were 2 to 4 years old and all were irrigated. Berry size is actual weight of berries (g) at first harvest. Scar, color, firmness, flavor, plant vigor, and cropping 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. Ripening information is estimates of actual dates.

Berry and plant attributes	Location ^{Y/}										Avg across locations	
	Blairsville, GA		Griffin, GA		McNeil, MS		Clarksville, AR		T-584			Climax
	T-584	Climax	T-584	Climax	T-584	Climax	T-584	Climax	T-584	Climax		
Berry size (g)	1.96 a	1.66 b	1.84 a	1.62 b	--	--	2.39 a	1.40 b	2.06	1.56		
Berry scar	8.5 a	8.5 a	8.0 a	8.0 a	8.0 a	8.0 a	8.0 a	8.0 a	8.1	8.1		
Berry color	8.5 a	8.0 a	7.5 a	7.5 a	8.0 a	8.0 a	7.0 b	8.0 a	7.8	7.9		
Berry firmness	8.0 a	8.5 a	8.0 a	8.0 a	8.0 a	7.7 a	8.0 a	8.0 a	8.0	8.0		
Berry flavor	8.0 a	8.0 a	7.5 a	7.5 a	8.7 a	7.7 a	8.3 a	7.0 b	8.1	7.6		
Plant vigor	9.0 a	8.5 a	8.5 a	7.5 b	8.7 a	8.0 b	8.0 a	5.7 b	8.6	7.4		
Cropping	6.5 a	5.5 b	4.0 a	4.0 a	7.3 a	7.3 a	7.3 a	6.3 b	6.3	5.8		
Ripening date (50%)	July 11 a	July 9 a	June 20 a	June 21 a	June 14 b	June 8 a	June 24 a	June 24 a	June 25	June 23		

^{Y/} The same lower case letter indicates the attribute was not significantly different at the 10% probability level.