

# **PUBLICATIONS**

## **1985**



# Horticultural Research, 1985--Overton

**Research Center**

<b>T</b> <b>ECHNICAL</b> <b>R</b> <b>REPORT</b>	<b>NO.</b>  <b>85-1</b>
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## BLUEBERRY VARIETY TRIALS, OVERTON - 1984

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Rabbiteye blueberries (Vaccinium ashei Reade), are being recognized as an important fruit crop for East Texas. Blueberry trials have been established to determine the adaptability and productivity of specific cultivars in this region. Data has been collected since 1975. Parameters evaluated have included determination of suitability for home and/or commercial production, berry quality, yield, bush vigor, and, for some varieties, adaptability, to mechanical harvest.

### VARIETY SELECTION

The following varieties have been evaluated as to their suitability for East Texas.

Delite plants are very upright and vigorous, but tend to have a thin leaf canopy. Berry production is heavy, with large round berries that have small, dry stem scars. Berries are light blue, but the red under color shows through when ripe. This variety accumulates acceptable sugar levels before reaching optimum color maturity. Mechanical harvesting should be delayed until a majority of the berries are ripe since both ripe and immature berries are easily dislodged from the plant.

Tifblue is a vigorous, upright, dense plant which suckers readily. The berries have a heavy waxy bloom making them appear light blue. Berries will turn blue before they fully mature. They should be harvested when all reddish color around the stem end has disappeared. Berries tend to cling to the plant until ripe facilitating both hand and mechanical harvesting.

Climax plants are upright and spreading. The fruit is medium size, medium-dark blue and has a small stem scar. The berries tend to ripen uniformly and the majority of the fruit can be harvested at one time. The concentrated ripening of this variety make it excellent for mechanical harvesting.

Briteblue plants are moderately vigorous and spreading. Berries are large, light blue due to heavy waxy bloom and have a dry stem

scar. Like Tifblue, they develop color before full maturity and should not be harvested too early.

Southland is a moderately vigorous, medium sized, mounding type bush with dense foliage. Berries are medium sized, light blue and must be fully ripe before harvesting. The skins tend to toughen late in the season.

Woodard plants are medium sized, moderately vigorous and spreading. Berries are medium blue, due to a light waxy bloom. The stem scar is large and shallow, however, this does not appear to be a major problem in shipping.

Bluebelle plants are moderately vigorous and upright. Berries are small and medium to dark blue with only a slight waxy bloom. Berries do not separate from the stems easily resulting in torn or wet stem scars. This variety does not mechanically harvest well because both ripe and immature fruit are removed and many stems must be removed.

Menditoo is a small spreading bush with sparse foliage and low vigor. Production tends to be low. The berries are dark, glossy, lacking a waxy bloom and are somewhat gritty. Menditoo should not be utilized in a commercial operation.

Garden Blue is poorly adapted to East Texas. Early evaluations showed good vigor and yield, however plants have steadily declined the past 5 years. The berries are small and medium blue. Garden Blue is not recommended for East Texas.

Bluegem is not adapted to East Texas.

#### YIELD AND HARVEST DATE

Delite and Tifblue have consistently produced outstanding yields of up to 24,736 and 20,163 lbs/ac, respectively (Table 1). Briteblue and Woodard have had the next highest production. Even though Woodard has fairly high production it should be limited to home or u-pick operations because of possible shipping problems due to the large stem scar.

Evaluation of varieties being mechanically harvested have shown that Climax produces yields equivalent to those of Tifblue and Delite in early production years (Table 2). Yields of Bluebelle are lowest. It does not appear to be well adapted to mechanical harvest.

Centurion, Powderblue, and Premier are relatively new releases from North Carolina. They were established in Overton in 1980, therefore, results are only preliminary (Table 3). Centurion and Powderblue appear to have higher yields during establishment years.

Climax ripens 2 weeks earlier than Tifblue and Delite which are mid-season berries. The average first harvest date for Climax has been June 15, with the earliest being June 8 and latest June 22. Premier closely follows Climax, but ripens before Woodard, which ripens one week later than Climax. Tifblue, Briteblue, Centurion, Powderblue, and Garden Blue ripen 1 week after Woodard. Delite closely follows Tifblue in the ripening season. Menditoo, Southland and Bluebelle are the latest ripening of the varieties.

#### FRUIT QUALITY

Delite has the largest fruit of the hand harvested varieties evaluated with an average of 284 berries per pound (Table 4), while Garden Blue has smallest berries, over one-third smaller than Delite. Although Garden Blue berries are smallest, they have the highest % soluble solids or sugars. Menditoo and Woodard also have high sugar content. Briteblue and Southland have lowest soluble solids with 11.3 and 11.2, respectively. Titratable acidity (an indication of tartness) from 0.77% in Delite berries to 0.46% in Garden Blue. Garden Blue with high soluble solids and low acidity tends to have a sweet, bland flavor.

Mechanically harvested blueberries tend to be riper, as indicated by higher soluble solids and lower acidity (Table 5), since harvest must be delayed until a majority of the fruit is mature. Tifblue and Delite have higher sugars and lower acids when mechanically harvested but fruit size is nearly the same. Climax and Powderblue have similar quality characteristics, as do Tifblue and Centurion. Bluebelle and Premier have lowest quality berries. However, this is the first year of production for Premier and further observation is needed.

Based on these evaluations of yield, berry quality and plant vigor, Delite, Tifblue, Briteblue and Climax are among the best varieties for East Texas. All of the berries that were mechanically harvested, except Bluebelle, were acceptable. Bluegem and Garden Blue were not adaptable to East Texas conditions.

Table 1. BLUEBERRY YIELD DATA AT OVERTON, 1975-1983.<sup>z</sup>

Variety	Yield (lbs/ac)									
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1983
Delite	154	1,125	8,953	11,649	13,454	12,410	15,341	24,680	24,736	
Tifblue	118	1,615	8,808	12,798	13,590	18,377	17,601	20,163	18,515	
Briteblue	106	1,271	7,066	11,738	11,594	14,270	14,470	14,489	18,731	
Garden Blue	363	2,468	6,872	6,818	7,033	8,712	6,493	5,505	6,212	
Menditoo	141	1,325	6,194	8,922	4,066	10,209	9,352	7,020	12,979	
Southland	125	1,506	5,959	8,967	8,054	8,671	8,072	8,080	14,658	
Woodard	83	2,069	5,323	10,860	10,414	10,640	11,843	12,544	13,423	
Bluegem	43	526	338	1,825	726	2	313	-	-	

<sup>z</sup>Planting established in 1973 and fruit were hand picked.

Table 2. BLUEBERRY MECHANICAL HARVEST YIELD DATA OF PLANTS ESTABLISHED IN 1978 AT OVERTON (1982-1984).

Variety	Yield (lbs/ac)		
	1982	1983	1984
Climax <sup>Z</sup>	4,673	6,126	10,151
Tifblue	3,986	6,059	12,078
Delite	2,543	4,103	8,832
Bluebell	1,117	3,589	7,276

<sup>Z</sup>Partially hand-picked due to early ripening.

Table 3. BLUEBERRY MECHANICAL HARVEST YIELD DATA OF PLANTS ESTABLISHED IN 1980 (1982-1984).

Variety	Yield (lbs/ac)		
	1982	1983	1984
Centurion	461	1,915	2,848
Powderblue	339	1,460	3,454
Premiere <sup>Z</sup>	-	-	1,257

<sup>Z</sup>Partially hand-picked due to early ripening.

Table 4. HAND HARVEST BLUEBERRY FRUIT QUALITY ( $\bar{x}$  OF ALL YEARS).

Variety	Berry size		Soluble solids (%)	Titratable acidity (%)
	berries/lb.	wt. (g)		
Delite	284	1.6	11.7	.77
Tifblue	378	1.2	11.9	.65
Briteblue	349	1.3	11.3	.69
Garden Blue	504	0.9	16.2	.46
Menditoo	349	1.3	13.6	.49
Southland	378	1.2	11.2	.72
Woodard	454	1.0	12.5	.63

Table 5. BLUEBERRY MECHANICAL HARVEST FRUIT QUALITY ( $\bar{x}$  OF ALL YEARS).

Variety	Berry size		Soluble solids (%)	Titratable acidity (%)
	berries/lb.	wt. (g)		
Climax	378	1.2	13.7	.45
Tifblue	349	1.3	12.7	.49
Delite	303	1.5	12.1	.54
Bluebelle	478	.95	14.2	.33
Centurion	349	1.3	12.5	.47
Powderblue	349	1.3	13.4	.45
Premier <sup>z</sup>	488	.93	13.7	.32

<sup>z</sup>1984 Data only.