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BLUEBERRY CULTIVAR TRIALS: NEW RELEASES FOR 1987

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The gene pool for blueberries is vast, with literally hundreds of Vaccinium species in the world. Three major species have been cultivated; the Northern lowbush V. angustifolium (2n), the Northern highbush V. corymbosum (4n), and the rabbiteye blueberry V. ashei (6n). Of all major fruit crops in the world, rabbiteye are the most recently domesticated. Wild rabbiteye were first cultivated in Florida in 1893, and a breeding program was initiated in 1940. In contrast, there has been a breeding program for highbush blueberries since 1910.

The rabbiteye blueberry, although well adapted to the south, has one disadvantage to that of the highbush blueberry: late fruit maturity. For example, Texas rabbiteye fruit generally matures several weeks after highbush fruit in North Carolina and at the same time as highbush fruit in New Jersey. Fruit that is first on the market receives the premium price.

The blueberry research program at Overton is involved in two blueberry breeding/advanced selection projects. The first is a cooperative project with the USDA which is specifically designed to breed early ripening blueberries for Texas. The second is the Southern Region Advanced Selection Trials. This trial evaluates advanced selections from other state's breeding programs.

The USDA breeding lines look extremely promising, but we are still several years away from possible releases. However, the exciting news is that there will be six 1987 releases from other states. Most of these have performed well at Overton over the last three years compared to the standard rabbiteye cultivars. The outstanding features about these releases are their early to middle May ripening periods.

All six of these releases are low chilling tetraploid hybrids adapted to the Southern U.S. environment obtained from crosses of Vaccinium darrowi (wild diploid Florida evergreen blueberry) and Vaccinium corymbosum (the Northern tetraploid highbush blueberry). Three of them originate from the joint North Carolina-USDA breeding

program and are named 'Blue Ridge', 'Cape Fear', 'O'Neal'. One of them is from the joint Tifton, Georgia-USDA breeding program and is named 'Georgia-Gem'. The two from the USDA Small Fruit Research Station in Mississippi are named 'Cooper' and 'Gulf Coast'.

Fruit ripening and fruit quality and plant performance evaluations of these selections are listed in Table 1. Compared to the four rabbiteye varieties planted in the same planting, these selections have several advantages. Although the early bloom date might predispose 'O'Neal' to some frost damage, it appears to have the most potential. It has excellent fruit quality, extremely early ripening and good plant vigor. The next release to ripen is 'Georgia Gem' which looks good in several plantings across the South (Arkansas, Mississippi, Georgia) but lacks vigor at the Overton site. The yields have been acceptable, however fruit size and quality are less than the other releases. Dr. Austin from Tifton, Georgia is very optimistic about 'Georgia Gem' in Georgia. 'Blue Ridge' and 'Cape Fear' both ripen in mid-May and appear to have good potential in Texas. 'Blue Ridge' is the most vigorous and highest yielding of the two, however fruit size is small. 'Cape Fear' has large fruit size, but only moderate vigor and fruit quality. Plants of 'Cooper' and 'Gulf Coast' were not included in this comparison planting. Data from the few plants that we have at Overton indicate that they may have a problem with a lack of vigor, similar to 'Georgia Gem'. Sufficient data should be available by the time they will be sold by nurseries.

A few notes of caution for these releases should be considered. First, they all may have susceptibility to blueberry stem canker. This disease is currently not a problem in Texas, but may develop into a problem in plantings of these cultivars in Texas. Second, plants will be unavailable to growers until plant numbers are increased by nurseries (1988-1989). Plant costs may be higher than that of rabbiteyes. Third, adaptability of the fruit from these lines to machine harvest has not yet been evaluated. Several of the lines should only be harvested by hand. If the extremely high fruit prices for early May fruit on New York markets are sought, the demand of quality almost dictates that all fruit should be carefully hand picked.

New and expanding growers should make plans to plant on a trial basis many of these new releases. The early maturity of these releases in Texas is exciting news to anyone in the blueberry business.

Table 1. 1986 Performance Evaluations of Several Southern Region Advanced Blueberry Selections at Overton, Texas (1984 Planting).

Line	Full Bloom	First Ripe	50% Ripe	Yield Rating*	Plant Height (cm)	Fruit Weight (g)	Fruit Quality	Comments
Tifblue	3/23	6/2	6/10	2.0	86	1.5	Good	Small fruit
Climax	3/16	5/20	6/1	2.2	56	2.4	Acceptable	Gritty
Brightwell	3/20	5/23	6/8	2.0	57	2.1	Acceptable	Gritty
Baldwin	3/20	6/9	6/25	2.7	56	2.4	Acceptable	Poor ripening uniformity
Blue Ridge	4/1	5/6	5/16	3.0	92	1.8	Good	Good vigor
O'Neal	3/11	4/26	5/6	2.7	88	2.6	Good	Excellent vigor & fruit quality
Cape Fear	3/15	5/9	5/16	2.0	57	2.5	Acceptable	Moderate vigor & fruit quality
Georgia Gem	3/20	5/9	5/13	2.5	44	1.7	Acceptable	Poor vigor
Gulf Coast**	3/20	5/9	5/14	2.0		1.7	Acceptable	Poor to moderate vigor
Cooper**	3/20	5/9	5/14	2.0		1.8	Acceptable	Poor to moderate vigor

*1 = Low, 4 = High

**Inadequate Overton data available for this cultivar.