

## South Centers

### PIKETON Location:

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## 2002 Blackberry Evaluation - First Year Results

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Five varieties of thornless blackberries, four varieties of thorny blackberries, and two wyeberries, were planted May 26, 2000 at the Van Meter farm (39o02ϕN, 83o02ϕW) in the Scioto River Valley. Soils at the site are predominantly Huntington silt loam. Average temperatures range between 32 to 75oC and relative humidity ranges between 79 to 93%. The mean annual rainfall is approximately 36 inches+8 inches, with about 40% of the precipitation falling between May and September. Drip irrigation was installed and is used to maintain adequate soil moisture. Thornless varieties selected were, Apache, Arapaho, Chester, Navaho, and Triple Crown and were planted on 5 foot spacing. The four thorny varieties selected were Chesapeake, Chickasaw, Kiowa, and Shawnee. Wyeberries were QDE-1 and QDE-2. Thorny varieties and wyeberries were planted on 3 foot spacing. Recommended pest control measures were followed to control weeds, insects, and disease.

Apache was released from the University of Arkansas in 1998 and is the most erect of the Arkansas thornless varieties. Arapaho was released from the University of Arkansas in 1993. Navaho is also a University of Arkansas variety, released in 1989 that is reported to have good shipping characteristics. All the Arkansas varieties appear to have similar winter hardiness. Chester, released in 1985 from Maryland, is a late season berry with good hardiness and resistance to caneblight (*Botryosphaeria dothidea*). Triple Crown was released by the USDA-ARS Beltsville program in 1996 and is vigorous with similar hardiness to Chester.

QDE-1 and QDE-2 are wyeberries, a blackberry X raspberry tetraploid, from 5-Aces breeding. They are reported to have a tayberry-like flavor. Hardiness is questionable, though the plants are vigorous. They have a trailing characteristic and trellising is required.

Chickasaw is a University of Arkansas variety released in 1998 meant to replace Shawnee, another University of Arkansas variety released in 1983. Chickasaw should be more disease resistant than Shawnee, and the fruit may have better shipping characteristics. Kiowa is another University of Arkansas release and appears to provide the largest fruit. Chesapeake (Pat. Pending 5-Aces Breeding) is reported to be hardy to 0°F.

The winters of 200 and 2001 were not particularly cold so cold hardiness is difficult to evaluate relative to a normal winter in southern Ohio. While it is too early to make any specific recommendations on variety selection, we provide the following information on the flowering characteristics and fruit characteristics that we observed from our first harvest.

Plant development was fairly consistent across plots within varieties except as noted in the following table. In four instances, Navaho and QDE-1 bloom, and Triple Crown, and Shawnee petal fall, three plots had similar characteristics and the fourth plot was ten to fourteen days different. In the fifth instance, Chickasaw petal fall, two plots were similar to each other, but ten days different from the other two. A range of three to five days is not of particular concern. These plots will be carefully observed in the future to see if the pattern continues.

**Table 1. Phenology of thornless and thorny blackberries and wyeberries (4 plots)**

	$\frac{1}{4}$ "- leaf	Pre-bloom <sup>1</sup>	Bloom <sup>2</sup>	Petal Fall <sup>3</sup>
<b><u>Thornless</u></b>				
Apache	April 5	May 7	May 15	June 4-7
Arapaho	April 5	May 7	May 14	June 4-7
Chester	April 5	May 14	May 28-30	June 18
Navaho	April 5	May 7	May 14-28+	June 7
Triple Crown	April 5	May 14	May 30	June 7-18++
<b><u>Thorny</u></b>				
Chesapeake	April 5	May 7	May 14	June 7
Chickasaw	April 5	April 29	May 7	May 28-June 7+++
Kiowa	April 5	May 7	May 14	June 7
Shawnee	April 5	April 29	May 7	May 28-June 7++++
<b><u>Wyeberry</u></b>				
QDE-1	April 5	May 7	May 14-28+++++	June 7
QDE-2	April 5	May 7	May 14	June 7

**1 - Flowers show white    2 - First flowers open    3 - Final petal fall**

+May 14, 14, 14, 28

++June 7, 18, 18, 18

+++May 28, 28, June 7, 7

++++May 28, 28, 28, June 7

+++++May 14, 14, 14, 28

Berry weights ranged from 0.6 to 23.6 grams (Table 2). The three newest thorny blackberries had an average weight that was higher than thornless blackberry average weight. The average weights of the wyeberries were within the range of the average weights of the thornless varieties. Shawnee had the lowest average weight.

**Table 2. Berry weights.**

<b>Thornless</b>	<b>Low</b>	<b>Mean</b>	<b>High</b>	<b>Thorny</b>	<b>Low</b>	<b>Mean</b>	<b>High</b>
<b>Apache</b>	1.7	7.6	16.9	<b>Chesapeake</b>	1.3	8.4	20.8
<b>Arapaho</b>	1.0	4.2	8.9	<b>Chickasaw</b>	1.6	8.1	23.0
<b>Chester</b>	1.3	5.1	13.3	<b>Kiowa</b>	0.6	9.9	23.6
<b>Navaho</b>	1.1	4.7	13.6	<b>QDE-1</b>	1.6	6.5	11.7
<b>Triple Crown</b>	1.6	7.0	15.0	<b>QDE-2</b>	2.3	6.5	12.8
				<b>Shawnee</b>	1.1	3.7	9.6

Average sugar content for all varieties was highly dependent on date and declined over the season. When sugar values for all thorny varieties are combined and sugar values for all thornless varieties are combined and compared, thornless varieties have higher sugar content.

Harvest of thornless varieties began with Arapaho, Navaho and Triple Crown on July 1. Apache and Chester harvest began July 10. Triple Crown ceased production on July 26. Final harvest of Arapaho, Apache, and Navaho was August 1. Final harvest of Chester was August 19.

Harvest of thorny varieties began on June 25<sup>th</sup> with Shawnee and QDE-1. Harvest of QDE-2 and Chesapeake began on June 27<sup>th</sup>, and harvest of Kiowa and Chickasaw began July 1<sup>st</sup>. Final harvest for all thorny blackberries and wyeberries was July 22<sup>nd</sup>.

Marketable fruit for thornless varieties was approximately 70-80% except for Apache (53%). Thorny marketable fruit was 60-75%.

This was the first year of harvest and certain varieties may take longer to establish and achieve the yield expected from a mature planting. However, based upon this past season we have provided an estimate of yield in pounds per foot of row.

