

Blackberry Cultivar Evaluation – Quicksand, KY 2002



Blackberry (*Rubus*), a native plant, grows well in Kentucky and new improved blackberry cultivars offer a chance for crop diversification and a high income per acre crop for Kentucky agricultural producers. Blackberries have multiple uses including fresh or processed consumption, wine production and medicinal purposes. *Rubus* has lower establishment and labor costs

than many horticultural enterprises. It is also important to note that blackberries have the potential to be grown on hilly land and strip mine sites and have a low erosion potential in conjunction with sod strips. With available mechanization, blackberries can be grown on a large scale and mechanically harvested or they may be grown on small scale and hand-harvested for local fresh markets.

Methods:

A thorny and thornless blackberry cultivar and advanced breeding selection trial was planted as a randomized complete block in May 2000 on raised beds. For the thorny cultivars, 6 plants/replication were planted two feet apart in the row. The thornless erect cultivars were planted with 4 plants/replication at a spacing of three feet in the row. Plants of a thornless semi-erect cultivar (Triple Crown) were planted 4 feet apart in the row with 3 plants per replication. All rows were spaced 14 feet apart. There were a total of five replications for all the cultivars and selections with a 3 foot space between replications. The blackberries received a single application of 50 lb actual N/A from ammonium nitrate in March of 2001 and in 2002. *Entries or selections preceded by an "A" and followed by a number are unreleased breeding selections, are not for sale, and are not available in commerce at the time of this testing and reporting.* The blackberries were observed

for vigor, winter/spring hardiness, disease problems, as well as fruit yield, berry size, fruit appearance, and firmness.

Results:

Many thorny and thornless blackberry cultivars have a tendency to de-harden and break dormancy early in Quicksand where 60-70 F in January and February are followed by 10-20 F in March and April. This weather pattern occurs at least once every four or five years and did so again in 2002. Thornless cultivars such as Hull and Triple Crown, while considered less hardy than thorny blackberries, do very well here under our growing conditions because they are slow to break bud and remain dormant later into the spring. The year 2002 was a year of warm sunny weather early and cold overcast weather late in the season. Table 1. shows the bloom development and the presence of floricanes injury in early May 2002. Canes showing injury at that time tended to die prior to harvest, reducing yield and berry quality. Once hot dry weather came in June and July a lot of floricanes were lost.

The three thorny blackberry cultivars tested are listed in Table 2. Kiowa produced the highest yield (7185 lb/ac) and had the least amount of visible cane injury. Unfortunately, Kiowa is very susceptible to a fungal disease called double blossom. In a warm humid climate it would be hard to raise Kiowa without having a good fungicide spray program. Kiowa also has a tendency to lay down on the job, this makes picking and mowing difficult. A-1854 had a tremendous fruit set but the injured floricanes in all 5 reps slowly went down hill resulting in a smaller berry size. Shawnee was also subject to cane injury and like Kiowa had problems with double blossom. In past trials at Quicksand Shawnee had problems with hardiness and disease and was included in this trial as a check for those problems.

The highest yielding thornless blackberry (Table 3.) was Triple Crown (7623 lb/ac). The three cultivars A-1857, Navaho and A-2049 all suffered severe floricanes injury and did not produce well. The fruit from Navaho were so small and dried they were not marketable. The numbered cultivars A-1689 and A-1905 appeared to suffer less cane injury and produced attractive fruit. The fruit quality of these two selections made them the "pickers choice" among all the blackberries harvested this past year. Additional tests are needed to determine the long term suitability of any blackberry cultivar to our climatic conditions and additional test are planned for 2003.

Table 1.	Blackberry Cultivar/Selection Bloom and Floricane Evaluation on 5/04/02		
Cultivar/Selection*	Percent full bloom	Floricane injury	Comments
A1963	0	injury	3/5 reps visible injury.
A1539	80	none	
A2049	48	injury	3/5 reps visible injury
A1857	37	injury	2/5 reps visible injury
A1854	98	injury	1/5 reps visible injury
A1960	15	injury	4/5 reps visible injury
A1689	1	slight injury	1/5 reps visible injury
A1905	6	none	
Navaho	1	severe injury	4/5 reps severe injury
Kiowa	5	none	
Shawnee	61	none	
Triple Crown	0	none	

* Entries or selections preceded by an "A" and followed by a number are unreleased breeding selections, and are not available in commerce at the time of this testing and reporting.

Table 2	2002 Thorny Blackberry Cultivar/Selection Evaluation-Quicksand								
Cultivar/Selection*	Harv. start¹	Harv. days²	Lb. fruit/ac	Fruit size (oz.)	Taste³	Appearance⁴	% SS5	Disease rating⁶	Remarks
Kiowa	6/27	40	7185 A	0.322	T	A+	8.0	2.4	Double Blossom
A-1854	6/18	35	4052 A	0.123	S,T	A	9.0	0.6	
Shawnee	6/20	36	4010 A	0.382	S	A	8.4	2.5	Double Blossom

LSD			3805	0.478					
-----	--	--	------	-------	--	--	--	--	--

* Entries or selections preceded by an "A" and followed by a number are unreleased breeding selections, and are not available in commerce at the time of this testing and reporting.

LSD5% Least significant difference at the 5 % level

¹ The first day of harvest for that cultivar.

² The number of days between first and last harvest for each cultivar.

³ Taste of fresh fruit, T=tart, S=sweet, B=bland

⁴ Appearance = A- below average, A=average, A+=above average.

⁵ %SS is the percent soluble solids of fresh berries

⁶ Disease ratings are on a 0 to 5 scale 0=no disease seen, 5=100% of plants have disease present

Table 3.		2002 Thornless Blackberry Cultivar Evaluation							
Cultivar/ Selection*	Harv. start ¹	Harv. days ²	Lb. fruit/ac	Fruit size (oz.)	Taste ³	Appearance ⁴	% SS5	Disease rating ⁶	Remarks
Triple Crown	7/06	28	7623 A	0.193 A	S	A	10.0	0	
A1689	6/30	37	4793 A	0.188 B	S	A	9.3	0	
A1905	6/24	41	3472 BC	0.183 C	S	A+	10.2	0	
A1963	6/26	33	2165 CD	0.178 D	S	A+	8.3	0	
A1960	6/23	40	2103 CD	0.166 E	S	A+	9.9	0	
A1539	6/19	43	1873 DE	0.164 E	T	A+	9.2	0	
A1857	6/20	26	801 DEF	0.134 F	ST	A	10.9	0	uneven druplets
Navaho	6/26	23	537 EF	0.010 H	ST	A-	8.8	0	uneven druplets

A2049	6/21	28	452 F	0.119 G	ST	A-	10.5	0	
LSD5%			1369	0.004					

* Entries or selections preceded by an "A" and followed by a number are unreleased breeding selections, and are not available in commerce at the time of this testing and reporting.

LSD5% Least significant difference at the 5 % level

¹ The first day of harvest for that cultivar.

² The number of days between first and last harvest for each cultivar.

³ Taste of fresh fruit, T=tart, S=sweet, B=bland

⁴ Appearance

⁵ % SS is the percent soluble solids of fresh berries

⁶ Disease ratings are on a 0 to 5 scale 0=no disease seen, 5=100% of plants have disease present.