

Small Fruit Cultivar Trial Results at Mountain Grove

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State Fruit Experiment Station

Planting Location

Missouri State University, State Fruit Experiment Station

Mountain Grove, Missouri

Latitude 37° 09" Longitude 92° 16"

Hardiness Zone 6 (-10 to 0°F)

Elevation 1450 feet



Soil Characteristics

Wilderness cherty silt loam

silt loam topsoil

silty clay loam subsoil

5 to 20% chert

fragipan horizon

organic matter 2.5 to 3%

5 to 9% slope

Establishment and Growth

Starting in 2009 with additions in 2010 and 2011

Blueray and Jersey planted in 2011 not reported on

Limited land preparation

- two seasons of cover cropping and incorporation before planting

- sulfur (blueberry) and fertilizer amendments prior to planting

 - pH initially 6.1 and lowered to 4.8 for blueberries; pH 6.7 for blackberries

- planted on flat ground with no bedding

- peat moss mixed in backfill soil at blueberry planting

Fertilization

- initial nitrogen application 40 lbs/A

- nitrogen raised to 80 lbs/A, fertigation implemented

- higher nitrogen rates used because of mulch

Shredded bark mulch used along plant rows

Drip irrigation lines along rows

Defruited for two growing seasons and selective fruit thinning in blueberries

Blackberry managed for summer crop

Blueberry	Highbush	Origin	Season	Berry Size	Nursery Availability
Arlen	Northern	North Carolina	Late	M	Yes
Aurora	Northern	Michigan	Late	M	Yes
Bluecrop	Northern	MD-USDA	Mid	M	Yes
Bluegold	Northern	NJ-USDA	Mid	M	Yes
Blueray	Northern	MD-USDA	Mid	L	Yes
Chandler	Northern	MD-USDA	Late	VL	Yes
Draper	Northern	Michigan	Mid	M	Yes
Duke	Northern	NJ-USDA	Early	M	Yes
Elliott	Northern	MD-USDA	Late	M	Yes
Hannah's Choice	Northern	NJ-USDA	Early	M	No
Jersey	Northern	MD-USDA	Late	S	Yes
Legacy	Northern	MD-USDA	Mid	M	Yes
Liberty	Northern	Michigan	Late	M	Yes
Nelson	Northern	NJ-USDA	Late	M	Yes
Rubel	Northern	Wild selection	Mid	S	Yes

Blackberry	Fruiting	Origin	Season	Thorns	Stature	Berry Size	Nursery Availability
Apache	Florricane	U of A	Mid	No	Erect	L	Yes
Arapaho	Florricane	U of A	Early	No	Erect	M	Yes
Chester	Florricane	SIU-USDA	Late	No	Semi-erect	M	Yes
Chickasaw	Florricane	U of A	Mid	Yes	Erect	L	Yes
Kiowa	Florricane	U of A	Mid	Yes	Erect	VL	Yes
Loch Ness	Florricane	SCRI-UK	Early	No	Semi-erect	M	Yes
Natchez	Florricane	U of A	Early	No	Semi-erect	L	Yes
Navaho	Florricane	U of A	Late	No	Erect	S	Yes
Ouachita	Florricane	U of A	Mid	No	Erect	M	Yes
Osage	Florricane	U of A	Mid	No	Erect	M	Yes
Prime-Ark 45	Primocane	U of A	Late	Yes	Erect	M	Yes
Prim-Jim	Primocane	U of A	Late	Yes	Semi-erect	M	Yes
Prim-Jan	Primocane	U of A	Late	Yes	Semi-erect	M	Yes
Triple Crown	Florricane	MD-USDA	Mid	No	Semi-erect	L	Yes

Blueberry Yield (lbs/plant)	2011	2012	2013	2014
Arlen ¹	1.2	2.1	5.1	6.3
Aurora ¹	2.2	3.3	8.5	9.2
Bluecrop ¹	1.3	2.8	4.0	6.8
Bluegold ¹	2.8	3.4	8.0	12.1
Chandler ²	0.5	0.1	5.6	8.5
Draper ¹	0.6	3.0	5.2	8.1
Duke ¹	0.6	1.9	4.5	4.3
Elliott ¹	1.3	4.8	8.0	6.6
Hannah's Choice ¹	0.6	3.2	3.9	5.4
Legacy ¹	2.0	4.5	8.5	9.2
Liberty ¹	2.4	4.1	9.1	11.0
Neslon ²	0.1	2.0	2.5	4.8
Rubel ¹	0.6	1.6	5.4	6.6

¹Planted 2009

²Planted 2010

Blueberry Yield (lbs/plant)	2011	2012	2013	2014
Arlen ¹	1.2	2.1	5.1	6.3
Aurora ¹	2.2	3.3	8.5	9.2
Bluecrop ¹	1.3	2.8	4.0	6.8
Bluegold ¹	2.8	3.4	8.0	12.1
Chandler ²	0.5	0.1	5.6	8.5
Draper ¹	0.6	3.0	5.2	8.1
Duke ¹	0.6	1.9	4.5	4.3
Elliott ¹	1.3	4.8	8.0	6.6
Hannah's Choice ¹	0.6	3.2	3.9	5.4
Legacy ¹	2.0	4.5	8.5	9.2
Liberty ¹	2.4	4.1	9.1	11.0
Neslon ²	0.1	2.0	2.5	4.8
Rubel ¹	0.6	1.6	5.4	6.6

¹Planted 2009

²Planted 2010

Blueberry Berry Weight (g)	2011	2012	2013	2014	Average
Arlen ¹	1.9	1.9	1.5	1.9	1.8
Aurora ¹	2.3	1.9	1.5	2.0	1.9
Bluecrop ¹	1.5	1.7	1.3	1.5	1.5
Bluegold ¹	1.4	1.2	1.4	1.2	1.3
Chandler ²	2.4	0.9	2.4	2.6	2.1
Draper ¹	2.0	1.3	1.5	1.7	1.6
Duke ¹	2.4	1.4	1.2	1.4	1.6
Elliott ¹	1.7	1.6	1.3	1.4	1.5
Hannah's Choice ¹	2.0	1.3	1.8	1.6	1.7
Legacy ¹	1.9	1.5	1.5	1.5	1.6
Liberty ¹	1.7	1.5	1.2	1.6	1.5
Neslon ²	2.4	2.3	1.6	2.2	2.1
Rubel ¹	0.9	1.2	0.9	0.8	1.0

¹Planted 2009

²Planted 2010

Blackberry Yield (lbs/plant)	2011	2012	2013	2014
Apache ¹	3.3	6.4	3.4	5.8
Arapaho ¹	0.3	3.0	4.2	2.4
Chester ¹	7.0	4.8	11.5	13.5
Chickasaw ²	0.6	5.2	1.7	3.1
Kiowa ²	2.7	6.1	3.5	10.5
Loch Ness ²	1.0	6.1	5.7	6.4
Natchez ¹	1.8	4.2	3.9	9.0
Navaho ¹	3.9	5.8	2.2	9.7
Ouachita ¹	2.0	7.9	2.1	5.7
Osage ²	0.8	5.7	2.8	6.8
Prim-Ark 45 ²	2.9	6.6	3.9	7.8
Prim-Jim ¹	2.4	2.4	1.8	2.1
Prim-Jan ¹	1.4	4.2	1.8	2.6
Triple Crown ¹	4.2	8.6	5.3	10.0

¹Planted 2009

²Planted 2010

Blackberry Yield (lbs/plant)	2011	2012	2013	2014
Apache ¹	3.3	6.4	3.4	5.8
Arapaho ¹	0.3	3.0	4.2	2.4
Chester ¹	7.0	4.8	11.5	13.5
Chickasaw ²	0.6	5.2	1.7	3.1
Kiowa ²	2.7	6.1	3.5	10.5
Loch Ness ²	1.0	6.1	5.7	6.4
Natchez ¹	1.8	4.2	3.9	9.0
Navaho ¹	3.9	5.8	2.2	9.7
Ouachita ¹	2.0	7.9	2.1	5.7
Osage ²	0.8	5.7	2.8	6.8
Prim-Ark 45 ²	2.9	6.6	3.9	7.8
Prim-Jim ¹	2.4	2.4	1.8	2.1
Prim-Jan ¹	1.4	4.2	1.8	2.6
Triple Crown ¹	4.2	8.6	5.3	10.0

¹Planted 2009

²Planted 2010

Blackberry Berry Weight (g)	2011	2012	2013	2014	Average
Apache ¹	7.2	6.3	7.1	6.7	6.8
Arapaho ¹	4.8	5.0	3.7	4.7	4.5
Chester ¹	5.2	5.1	4.8	4.4	4.9
Chickasaw ²	7.2	6.8	6.2	5.6	6.4
Kiowa ²	8.7	9.1	9.8	10.1	9.4
Loch Ness ²	5.9	4.5	4.6	4.2	4.8
Natchez ¹	9.3	7.1	6.8	8.0	7.8
Navaho ¹	4.4	4.3	4.9	3.7	4.3
Ouachita ¹	5.9	5.2	4.9	5.6	5.4
Osage ²	7.1	5.5	4.2	5.7	5.6
Prim-Ark 45 ²	6.1	6.2	5.2	5.9	5.8
Prim-Jim ¹	4.8	4.8	3.8	4.8	4.6
Prim-Jan ¹	6.4	5.0	3.6	4.0	4.7
Triple Crown ¹	7.2	6.6	7.1	6.6	6.9

¹Planted 2009

²Planted 2010

Nurseries

Blueberry

DeGrandchamp Farms

Fall Creek Farm & Nursery

Hartmann's Plant Company

Nourse Farms

Simmons Plant Farm

Blackberry

Cox Berry Farm & Nursery

Norcal Nursery

Nourse farms

Hartmann's Plant Company

Simmons Plant Farm

Preliminary Recommendations

Blueberry

- Aurora – late, moderate yield, medium to large berries, spreading habit
- Bluecrop – mid, moderate yield, medium berries, upright habit, cold hardy
- Bluegold – mid, high yield, small to medium berries, compact habit, cold hardy
- Chandler – late, moderate yield, large berries, upright habit, cold hardy
- Duke – early, low yield, medium berries, upright habit
- Draper – mid, moderate yield, medium berries, upright habit
- Legacy – mid, moderate yield, medium berries, upright habit, disease resistant
- Liberty – late, high yield, medium berries, upright habit

Blackberry

- Chester – late, high yield, small berries, semi-erect, thornless, cold hardy
- Kiowa – mid, high yield, large berries, erect, thorny
- Natchez – early, moderate yield, large berries, semi-erect, thornless
- Navaho – late, moderate yield, small berries, erect, thornless
- Triple Crown – mid, high yield, medium berries, semi-erect, thornless, less cold hardy

Blueberry	2000-2008 Ave. Yield (lbs)	2000-2006 Berry Wt. (g)
Bluecrop	7.3	1.6
Brigitta Blue	10.3	2.1
Chandler	8.4	3.0
Collins	4.2	1.5
Darrow	9.0	1.7
Duke	6.4	1.6
Legacy	9.7	1.9
Nelson	10.8	2.0
Nui	7.5	2.3
Ozarkblue	7.7	1.9
Reka	9.5	1.3
Sierra	5.5	1.7
Summit	5.5	1.9
Toro	5.1	1.8