

Blackberry Varieties for Tunnel Production in Northern Areas

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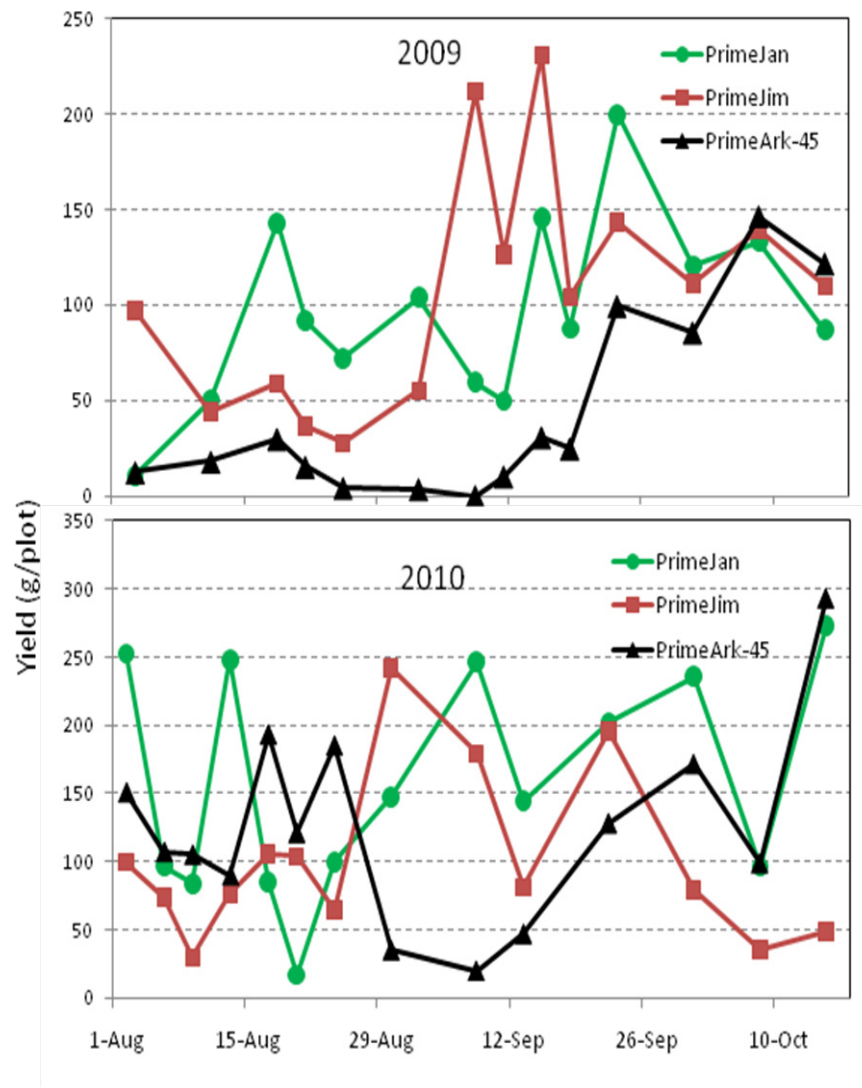
The humid summers and cold winters in the Eastern U.S. make production of bramble fruits challenging. The quality of these fruits is particularly affected by rain and humidity that promote fungal diseases. From 2005 to 2009, we grew summer and fall fruiting raspberry varieties under Haygrove high tunnels at the Southwest Michigan Research and Extension Center (SWMREC) in southwest Michigan and found that tunnels improved yields and berry quality sufficiently to pay back the cost of tunnels in two to three years. Tunnels also reduced Japanese beetle and potato leafhopper numbers and leaf spot and anthracnose infections, while two spotted spider mites were more numerous.

In this project, we studied tunnel production of fall fruiting blackberries (2007 planting of PrimeJan, PrimeJim, four selections from the Arkansas breeding program) and summer fruiting blackberries (Apache, Black Butte, Chester, Kiowa, Ouachita, Triple Crown) planted in 2008.

Primocane-fruiting blackberries have yielded very poorly. Yields in 2009 and 2010 (Table 1) were roughly equivalent to 1,000 to 3,000 lb per acre. As illustrated in the figure below, there has been no period of concentrated production. Berries ripened from early August through mid October. These primocane-fruiting types fruit on the ends of canes and branches. In order to stimulate lateral branching, we have tipped the canes that reach heights of 2-3 feet in June, and left later growing canes alone. At the end of the season in October, up to half of individual canes and lateral branch ends had not yet produced ripe fruit. The disease crown gall is also present in these plants and likely contributes to the yields. We also observed that earlier opening flowers often did not set fruit, and suspect that hot tunnel temperatures in August may inhibit pollination and fruit set. Fruit quality of the primocane-fruiting types has generally been good, though size has been modest.

Table 1. Primocane fruiting blackberry yields and berry weights under high tunnels, Benton Harbor, MI.

Variety	Yield (kg/plot)		Berry weight (g)	
	2009	2010	2009	2010
PrimeJim	1.3	1.5	5.3	4.7
PrimeJan	1.4	1.2	6.2	4.2
PrimeArk-45	0.7	1.3	8.7	6.5
AR-40	0.9	1.7	7.2	4.8
AR-41	0.8	1.2	7.4	5.1
AR-46	0.8	2.2	5.8	4.3



Summer fruiting blackberries were planted in April, 2008. We received poor quality plants of some varieties. Plants of Triple Crown, however, were strong and these plots established well. In 2009, Triple Crown was the only type that yielded significant amounts of fruit (equivalent to about 5,000 lb/acre). All varieties had filled their space in 2010 and yielded well. Triple Crown was again the most productive, followed by Chester and Ouachita. The largest fruited type was Black Butte. Black Butte is a West Coast variety that is very susceptible to cold injury, but because canes trail along the ground rather than grow upright, we included this variety to test whether canes could be protected from cold by covering them with row cover during the winter. We did not learn whether covers protected canes during 2008-09 or 2009-2010 winters because all plants (covered and not) were protected by snow during the coldest parts of the winter.

Florican-fruited blackberry yield and berry weights under high tunnels, Benton Harbor, MI, 2010.

Variety	Kg/plot	Lb/acre	g/berry
BI Butte	7.1	5,100	7.8
BI Butte covered	5.2	3,700	9.4
Chester	22.7	16,300	4.6
Ouachita	16.0	11,500	6.9
Triple Crown	38.5	27,700	7.8

Florican-fruited blackberry yields, Benton Harbor, 2010.

