

The Ohio State University

South Centers

PIKETON Location:

1864 Shyville Rd.

Pike ton, OH 45661

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Black Raspberry (*Rubus occidentalis*) Cultivar Study (Shawn R. Wright, Christie Welch, Lynn Miller and Richard C. Funt)

Introduction

Two varieties of black raspberry are commonly grown in Southern Ohio. [Bristol](#) {1934, NYFTA, Geneva, NY. (Watson Prolific x Honeysweet)} produces a fruit that is medium-large, firm, with good flavor and glossy skin. It is a good yielder and mildew tolerant, but susceptible to anthracnose. [Jewel](#) {1973, NYFTA, Geneva, NY. [(Bristol x Dundee) x Dundee]} produces fruit that are also large, firm, with good flavor and glossy skin. The plant is vigorous, erect, resistant to anthracnose, and widely adapted. The fruit ripens after Bristol, though both varieties are considered early season ripening in mid-June in Southern Ohio. Mac Black is another variety that growers have expressed an interest in because it will allow them to extend their picking season for approximately 10 days beyond what is possible with the early varieties. This study was planted to determine the relative yield and harvest season of Mac Black relative to Bristol and Jewel.

Growers often wonder if it is advantageous to harvest the “baby crop” the second year from planting or if it is better to allow the plants to establish themselves and begin harvesting the third year. We can’t say what the effect will be on the long-term health of the planting, but the following information on production should be useful.

Methods

Experimental design: Randomized Complete Block on raised beds

NORTH

	Guard Row			Guard Row		
6 plants/plot 30 inch spacing 15 foot plots 12 foot centers 3 feet between plots	Jewel	Mac Black	Mac Black	Bristol	Mac Black	Bristol
	Jewel	Jewel	Bristol	Mac Black	Jewel	Bristol
	Jewel	Bristol	Jewel	Jewel	Bristol	Bristol

Tissue cultured Bristol, Jewel, and Mac Black raspberries (*Rubus occidentalis* L.) obtained from Nourse Farm® were planted at the Ohio State University South Centers (Pike ton, OH) on June 15, 2001. Eight plants of one variety were randomly assigned to an individual plot. Final plot size of

raised bed plots was 0.5'x3'x15' (HxWxL) plot with a rounded crown. Initial plot preparation occurred on June 11, 2001 and included plowing, disking and rototilling the plot area to a depth of 10 inches. Composted yard waste was broadcast at a rate of 2 tons/acre on the entire plot and then disked to incorporate it. Fertilizer was broadcast using a Viacon spreader after mixing at the rate of 145 lbs/acre P₂O₅, 91 lbs/acre K₂O, 0.5 lbs/acre boron and 5 lbs/acre zinc as recommended following soil testing. Landscape fabric (tightly woven polypropylene 5 oz. fabric needle punched and UV stabilized, and 98.7% opaque to light purchased from A. M. Leonard) was applied over the plot rows and planting holes 2.5' on center were cut with a propane torch. There is 3' between plots. Plants were hand planted and watered in using Peter's 9-45-15 @ 0.5 oz/gallon water. Drip irrigation tubing was installed over the landscape fabric and plants irrigated as necessary. Recommended pest management practices were followed to control weed, disease and insect pressure. The inter-row area (8') was mowed as needed.

Results

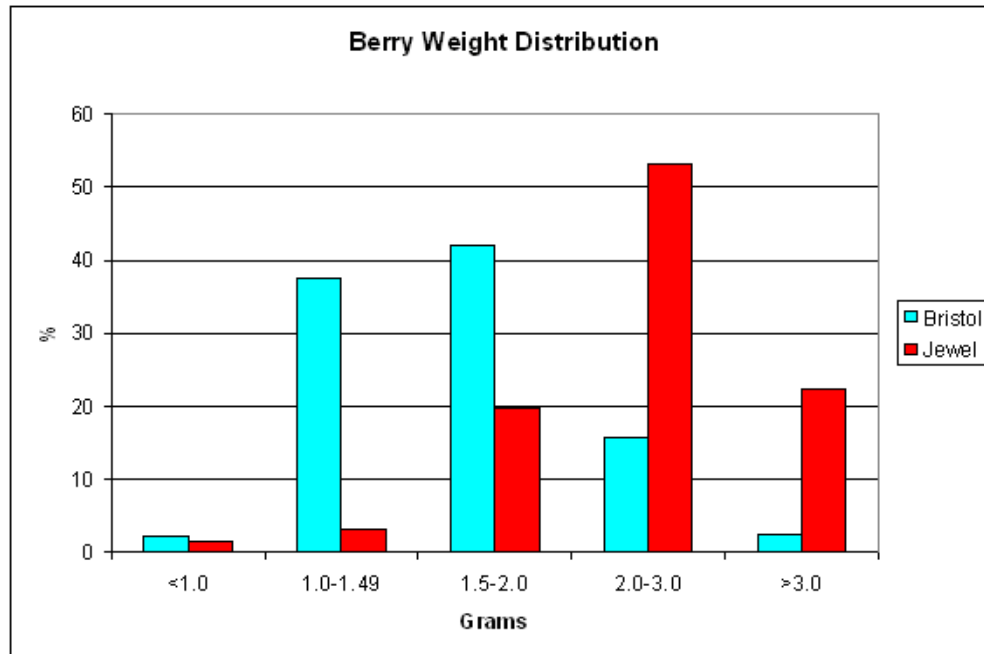
A late frost (22 May 2002) had an effect on fruit production. 91% of the blossoms of Jewel and 81 percent of the blossoms of Bristol were killed. Only 18% of the blossoms of Mac Black were killed. However, Bristol produced more blossoms per plant, an average of 1131, than Jewel with an average of 834 blossoms per plant. Mac Black produced an average of 189 blossoms per plant. However, even with a low percentage of blossom loss to frost, Mac Black only yielded 4 fruit from 24 plants. This may be partially attributable to slower establishment of Mac Black than the other cultivars initially. Lack of fruit set in all varieties may be attributed to several factors including predation, physiological factors, and lack of successful pollination.

Peak harvest of Bristol was around June 21st, one week earlier than Jewel. Jewel should be about a week earlier than Mac Black

	Bristol	Jewel	Mac Black
Average berries per quart	334	-----	-----
Average production per plant (quarts)	0.72	0.30	-----
Total Production from 24 plants (lbs)	19.3	5.6	-----
Average Brix*	10.3	10.1	10.4

* Research shows that human perception of differences in sweetness requires about 1.5% change in Brix value; therefore there would be little perceptible difference in berry sweetness dependent on variety.

	Jewel	Bristol	
Average weight (grams)	2.48	1.66	
Standard deviation	0.69	0.47	
range	0.83-5.08	0.82-3.42	
median	2.40	1.58	
<1.71 grams	10%	12%	<1.19 grams
<1.71-3.09 grams	73%	77%	1.19-2.13 grams
>3.09 grams	17%	11%	>2.13 grams



Conclusion

Having more than one variety of berry in a planting will help to ensure that some level of production is achieved in the event of unusual weather events such as a late frost. Mac Black only produced 4 berries. Bristol produced more, and smaller, berries than Jewel. Based upon the limited sample size there is little noticeable difference in berry sweetness based upon variety.

This study will continue for several more years to allow comparison of the varieties once the planting has matured.

It is difficult to say what the effect of the landscape fabric had on frost damage. The fabric may have absorbed heat and released it limiting frost damage, or it may have resulted in plants that were further along developmentally and so were more susceptible to frost damage. It should also be noted that the floricanes were trailing because the plants were planted in 2001 and not pruned in any manner. Tipping of primocanes began in Spring 2002 and a trellis system was installed after fruit harvest this year.

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®Mention of a specific variety or supplier does not constitute endorsement of materials or suppliers to the exclusion of other varieties or suppliers that may be suitable.