

Bell Pepper Cultivar Trial - 2005

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The 2005 bell pepper cultivar trial was conducted at the Muscatine Island Research Farm, Fruitland, IA, and made possible by funding from Iowa Fruit and Vegetable Growers Association. The trial objective was to identify bell pepper cultivars with good production characteristics suitable for Iowa's variable and frequently stressful growing climate for peppers.

Materials and Methods

Thirteen cultivars having resistance to bacterial leafspot and/or phytophthora blight were planted in the greenhouse on April 15 in 98 cell trays. Pepper plants were transplanted to the field on May 24. Soil type in trial area was a light colored loamy sand with approximately 1 % organic matter. The replicated trial was grown on raised beds in a double staggered row system utilizing drip irrigation and black plastic mulch. Fertilizer was applied preplant incorporated in a band under the plastic mulch and by fertigation through the drip tubes during the growing season. Plant spacing within the row was 21" and rows were approximately 12" apart on beds, which translates into a plant population of 7,112 per acre. Pest control was achieved with practices recommended in FG-600, Midwest Vegetable Production Guide. Peppers were picked when fruit diameter was 2.5" or greater. There were six harvests on July 27, August 3, 11, 23, 30 and September 6. Data presented in Table 1 are of marketable (free of rot, insect damage or not severely misshapened) fruit only. 'Fancy' fruit were sorted out of the marketable category and are the large, exceptionally well-shaped fruit that have become the norm in supermarkets. "Fancy" fruit have a smooth blocky shape with a length equal to or greater than the diameter and are not marred by indentations, irregular growth, exaggerated lobing, or pointy ends.

Results and Discussion

Total marketable yields were good, ranging from 914 bushels for *Blushing Beauty* to 1,500 bushels for *Alliance* (Table 1). The best producers of large "fancy" peppers that had exceptionally good shape were *Aristotle*, *Alliance*, and *Paladin*. *Aristotle* has shown good consistency over three years of trialing and was our top pick in last year's pepper trial (ISU 2004 Annual Fruit/Vegetable Progress Report, FG 601). *Alliance*, trialed for the first time in 2005, was impressive producing large bell peppers with good shape. Also, it is reported to have multiple disease resistance against both bacterial spot and phytophthora. Certain cultivars tended to produce fruit that were undesirably short in length as compared to diameter and can be found in Table 1 with length/diameter ratios under .95. The worst offenders were *Lafayette*, *Revolution*, *Valencia* and *Orion*. *Valencia* developed an attractive rich orange color when allowed to mature and would be best used for the colored market. However, it didn't like our summer growing conditions and produced a high percentage of peppers that were short and squatty. Fruit shape did seem to improve though when cooler temperatures arrived in late summer. *Blushing Beauty* bore charming well-shaped fruit that start out ivory colored and slowly transform to red as they mature. They were most attractive when the ivory color developed a red blush during the change.

Table 1. Bell pepper cultivar trial average yield and fruit characteristics.

	Seed Source	Fancy Bu/Acre ¹	Total Yield Bu/Acre ¹	Avg Frt Wt lbs	Fruit Length inch	Fruit Len/Dia Ratio ²	Fruit Color ³
Aristotle	ST	907	1395	.46	3.70	1.05	G-R
Alliance	HM	901	1500	.48	3.57	1.01	G-R
Paladin	RG	797	1277	.47	3.82	1.09	G-R
Revolution	HM	718	1330	.48	3.44	.92	G-R
Lafayette	RG	706	1362	.48	3.40	.92	G-Y
Brigadier	RI	643	1300	.43	3.58	1.03	G-R
Early Sunsation	ST	579	1111	.42	3.36	.97	G-Y
Blushing Beauty	ST	568	914	.42	3.23	.97	Ivory-R
Patriot	HM	558	1285	.43	3.40	.96	G-R
Orion	RU	501	1317	.50	3.30	.90	G-R
Red Knight	ST	482	1074	.42	3.36	.99	G-R
Valencia	RU	376	1240	.38	3.21	.95	G-Orange
King Arthur	RU	356	1270	.44	3.50	.99	G-R
<i>Average</i>		<i>627</i>	<i>1259</i>	<i>.45</i>	<i>3.45</i>		
<i>LSD 5%</i>		<i>172</i>	<i>252</i>	<i>.02</i>			

¹Bushel/Acre, bushel = 28 lbs.

²Fruit length/diameter ratio: .95=very blocky, flattened shape, 1.00=blocky, length equal to diameter, 1.05=elongated shape with length greater than diameter.

³ Fruit color: G=green, R=red, Yel=yellow.