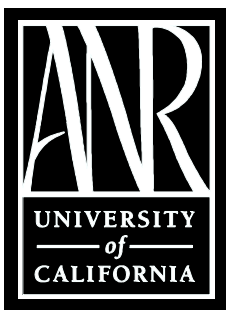


**2005
BELL PEPPER
VARIETY EVALUATION
TRIALS**



*In
San Joaquin County*



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2005 BELL PEPPER VARIETY EVALUATION TRIAL In San Joaquin County

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The Central Valley is one of the larger bell pepper production areas of California. San Joaquin County had about 1,500 acres of all types of peppers (primarily bell peppers) in 2005 for both fresh market and processing. The requirement for varieties that have high yield potential and possess excellent horticultural characteristics is essential to the continued economic health of the pepper industry. Most of the production in this area occurs during midsummer into late fall.

Because a substantial portion of the county's acreage of peppers is grown during a period of shorter days with cool, humid nights, disease (Black Mold, Powdery Mildew, Phytophthora, etc.) and physiological disorders (Pepper Spot, Blossom end rot, and Sunburn) are always potential problems for producers. More recently, a complex of virus diseases (cucumber mosaic, pepper mottle, tobacco etch, potato virus Y, ring spot, and/or tobacco mosaic virus) have occurred, resulting in serious losses for some local growers in given years. Frustration with the virus problem and reduced crop prices to growers have led some growers to reduce acreage or completely get out of pepper production. Fortunately for this area, 2005 proved to be a very limited virus problem year, because the aphid vector responsible for spreading many of the viruses did not appear in heavy numbers and then only after plantings were well established.

Now that there is a number of exciting new pepper cultivars available to producers, information on yield and fruit quality, as well as disease resistance/tolerance levels, is particularly desirable for the local industry. Additionally, Pepper Spot/Black Spot (STIP) has sometimes been a problem on a number of varieties grown under short day, cool night conditions, i.e., late summer/fall in this area, and along the Central Coast. Older, open pollinated lines and certain hybrids have been particularly susceptible to the problem under the aforementioned environmental conditions.

There also may be a relationship of calcium nutritional imbalance in the peppers contributing to the Pepper Spot problem. Circular, gray/black spots develop under the skin in the fruit wall of susceptible varieties about the time the fruit attain a size diameter of three or more inches. As the fruit ripen, the spots slightly enlarge and turn green or yellow. A number of newer hybrid varieties show a good level of resistance or tolerance to this physiological disorder. This year's trial at Biglieri Farms (Steve Biglieri) on the Borden Ranch near Dry Creek, east of Galt, California, sought to look at yield and fruit quality of a number of established and new bell pepper lines from commercial seed company breeders.

The trial was transplanted on June 10th and the field variety was Baron. The soil type at the trial site was a Wyman silt loam and the trial field was alternate row furrow-irrigated throughout the season. The resulting crop stand was excellent with vigorous plant growth. A very hot July and August caused some loss of fruit set and a delay in fruit maturity. The trial contained fifteen replicated varieties and the plot design was a randomized complete block. Hand harvest of the trial was on September 10, 2005. In addition to marketable red and green yield figures, data on crop maturity and fruit size were taken. In the trial, highest yield of red plus green marketable fruit was achieved by Red Bell at 16.01 tons/acre, followed by Double Up (15.90 tons/acre), Encore (14.59 tons/acre), RPP16900 (13.79 tons/acre), Mercado (13.50 tons/acre), RPP9650 (13.43 tons/acre), RPP9661 (13.39 tons/acre), and Baron (13.35 tons/acre). Best quality fruit, including blocky shape and good fruit color and size was led by Double Up, Encore, Mercado, Red Bell, RPP 9650, Affinity, RPP 16900, and Baron. Fruit size for most of the lines evaluated was predominately Jumbo and Extra-large. Other than some fruit sunburn and blossom end rot and some cat-faced fruit, there were no other fruit defect problems. There was virtually no worm damage in the trial and none of the fruit from any of the cultivars had Pepper Spot (STIP). **Table 1** contains complete data for the trial on marketable yield, fruit maturity at harvest and fruit size.

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Many thanks and a great deal of appreciation are expressed to Steve Biglieri (Biglieri Farms) for all this cooperation, help and management in the conduct and maintenance of the variety trial. Also much appreciation is extended to Todd and Grant Craven of Craven Transplants near Crows Landing, California, for the excellent quality transplants of all varieties provided for the variety trial. Thanks also to the participating seed companies for providing the raw materials and monetary assistance to support the bell pepper variety evaluation program in San Joaquin County. Thanks also to Ken Melban and Jerry Munson and the members of the California Pepper Commission for their support and counsel.

2005 BELL PEPPER VARIETY TRIAL
SEED LIST

Replicated	Observation	Seed Company
Affinity Encore Stiletto	Escarlata Jupiter Crusader RPP 9597 (Mercado)	RPP 9650 RPP 9661 RPP 16900 <u>Syngenta Seed (Rogers Brand)</u>
Double Up XPP 2025 (Red Bull) Excel (XPP 1133)		<u>Sakata Seed America, Inc.</u>
Wizard Baron		<u>Seminis Seeds</u>

Table 1. Yield, maturity, and fruit size percent for 15 bell pepper varieties – Galt, CA 2005

Variety	Marketable yield/acre (red + green)		Crop maturity at ¹ harvest (%)			Fruit size (%) ^{1 & 2}					Total yield/acre
	Tons ¹	Boxes	Red	Green	Culls	Jumbo	Extra-large	Large	Medium	Small	Tons
Red Bell	16.01	1,281	1.5	58.5	40.0	34.2	25.9	23.6	9.9	6.4	26.82
Double Up	15.90	1,272	9.8	56.0	34.2	30.3	20.1	28.5	10.5	10.6	24.32
Encore	14.59	1,167	9.1	55.2	35.7	55.8	18.8	10.6	7.4	7.4	22.65
RPP16900	13.79	1,103	14.4	49.1	36.5	3.3	19.6	28.9	22.7	25.5	21.70
Mercado	13.50	1,080	4.3	57.2	38.5	66.3	17.3	9.7	2.9	3.8	22.10
RPP9650	13.43	1,074	8.4	47.1	44.5	64.5	21.8	10.9	1.1	1.7	23.67
RPP9661	13.39	1,071	5.3	57.3	37.4	53.1	14.4	8.9	9.7	13.9	21.31
Baron	13.35	1,068	12.1	48.7	39.2	4.1	27.7	32.7	21.7	13.8	22.10
Wizard	13.11	1,049	4.7	54.7	40.6	47.0	23.3	10.3	6.1	13.3	21.78
Affinity	12.70	1,016	11.3	46.0	42.7	51.0	21.9	14.8	3.6	8.7	22.87
Stiletto	12.09	967	3.4	50.2	46.4	9.5	31.7	27.2	19.1	12.5	22.14
Crusader	10.71	857	2.7	52.3	45.0	34.4	25.8	12.8	13.6	13.4	19.17
Excel	10.05	804	3.0	47.7	49.3	24.9	19.9	32.4	7.0	15.8	19.75
Jupiter	9.73	778	1.6	42.1	56.3	51.1	23.3	14.9	3.7	7.0	22.14
Escarlata	7.37	590	6.4	29.3	64.3	20.0	10.2	20.0	24.5	25.3	21.38
Average	12.65	1,012									
LSD ³	4.20	336									
C.V.	23.3%	23.3%									

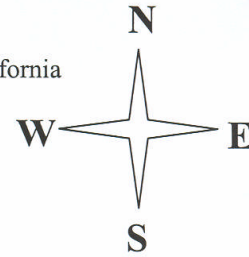
¹Values represent the average of four replications

²Pepper fruit sizing data: Jumbo: >8.5 oz; Extra-large: 7 – 8.5 oz; Large: 6 – 7 oz; Medium: 5.3 – 6 oz; Small: <5.3 oz

³Least significant difference at 5% significance level

2005 Bell Pepper Variety Trial
 UC Cooperative Extension San Joaquin County
 Steve Biglieri Farms (Borden Ranch) southeast of Galt, California

Experimenters: Benny Fouché, Bob Mullen, Debra Boelk,
 Scott Whiteley, Don Colbert, Randall Wittie



<u>Replicated Variety</u>	<u>Seed Co.</u>
1. Escarlata	Syngenta/Rogers Seed
2. Encore	Syngenta/Rogers Seed
3. Affinity	Syngenta/Rogers Seed
4. Stiletto	Syngenta/Rogers Seed
5. Crusader	Syngenta/Rogers Seed
6. Jupiter	Syngenta/Rogers Seed
7. RPP 16900	Syngenta/Rogers Seed
8. RPP 9650	Syngenta/Rogers Seed
9. RPP 9661	Syngenta/Rogers Seed
10. RPP 9597 (Mercado)	Syngenta/Rogers Seed
11. Excel (XPP 1133)	Sakata Seed
12. Baron	Seminis Seed
13. Double Up	Sakata Seed
14. XPP 2025 (Red Bell)	Sakata Seed
15. Wizard	Seminis Seed

Field Variety:	Baron
Trial Transplanted:	6/10/05
Irrigation Method:	Furrow

PLOT PLAN:

13	6	10	11	4	8	14	2
~~~~~3 foot alley~~~~~							
5	7	1	9	16	3	15	12
~~~~~3 foot alley~~~~~							
15	4	11	7	10	12	1	5
~~~~~3 foot alley~~~~~							
8	14	9	2	6	13	16	3
~~~~~3 foot alley~~~~~							
3	12	5	8	15	9	2	11
~~~~~3 foot alley~~~~~							
7	10	6	16	1	14	4	13
~~~~~3 foot alley~~~~~							
16	15	14	13	12	11	10	9
~~~~~3 foot alley~~~~~							
1	2	3	4	5	6	7	8

← 25 ft →

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