

Jalapeño Pepper Cultivar Evaluation, Northern Indiana, 2004

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Twelve jalapeño pepper cultivars were evaluated at the Pinney-Purdue Ag Center in Wanatah, Indiana. Characteristics of interest included yield, and fruit size and shape, wall thickness, and plant size.

Materials and Methods. The trial was conducted on a Tracy Sandy Loam, fertilized in fall 2003 with 300 lb./A 8-32-16 and before planting in spring 2004 with 60 lb./A each N, P₂O₅ and K₂O from 19-19-19. The trial was arranged in a randomized complete block design with 3 replications. A single plot consisted of 12 plants in two rows, spaced 1.5 ft. apart within the row. Rows were centered on top of 30-in. beds on 5-ft. centers covered with black plastic mulch. Peppers were seeded on April 15 and transplanted on June 7, 2004. A 9-45-15 starter fertilizer mixed at a concentration of approx. 13 oz./50 gal. water was applied at transplanting. Beginning mid-July an additional 30 lb./A N was applied through drip irrigation in 3 installments. Weeds were controlled with one application of Sandea applied between rows, and hand weeding. To control European corn borer, Mustang was applied on Aug. 31. On Aug. 11 all fruit showing some checking and on Sept. 13-15 all fruit longer than 2.5 in. were harvested from the center 8 plants per plot and weighed. In some cases, poor emergence or early season plant mortality meant there were fewer than 8 plants to harvest. On Aug. 11, subsamples of 25 peppers per plot were weighed to determine average fruit weight. Total length and width of ten peppers per plot were also determined. One pepper per plot was cut crosswise mid-way between stem and blossom ends, and the wall thickness measured mid-way between placental attachments. For peppers with 2 locules, 2 measurements were made, and for peppers with 3 locules, 3 measurements were made. Plant height was measure in Sept. After the Sept. harvest peppers were evaluated for shape (1=least tapered, 3=most tapered), degree of checking (1=none, 9-much), and presence of anthocyanin (1=none, 9-much). Yield was converted to per plant values prior to analysis. Analyses of variance were performed and means separated using Fisher's protected LSD at $P=.05$.

Results and Discussion. Table 1 shows results of the trial. Total yield ranged from 3.7 to 5.2 lb. per plant. Ixtapa produced the highest yield, followed by SXP 4517, Pecos, Grande, and Conchos, which were not significantly different from Ixtapa. Yield from the first harvest on Aug. 11 did not differ among cultivars. Average weight per pepper ranged from 1.1 to 2.2 oz. (30 to 61 g). Conchos and SXP 4518 were significantly heavier than all other cultivars. Sayula was the lighter than any other pepper. Length of peppers ranged from 8.5 to 10.1 cm, and diameter from 2.9 to 4.2 cm. Talon was the longest, followed by GVS 42500, Conchos, Telicia, and Grande, which did not differ significantly from Talon. Sayula, Tula, and Ixtapa X3R were the shortest peppers. Wall diameter ranged from 4.2 to 5.9. Conchos had the thickest walls, followed by SXP 4518, GVS 42500, and SXP 4517, which were not significantly different from Conchos. Plant height, measured at the end of the season, reflects both the size of the plant and the amount of lodging. Talon was the tallest, although not significantly different from GVS 42500, Telicia, Conchos, Ixtapa X3R, or Tula. In the field, Talon appeared noticeably more upright than other cultivars. The cultivars differed in fruit shape, checking and degree of anthocyanin development. SXP 4518 and Telicia had more taper from the stem end to the tip than other varieties. SXP 4518 had little checking compared to other cultivars. Talon, Telicia, GVS 42500 and 42501, Tula and Sayula showed little to no anthocyanin development in the Sept. harvest. Consumer preferences for particular jalapeño pepper characteristics vary depending on the market. The information provided here should help growers select cultivars with characteristics desired by the markets they serve.

Table 1. Yield, fruit characteristics and plant height for twelve jalapeño pepper cultivars, Wanatah, IN, 2004.*

Cultivar	Seed		Wall										Antho- cyanin#
	Source†	Total Yield	8/11 Yield	Ave. Wt. per Fruit	Fruit Length	Fruit Diam.	Diameter	Plant Ht.	Shape#	Checking#	cyanin#		
	lb./plant	lb./plant	oz.	g	cm	cm	mm	cm					
Conchos	JS	4.57	0.77	2.15	60.9	9.78	4.20	5.94	61	2	7	2	
Grande	RU	4.72	0.54	1.58	44.9	9.60	3.50	4.53	56	1	8	4	
GVS 42500	GV	4.17	0.47	1.83	51.9	9.94	3.92	5.67	61	1.5	5	1	
GVS 42501	GV	3.82	0.63	1.47	41.6	9.27	3.48	4.87	56	2	5	1	
Ixtapa X3R	SM	5.16	0.47	1.38	39.1	9.03	3.34	4.27	59	1	8	3	
Pecos	RU	4.99	0.66	1.31	37.3	10.12	3.07	4.72	46	1	7	3	
Sayula	ST	3.83	0.56	1.06	30.0	8.53	2.94	4.28	54	1	7	1	
SXP 4517	SS	5.00	0.91	1.65	46.7	9.21	3.58	5.33	43	2	6	3	
SXP 4518	SS	4.09	0.55	2.02	57.4	9.32	3.89	5.77	54	3	3	2	
Talon	RI	4.06	0.31	1.47	41.6	9.95	3.38	4.22	67	1	7	1	
Tellica (ACX110)	AC	4.43	0.71	1.64	46.5	9.73	3.70	4.42	60	3	5	1	
Tula	RU	3.71	0.73	1.63	46.1	9.03	3.50	4.55	57	2	8	1	
Grand Mean		4.38	0.61	1.60	45.3	9.46	3.54	4.88	56				
LSD .05##		0.69	NS	0.16	4.5	0.66	0.34	0.71	10				

*Plant population was 11616 plants per acre.

†AC=Abbott & Cobb, GV=Golden Valley Seed, JS=Johnny's Selected Seeds, RI=Rispens Seeds, RU=Rupp Seeds, SM=Seminis, SS=Sunseeds, ST=Stokes.

#Evaluated for 1 replication. Shape: 1=slight taper stem end to tip; 2=moderate taper; 3=strong taper. Checking (cracking) of full-sized fruit: 1 to 9 scale; 1=none, 9=very heavy. Anthocyanin development (dark coloration): 1 to 9 scale; 1=none, 9=all fruit.

##Fisher's Protected Least Significant Difference at $P = .05$. NS=not significant.

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