

Vegetable Section

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POBLANO PEPPER (*CAPSICUM ANNUUM*) CULTIVAR EVALUATION FOR NORTH FLORIDA IN THE SPRING OF 2004

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Abstract. Florida is a leader in the production of bell pepper (*Capsicum annuum*) with 15,000-20,000 acres grown annually. Smaller acreage of specialty pepper is also grown in Florida. Increased interest in specialty crops, including several types of peppers, provides new opportunities for Florida growers. Specialty peppers include: jalapeno, cubanelle, long hot cayenne, finger hots, habenero, and southwestern chile types. One other specialty type is the poblano pepper, used fresh for “stuffing pepper” recipes and also as a dried product. A poblano pepper cultivar evaluation study was conducted in Live Oak, Florida during the spring of 2004 to determine their adaptability to production in North Florida. Top early yields were found with ‘Ancho Villa’ and ‘Ventura’. The highest seasonal early yields were found in ‘Ancho Villa’ at 30,242 lb/acre followed by ‘Ventura’ at 23,838 lb/acre. The lowest seasonal yields were found with ‘Ancho 211’ and ‘Tiburon’ with 17,544 and 18,132 lb/acre, respectively. Fruit dimension measurements taken from each plot showed the fruit width to be greatest in ‘Ancho Villa’ and ‘Tiburon’ at 2.4 and 2.3 inches, respectively. Fruit length also varied among entries with fruit of ‘Ancho Villa’ (4.0 inches) significantly longer than the other cultivars. Fruit color ratings showed ‘Ancho Villa’ was significantly lighter green in color than each of the other entries.

Bell pepper is a leading vegetable crop in Florida with 15,000-20,000 acres grown annually (Fla. Agr. Stat. Serv., 2004). Smaller acreage of specialty pepper is also grown in Florida. Increased interest in specialty crops, including several types of peppers (Fig. 1), provide new opportunities for Florida growers. Specialty peppers include: jalapeno, cubanelle, long hot cayenne, finger hots, habenero, and southwestern chili types, to mention a few. One other specialty type is the poblano pepper, used for “stuffing pepper” recipes. These peppers are called poblano when used as a fresh product or anchos when dried. Poblano pepper varieties vary in intensity from medium to hot. Most poblano peppers



Fig. 1. Various specialty pepper types and cultivars.

consumed in the US are grown in Mexico. The largest area of production is in North Central Mexico, including the state of Durango (Zapata et al., 2002). Few reports of poblano pepper cultivar trials are available. One trial conducted in Indiana resulted in yields of 24,000 to 34,000 lb/acre (Morales, 2002). Another poblano pepper study was conducted on a farm in Texas to evaluate ratooning practices on a spring crop for fall production. Yields in fall crops ranged from 13,000 to 18,000 lb/acre on the ratooned crop (Leskovar et al., 2004). This trial was conducted in spring 2004 to evaluate the yield performance and fruit characteristics of four poblano pepper cultivars under north Florida conditions.

Materials and Methods

Plots were established on a Lakeland fine sand at the University of Florida, North Florida Research and Education Center—Suwannee Valley near Live Oak, Fla. Soil was prepared by rototilling to a depth of 8 inches. The soil was fertilized with 500 lb/acre of 13-2-10 (N-P-K) with micronutrients. Fertilizer was applied to the soil and was incorporated by rototilling prior to bed formation. Beds were formed on 5-ft centers, pressed, and fumigated with a methyl bromide and chloropicrin mixture (67:33) at a rate of 400 lb per treated acre on 15 Mar 2004. Drip irrigation tape was laid in the center of the bed surface and the bed was covered with black polyethylene mulch. The final bed dimensions were 32 inches wide and 6 inches high. The remaining N and K required for the season was applied via weekly injections of 7-0-6 (N-P-K) solution

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Fig. 2. Specialty pepper plants supported by stakes and string.



Fig. 3. Poblano fruits from 21 June 2004 harvest.

through the drip irrigation system. Season total for N and K₂O were 180 lb/acre (Olson et al., 2004).

Plots 20 feet in length were established on 29 Mar. 2004 by transplanting peppers, two rows per bed. The two rows were 12 inches apart on the bed and plants within each row were also 12 inches apart. Pepper cultivar treatments ('Ancho 211', 'Ancho Villa', 'Tiburon', and 'Ventura') were replicated four times and plots were arranged in a randomized complete block design. The crop was supported during the season with wooden stakes and string on the outer edges of the beds (Fig. 2). Weekly applications of insecticide and fungicide were made during the season. Drip irrigation schedule was set to maintain soil moisture at a level of -8 to -12 centibars at a 12 inch depth.

Peppers were harvested on 21 and 28 June 2004. Fruit was graded into one of two categories, marketable or cull. Culls included defects such as blossom end rot. A subsample of 10 fruit from each plot on the first harvest date, 21 June 2004, was used for other measurements including fruit width, fruit length, and fruit color ratings. Fruit color rating was made on a scale of 1-5, 1 = light or pale green, 3 = medium green, but no blackish-green tint, 5 = very dark green, nearly blackish-green. Data were subjected to analysis of variance procedures and means separation by Duncan's multiple range test (SAS/STAT, 2000).

Results and Discussion

Early pepper yields (21 June harvest) ranged from 10,444 to 18,350 lb/acre (Table 1). Top early yields were found with 'Ancho Villa' and 'Ventura'. There was no significant difference in early cull yield. Essentially all early cull defects were due to blossom end rot. The second harvest results showed 'Ancho Villa' was the top producer and was significantly higher on that date (28 June 2004) than the other three cultivars. The highest seasonal yield was found in 'Ancho Villa' at 30,242 lb/acre followed by 'Ventura' at 23,838 lb/acre. The lowest seasonal yields were found with 'Ancho 211' and 'Tiburon' with 17,544 and 18,132 lb/acre, respectively.

Fruit dimension measurements taken from pepper in each plot (Fig. 3) showed the fruit width to be greatest in 'Ancho Villa' and 'Tiburon' at 2.4 and 2.3 inches, respectively. This measurement was taken at the widest part of the fruit, the shoulder on the stem end. Fruit length also varied among entries with 'Ancho Villa' (4.0 inches) significantly longer than the other cultivars. 'Tiburon' and 'Ancho 211' showed the shortest fruit at 3.3 inches.

Fruit color rating data showed 'Ancho Villa' was significantly lighter green in color than each of the other entries (Fig. 4). All other cultivars were a similar very dark green

Table 1. Evaluation of four poblano pepper cultivars at Live Oak, Florida, during the spring of 2004 for yield, quality, and fruit characteristics.

Cultivar	Seed source	Fruit width (inch)	Fruit length (inch)	Fruit color rating ^z (1-5)	Season yield (lb per acre)		Early yield (lb per acre) ^y		Late yield (lb per acre) ^y	
					Marketable	Cull	Marketable	Cull	Marketable	Cull
Ancho 211	Johnny's	2.0 b*	3.3 c	5 a	17,544 c	2,227 b	10,444 b	1,383	7,100 b	844 b
Ancho Villa	Seedway	2.4 a	4.0 a	3 b	30,242 a	4,280 a	18,350 a	2,200	11,892 a	2,080 a
Tiburon	Johnny's	2.3 a	3.3 c	5 a	18,132 c	4,481 a	11,533 b	1,721	6,599 b	2,761 a
Ventura	Seedway	2.0 b	3.7 b	5 a	23,838 b	1,454 b	16,074 a	1,247	7,765 b	207 b
Significance ^w		**	**	**	**	**	**	NS	**	**

^zFruit color rating was made on a scale of 1-5, 1 = light or pale green, 3 = medium green, but no blackish-green tint, 5 = very dark green, nearly blackish-green tint.

^yEarly harvest was from 21 June 2004. Late harvest was from 28 June 2004.

*Means in a column with the same letter are not significantly different by Duncan's multiple range test ($p = 0.05$).

^wF-test for treatments were either highly significant at the 1% level (**) or not significant (NS).



Fig. 4. Color variation in poblano fruits from different cultivars.

(nearly blackish green) color. This difference in color for 'Ancho Villa' may be important in certain markets. If a very dark green fruit is required, 'Ancho Villa' may not be acceptable.

'Ancho Villa' produced the highest early and total marketable yield in the trial. It also produced the largest fruit of the four cultivars evaluated in this trial. All four cultivars produced excellent quality fruit; however, the fruit size and yield of 'Ancho Villa' make it an excellent choice, as long as the lighter color fruit is acceptable to the market.

Literature Cited

- Florida Agricultural Statistics Service. 2004. Vegetable summary 2002-03. Fla. Agr. Stat. Serv., Orlando, Fla.
- Leskovar, D. I., D. J. Morre, G. Piccinni, J. Loaiza, K. Crosby, and B. Aloni. 2004. Water conservation strategies for poblano pepper in south Texas. Proc. 17th Annu. Intl. Pepper Conf. Univ of Fla. Press, Gainesville.
- Morales, M. R. 2002. Jalapeno and poblano pepper cultivar trials in central Indiana, 2002. Indiana Coop. Ext. Serv. Rept., 2 p.
- Olson, S. M., E. H. Simonne, D. N. Maynard, G. J. Hochmuth, C. S. Vavrina, W. M. Stall, T. A. Kucharek, S. E. Webb, T. G. Taylor, and S. A. Smith. 2004. Pepper production in Florida, p. 247-258. In S. M. Olson and E. H. Simonne (eds.). Vegetable production handbook for Florida 2004-2005. Fla. Coop. Ext. Serv. Misc. Circ.
- SAS/STAT. 2000. User's Manual. SAS Institute, Cary, NC.
- Zapata, C. E., V. M. Robles, and D. G. Sanchez. 2002. Performance of chile pepper (*Capsicum annuum*) under greenhouse conditions in Durango, Mexico. Proc. 16th Annu. Intl. Pepper Conf.