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Jalapeño and banana pepper cultivar trials in Northern Indiana, 2003

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Introduction

American society is currently being transformed by the influence of a large variety of cultures. Interracial and intercultural marriages are now more common than before. This new melted generation is having the influence of many different cultures. One of the aspects of influence is the experience and selection of new foods. There is a large part of society now that likes spicy foods and are more willing to explore new flavors. The Jalapeño pepper is a good example of an ethnic vegetable that has become quite popular in the United States. It is now consumed by millions of Americans and it is found even at buffets of fast food restaurants, for example Kentucky Fried Chicken. Hispanics consume hot peppers in large quantities. The more than 3 million Hispanics living in the Midwest form a significant market for ethnic vegetables, including Jalapeño. Among Hispanics, especially of Mexican origin, large thick-walled Jalapeños are being demanded for stuffing with mixtures of meat, vegetables and spices. This type of Jalapeño pepper is also demanded by the processing industry. To supply these markets, seed industry breeders have been developing large thick-walled Jalapeño cultivars. This article reports on the evaluation of new experimental cultivars from Sunseeds and Abbot & Cobb, Inc. and standard cultivars.

Materials and Methods

One banana and four Jalapeño pepper cultivars were planted in a greenhouse at Pinney Purdue Agricultural Center, Wanatah, Indiana on May 3, 2003. Plants were grown in 72-cell plastic trays and transplanted into a randomized complete block design with three replications on June 18. Field preparation included a fall application of 90 lb/A K₂O and pre-plant incorporation of 120 lb/A N (from Urea). The trial was planted on raised beds covered with black plastic mulch for weed control. Trickle irrigation lines were placed beneath the plastic mulch to provide water and fertilizer to the growing plants as needed. Beds were 5 feet apart from center to center. Plots had two rows with plants staggered and spaced 1.5' apart within rows. Plots had a total of 12 plants (six per row), but only the eight central competing plants were harvested, the end plants were not considered. Hail hit the trial on June 28, ten days after transplanting, and broke the main stem of several plants. Undamaged plants were marked with pink flags and yields and fruit characteristics of broken and unbroken plants recorded separately. Plots were harvested on September 9 and September 30. We measured plant height (cm); fruit yield (lb/plot); average fruit weight (from 25 fruit, in g), length (from 6 fruits, in cm) and width (from 10 fruit, in cm); and fruit-wall thickness (from 3 fruits, in mm) on September 9. Fruits for these measurements were taken randomly from the bulk of the fruit harvested from each plot. On September 16, we also sampled and measured the length (in cm) and width (in cm) of three mature fruits from each plot. The data were processed using SAS, a software system for statistical analysis.

Results and Discussion

The Jalapeño cultivars evaluated varied significantly in yield and fruit characteristics (Table 1). The three experimental cultivars tested were superior to the standard cultivar (Mitla F1) in most of the characteristics evaluated. **SXP 4517**, from Sunseeds, was the best performer with a yield of 37.1 lb/plot (4.6 lb/plant), an average fruit weight of 42.16 g (1.49 oz) and a fruit-wall thickness of 5.22 mm. Also, it had the shortest plant stature (44.7 cm), which makes it less susceptible to lodging in areas with strong winds like Indiana. It had intermediate average fruit length and width. **ACX 110**, from Abbot & Cobb, Inc., proved to be superior to **ACX 111**, also from Abbot & Cobb, Inc., in yield, fruit characteristics and plant height. **ACX 111** was the tallest cultivar tested (taller even than Mitla F1), which makes it the most susceptible to lodging by wind. Mature fruit was longer and wider than the randomly sampled fruit in the four cultivars studied; this indicates that mature fruit may also weigh more.

The banana pepper tested, **ACX 400**, from Abbot & Cobb, Inc., performed well in central Indiana (Table 2). Fruits looked very attractive and in average weighed 60.16 g (2.12 oz) and measured 15.01 cm long and 4.27 cm wide. Yield was 24.43 lb/plot (3.05 lb/plant)

Table 1. Yield and fruit characteristics of Jalapeño pepper cultivars, northern Indiana, 2003

Cultivar	Source	Yield lb/plot	Plant height cm	Average fruit			Mature fruit		Fruit-wall thickness mm
				weight g	length cm	width cm	length cm	width cm	
SXP 4517	SS	37.1 a ^z	44.7 d	42.16 a	7.91 cb	3.37 ab	8.56 b	3.58 a	5.22 a
ACX 110	AC	31.8 ab	56.0 b	44.40 a	8.96 a	3.48 a	9.51 a	3.59 a	4.30 c
ACX 111	AC	28.8 b	61.7 a	39.96 ab	8.44 ab	3.42 ab	9.07 ab	3.44 ab	4.11 c
Mitla F1	RU	28.7 b	50.7 c	33.51 b	7.81 c	3.19 b	8.38 b	3.21 b	4.81 b
Mean		31.8	53.3	40.01	8.28	3.36	8.88	3.46	4.61

^z Means with the same letter are not significantly different.

Table 2. Yield and fruit characteristics of ACX 400, a banana pepper cultivar, northern Indiana, 2003

Cultivar	Source	Yield lb/plot	Plant height cm	Average fruit			Mature fruit		Fruit-wall thickness mm
				weight g	length cm	width cm	length cm	width cm	
ACX 400	AC	24.43	56	60.16	15.01	4.27	16.44	4.27	3.34
Std Dev		1.99	1	4.19	1.15	0.11	0.93	0.27	0.14