Trial Report: Bell Pepper (X10) Variety Evaluation Spring 2016

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Production:

Location: Tifton, GA Entries: 14 (some pre commercial varieties removed from report) Planting Date: Seeded into 200 cell trays on 10 February, transplanted 8 April 2016. Plant spacing: 6' centers black TIF plastic mulch with 12" in-row spacing. Double rows were used for a plant population of 14,520 plants per acre. Plot size: 40 plants per plot with four plots (replicates per variety) arranged as a randomized complete block design. Fumigation: Pic-Chlor 60 applied in February when plastic laid. Fertility: 1000 lbs of 5-10-15 applied preplant under plastic. Weekly fertigations of 7-0-7 at 15 lbs N acre for a total of 200 lbs/acre N. Irrigation applied at approximately 1 inch per week. Herbicide: Between rows – Dual Magnum, Valor, and Goal 2xl Pest Control: Weekly applications of copper and manzate as well as Quadris and Bravo when needed. Insecticides applied included Admire Pro, Bifenthrin and Sivanto.

Data conection:

Harvests: 72-84 days after transplant (DAT).

Grading: Pepper graded into industry grades as suggested by the North American Perishable Agricultural Receivers as follows:

Jumbo: >3 ¾ inch diameter, 45 ct or less per box. Extra Large: >3 ½ inch diameter, 46-55 ct per box Large: > 3 ¼ inch diameter, 56-70 ct per box

Medium: >3 inch diameter, 71-85 ct per box

Choppers: Misshapen but otherwise no defects (processing)

Culls: Misshapen or not with defects

Yields are presented in 1 1/9 bushel boxes (estimated 22 lbs).

Data analysis: Data analyzed using SAS statistical software using the GLM procedure and Fisher's Least Significant Difference Test for mean separation.

Results:

Yield data is presented in tables 1 and 2. Overall yields of this trial were consistent for a late mid-late spring planting slot. Two environmental/pathological factors impacted yield in this trial. Blossom end rot resulted in relatively high numbers of cull fruit for the first harvest, despite preplant applications of gypsum and lime as well as a high incidence in tomato spotted wilt virus (TSWV) significantly impacted several non-resistant lines. The impacts of TSWV were two-fold. Affected plants were smaller and produced far fewer fruit than non-infected plants. In addition, the smaller stunted plants resulting from TSWV had less shading than no impacted plants. This resulted in significant sunscald of fruit during the second harvest. Furthermore, the plants with high levels of TSWV had very few fruit available for a third harvest. Nonetheless varietal characteristics were consistent with other trials, with some varieties (eg. 9325) having large numbers of jumbo and extra-large fruit, while others (eg. 3255) had greater numbers of large and extra-large fruit.

Yields are presented in table 1 on a box per acre basis. Antebellum had the highest numerical yields, but they were not significantly different from several other varieties. Table 2 has total fruit harvested on a per acre basis. This was done to allow for conversion to different boxing standards that are set based on number of fruit of a given size per box.

Table 1. Yields for peppers in boxes per acre from Spring 2016.																
Variety (Company) ^z	Total Yield		Jumbo		Extra		Large		Medium		Choppers		Total		Cull [×]	
					Large								Marketable			
													+ Choppers			
	(1 1/9 Bushel Boxes/Acre) ^v											(%	(%)			
Antebellum (Sm)	850	а	290	а-е	310	abc	180	abc	70	ab	90	b	940	ab	40	a-e
Prowler (Hm)	840	а	170	def	370	а	230	а	70	ab	200	а	1,040	а	35	de
SSC1 (Se)	820	ab	340	a-d	320	ab	140	cde	20	ab	80	b	900	abc	36	cde
PS0994 2815 (Sm)	800	ab	370	abc	280	a-e	130	c-f	20	ab	80	b	880	abc	44	a-d
PS0997 9325 (Sm)	790	ab	380	ab	300	a-d	90	def	15	ab	70	bc	860	abc	47	а
SVPB6988 (Sm)	790	ab	250	b-e	330	ab	140	b-e	60	ab	70	bc	810	abc	38	b-e
Seedway001 (Sw)	740	ab	170	def	320	ab	180	abc	75	ab	70	bc	810	abc	47	а
51008 (Hm)	740	ab	470	а	200	е	60	f	10	b	90	b	830	abc	46	ab
Green Machine (Sm)	710	ab	200	c-f	280	a-e	190	abc	50	ab	50	bc	760	bc	48	а
141 (Hk)	700	ab	150	ef	260	b-e	220	ab	80	а	40	bc	750	bc	45	ab
SV0964PB (Sm)	670	ab	260	b-e	200	е	160	a-d	50	ab	40	bc	710	bc	44	a-d
SV3255PB (Sm)	620	ab	150	ef	220	de	190	abc	75	ab	20	с	640	С	44	a-d
Aristotle (Sm)	600	b	150	ef	230	cde	150	b-e	65	ab	60	bc	650	С	46	ab
SDY48 (Sw)	250	С	30	f	60	f	80	ef	75	ab	20	С	270	d	34	е
^z Companies abbreviated as follows: Hm: Harris Moran, Hk: High Mark, Sm: Seminis, Se: Siegers																

⁹Yield based on a box weight of 22 pounds; yields are rounded to the nearest ten boxes (five for medium) to account for significant digits- because of this, total yields may not equate exactly to the sum of each size category.

^{*}Cull percentage is the total number of cull fruit divided by the total cull and harvested fruit. Most culls on the first harvest were due to blossom end rot, later harvests had culls due to sunburn, much of the sunburn was found on those plants with high TSWV symptoms. All fruit were harvested to determine cull rates.

Table 2. Yields for peppers in number of fruit harvested per acre from Spring 2016.												
Variety (Company) ^z	Total Y	ïeld	Jumb	00	Extra La	arge	Large		Medium			
	(1 1/9 Bushel Boxes/Acre) ^y											
Antebellum (Sm)	61,120	ab	15,270	abc	21,980	abc	15,720	abc	8,140	ab		
Prowler (Hm)	63,710	а	9,710	cd	25,960	а	20,060	а	7,990	ab		
SSC1 (Se)	58,800	ab	19,500	ab	24,190	а	12,840	bcd	2,280	ab		
PS0994 2815 (Sm)	54,620	ab	20,560	ab	20,090	a-e	11,160	b-e	2,820	ab		
PS0997 9325 (Sm)	55,280	ab	20,960	ab	23,310	ab	8,760	cde	2,250	ab		
SVPB6988 (Sm)	56,710	ab	13,670	abc	24,220	а	12,710	bcd	6,120	ab		
Seedway001 (Sw)	54,290	ab	9,510	cd	21,760	abc	15,260	abc	7,760	ab		
51008 (Hm)	43,510	b	22,880	а	14,250	е	5,150	е	1,230	b		
Green Machine (Sm)	54,760	ab	11,930	bc	21,070	a-d	16,860	ab	4,900	ab		
141 (Hk)	50,890	ab	7,920	cd	17,260	b-e	17,320	ab	8,390	ab		
SV0964PB (Sm)	49,790	ab	13,150	bc	14,950	de	15,200	abc	6,500	ab		
SV3255PB (Sm)	46,300	ab	7,140	cd	15,090	de	15,600	abc	8,470	ab		
Aristotle (Sm)	44,450	b	8,540	cd	15,740	cde	12,660	bcd	7,520	ab		
SDY48 (Sw)	24,320	С	2,180	d	5,260	f	7,440	de	9,440	а		
^z Companies abbreviated as follows: Hm: Harris Moran, Hk: High Mark, Sm: Seminis, Se: Siegers												
^v Number of fruit estimated on 14,520 plants per acre												
^x Cull percentage is the total number of cull fruit divided by the total cull and harvested fruit. Most												
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