Winter Pepper Variety Trial Evaluation

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Table 1. Summary of cultural practices used for variety trial of pepper grown with seepage irrigation in Palm Beach, FL. during winter 2009.

Experimental design	RCBD (4 replications)
Location	Palm Beach, FL.
Irrigation	Seepage
Plot size	10.8 ft
Planting date	9 Nov. 2009
Fumigation	MeBr/Chloropicrin (50:50)@100 lb/acre
Plastic mulch	Black
Linear ft per acre	7,260
Bed spacing	6 ft
Bed height	8 in
Bed width	36 in
Plant population	17,477
Plant spacing	10 in
Row per bed	2
Row run	North – South
Harvest date	
First harvest	1 Feb. 2010
Second harvest	25 Feb. 2010
Planting to 2nd harvest	15 weeks

Table 2. Sources of pepper seeds

Variety	Company	Bacterial spot (Xcv) resistance
ACR 283	Abott and Cobb	-
ACR 75311	Abott and Cobb	1-6
Allegiance	Harris Moran	1-5
E41-0591	Enza Zaden	-
E41-1023	Enza Zaden	-
E41-3041	Enza Zaden	-
E41-3088	Enza Zaden	-
Excursion	Abott and Cobb	-
Hunter	Rogers	1-5 and 7-9
Myakka	Enza Zaden	1-4
PT 9-56	Pepper Research	-
PT 7-12	Pepper Research	-
Red Bull	Sakata	1-3
Regiment	Harris Moran	1-5
Tom Cat	Syngenta/Rogers	1-5 and 7-9
XPP 6001	Sakata	1-5 and 7-9
2815	Seminis	1-10
7141	Seminis	1-5
8302	Seminis	1-5

Xcv 1,2,3,4,5,6,7,8,9 - Bacterial spot (*Xanthomonas campestris* pv. *Vesicatoria*)

Table 3. Summary of temperature and total rainfall in Palm Beach, FL. during winter 2009.

Period	Temperature (ºF)			Total rainfall
	Average	Min	Max	(inch)
Nov. 2009	68.5	58.8	79.6	0.9
Dec. 2009	66.8	57.7	77.1	2.9
Jan. 2010	57.0	45.4	69.7	1.1
Feb. 2010	59.6	49.1	70.7	2.1
Average/Total	63.0	52.8	74.3	7.1

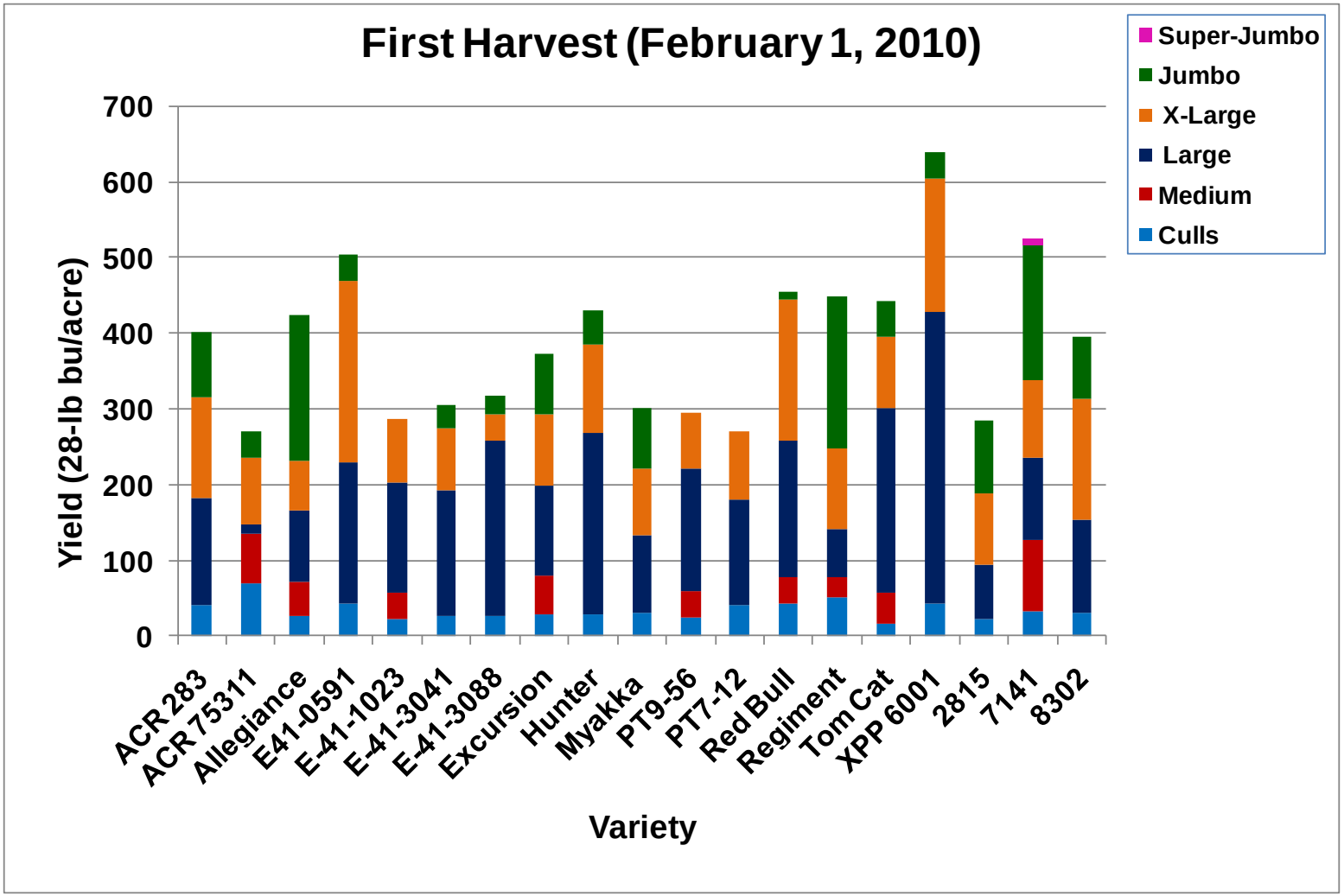

Figure 1. First harvest marketable and unmarketable (culls) yield categories for selected pepper varieties grown in Palm Beach, FL. during winter 2009.

Table 5. First harvest marketable and unmarketable (culls) yield categories for selected pepper varieties grown in Palm Beach, FL. during winter 2009.

Variety	Super-Jumbo	Jumbo	X-Large	Large	Medium	Culls	Total Marketable
	----------Yield (28-lb bu/acre)----------						
ACR 283	0	88bc[z]	133	140bcde	0	41	361bcde
ACR 75311	0	35c	88	12e	66	69	201f
Allegiance	0	194a	66	93cde	47	26	399bcd
E41-0591	0	35c	239	188bcd	0	42	462ab
E41-1023	0	0c	85	144bcde	36	22	265def
E41-3041	0	30c	83	165bcd	0	26	278cdef
E41-3088	0	24c	35	233bc	0	26	291cdef
Excursion	0	81bc	94	119bcde	51	28	345bcdef
Hunter	0	44c	118	239bc	0	29	400bcd
Myakka	0	80bc	87	102bcde	0	31	270def
PT 9-56	0	0c	74	161bcd	36	24	270def
PT 7-12	0	0c	89	139bcde	0	42	228ef
Red Bull	0	12c	185	181bcd	35	43	413bcd
Regiment	0	201a	106	63de	28	51	398bcd
Tom Cat	0	48c	93	245b	41	17	426bc
XPP 6001	0	36c	175	386a	0	43	597a
2815	0	96bc	93	72de	0	22	262def
7141	9	178ab	102	109bcde	94	33	492ab
8302	0	83bc	160	123bcde	0	30	366bcde
P. Value	0.47	0.0001	0.07	0.0001	0.53	0.06	0.0001
Sig.	ns	**	ns	**	ns	ns	**

[z]Within columns, means followed by different letters are significantly different according to Duncan's Multiple Range Test at 5%. **Significance at $P \leq 0.01$. *Significance at $P \leq 0.05$. ns = Non-significance

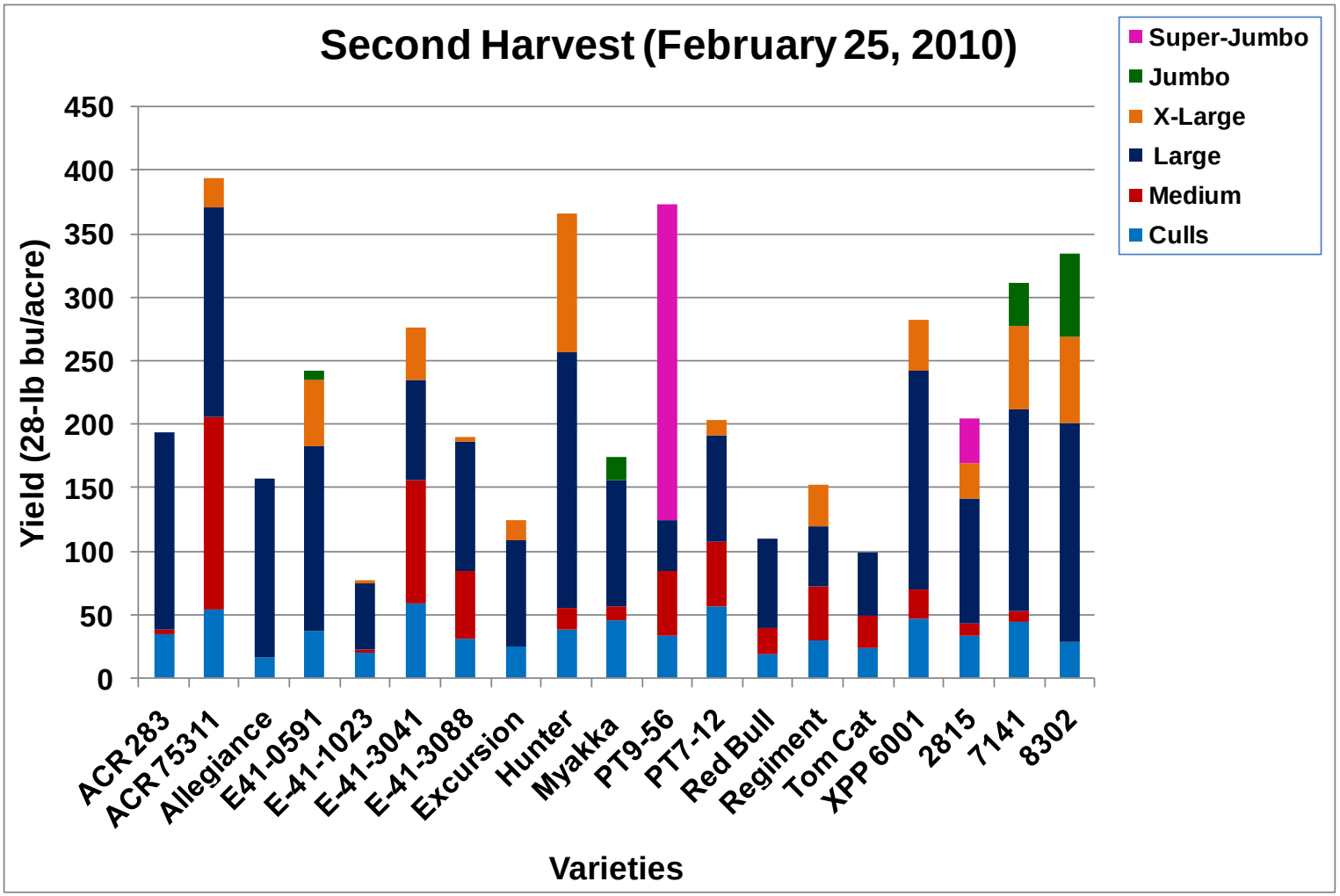

Figure 2. Second harvest marketable and unmarketable(culls) yield categories for selected pepper varieties grown in Palm Beach, FL. during winter 2009.

Table 5. Second harvest marketable and unmarketable (culls) yield categories for selected pepper varieties grown in Palm Beach, FL. during winter 2009.

Variety	Super-Jumbo	Jumbo	X-Large	Large	Medium	Culls	Total Marketable
			Yield (28-lb bu/acre)				
ACR 283	0	0b[z]	0	155	4	34	159
ACR 75311	0	0b	23	166	151	54	340
Allegiance	0	0b	0	140	0	17	140
E41-0591	0	8b	52	146	0	37	206
E41-1023	0	0b	3	52	3	20	57
E41-3041	0	0b	41	78	97	59	217
E41-3088	0	0b	3	102	54	30	159
Excursion	0	0b	16	84	0	25	99
Hunter	0	0b	109	201	17	38	327
Myakka	0	19b	0	100	11	45	129
PT 9-56	249	0b	0	41	51	33	341
PT 7-12	0	0b	12	84	52	56	147
Red Bull	0	0b	0	71	20	19	91
Regiment	0	0b	32	47	42	30	122
Tom Cat	0	0b	0	50	26	23	76
XPP 6001	0	0b	40	172	23	46	235
2815	36	0b	28	97	11	33	172
7141	0	35ab	66	159	8	45	267
8302	0	66a	67	172	0	29	305
P. Value	0.51	0.05	0.27	0.67	0.07	0.31	0.49
Sig.	ns	*	ns	Ns	ns	ns	ns

[z]Within columns, means followed by different letters are significantly different according to Duncan's Multiple Range Test at 5%. **Significance at $P \leq 0.01$. *Significance at $P \leq 0.05$. ns = Non-significance

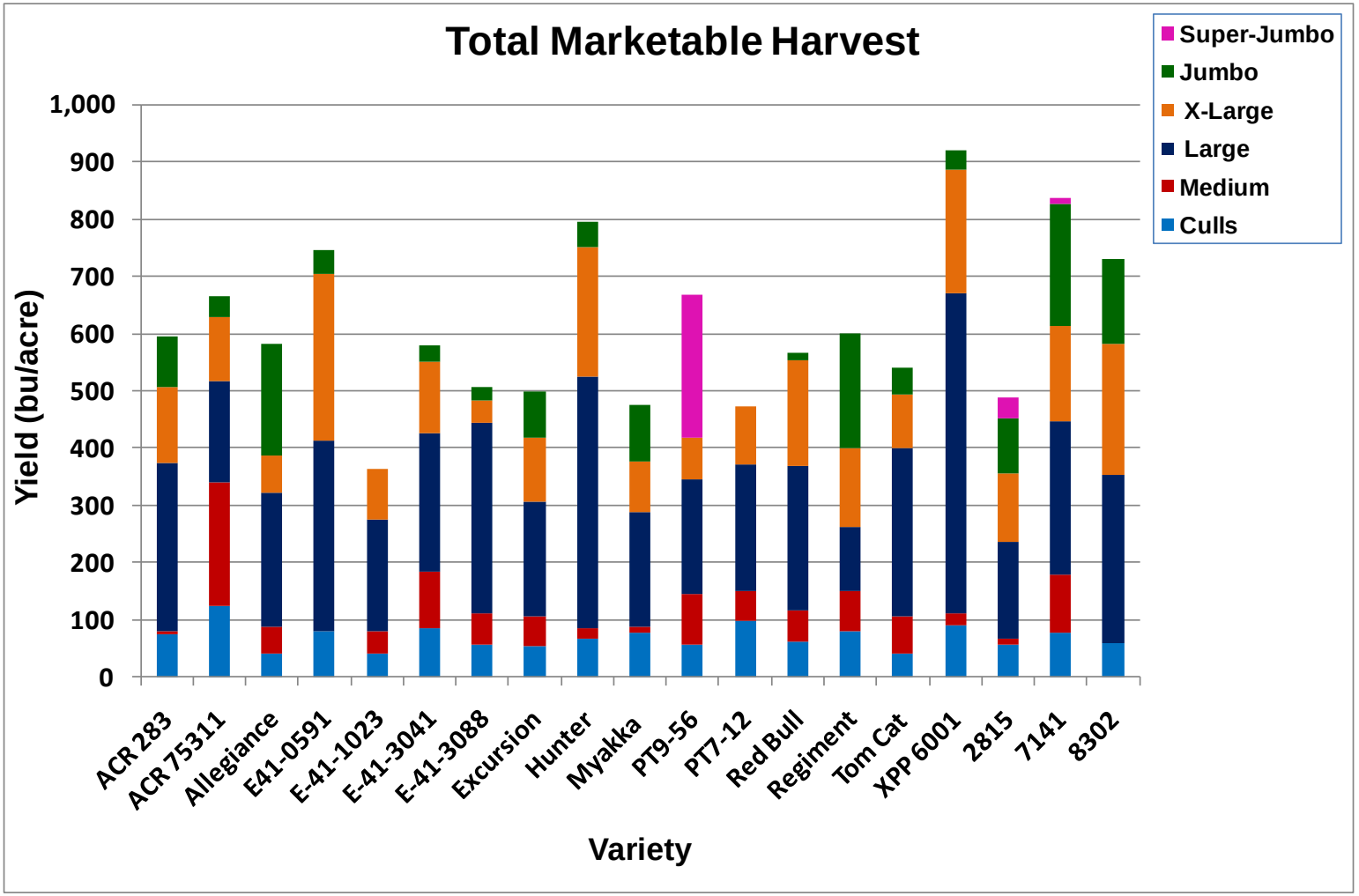

Figure 3. Total harvest marketable and unmarketable(culls) yield categories for selected pepper varieties grown in Palm Beach, FL. during winter 2009.

Table 6. Total harvest marketable and unmarketable (culls) yield categories for selected pepper varieties grown in Palm Beach, FL. during winter 2009.

Variety	Super-Jumbo	Jumbo	X-Large	Large	Medium	Culls	Total Marketable
			Yield (28-lb bu/acre)				
ACR 283	0	88bc[z]	133bcde	295bc	4	76abc	520abcd
ACR 75311	0	35c	111bcde	178c	217	123a	541abcd
Allegiance	0	194a	66de	233bc	47	42c	539abcd
E41-0591	0	43c	290a	334bc	0	79abc	667abc
E41-1023	0	0c	88bcde	196c	39	41c	322d
E41-3041	0	30c	124bcde	243bc	97	85abc	495abcd
E41-3088	0	24c	38e	335bc	54	56bc	451bcd
Excursion	0	81bc	109bcde	202c	51	53bc	444bcd
Hunter	0	44c	227ab	440ab	17	67bc	728ab
Myakka	0	99bc	87bcde	202c	11	76abc	399cd
PT9-56	249	0c	74cde	201c	87	57bc	611abcd
PT7-12	0	0c	101bcde	222bc	52	97ab	375cd
Red Bull	0	12c	185abcd	252bc	54	62bc	503abcd
Regiment	0	201a	138bcde	111c	70	81abc	519abcd
Tom Cat	0	48c	93bcde	295bc	66	40c`	502abcd
XPP 6001	0	36c	215abc	558a	23	89abc	832a
2815	36	96bc	121bcde	169c	11	56bc	434bcd
7141	9	213a	167abcde	267bc	101	78abc	759ab
8302	0	149ab	227ab	295bc	0	59bc	671abc
P. Value	0.52	0.0001	0.006	0.01	0.26	0.01	0.03
Sig.	ns	**	**	*	ns	*	*

[z]Within columns, means followed by different letters are significantly different according to Duncan's Multiple Range Test at 5%. **Significance at $P \leq 0.01$. *Significance at $P \leq 0.05$. ns = Non-significance

Table 7. Quality categories for selected peppers varieties at Palm Beach, FL. grown in winter 2009.

Variety	Lobules (number)	Length	Width	Thickness	Ratio
		---------- (in) ----------			
ACR 283	3.7	3.687cde[z]	3.493bcde	0.203def	0.984efg
ACR 75311	3.2	4.101ab	3.279i	0.205de	1.251a
Allegiance	3.4	3.439cde	3.338efg	0.219abcde	1.037bcdefg
E41-0591	3.6	3.467cde	3.501bcde	0.240a	0.993defg
E41-1023	3.3	3.389	3.403cdef	0.200ef	0.999defg
E41-3041	3.5	3.827ab	3.341defg	0.203def	1.150abc
E41-3088	3.2	3.337	3.251fghi	0.184f	1.034cdefg
Excursion	3.6	3.659bcde	3.35efg1	0.228abc	1.103bcde
Hunter	3.4	3.385	3.375cdef	0.231ab	1.009defg
Myakka	3.6	3.345	3.516bcd	0.207cde	0.974efg
PT9-56	3.3	3.391	3.150ghi	0.211bcde	1.085bcde
PT7-12	3.4	3.502cde	3.170ghi	0.212bcde	1.111bcde
Red Bull	3.3	3.570bcde	3.110hi	0.229ab	1.152ab
Regiment	3.5	3.462cde	3.736a	0.224abcd	0.935g
Tom Cat	3.7	3.648bcde	3.331fg	0.223abcd	1.104
XPP 6001	3.1	3.983a	3.269fgh	0.231ab	1.226a
2815	3.4	3.664bcd	3.399cdef	0.218bcde	1.083bcdef
7141	3.6	3.719abc	3.547bc	0.205de	1.052bcdefg
8302	3.7	3.454cde	3.657ab	0.212bcde	0.952fg
P value	0.52	0.0001	0.0001	0.0001	0.0001
Sig.	ns	**	**	**	**

[z]Within columns, means followed by different letters are significantly different according to Duncan's Multiple Range Test at 5%. **Significance at $P \leq 0.01$. *Significance at $P \leq 0.05$. ns = Non-significance

Table 7. Bacterial spot evaluation for selected peppers varieties grown in Palm Beach, FL. during winter 2009.

Variety	Boynton
ACR 283	4.3[z]
ACR 75311	1.9
Allegiance	1.9
E41-0591	3.0
E41-1023	3.3
E41-3041	1.5
E41-3088	0.5
Excursion	4.6
Hunter	0.0
Myakka	1.8
PT 9-56	0.0
PT 7-12	1.0
Red Bull	2.8
Regiment	1.3
Tom Cat	0.1
XPP 6001	0.0
2815	0.5
7141	0.0
8302	0.0

[z]***Rating: 0 = No disease, immune; 1 = highly resistant; 2 = moderately resistant; 3 = moderately susceptible; 4 = Susceptible; 5 = highly susceptible***

Foliar bacterial spot ratings were performed on January 14 and April 11 at the Immokalee trial. Two ratings were assigned per experimental unit on a 0 to 5 scale with 0 = no disease visible, and 5 = severe bacterial spot throughout entire canopy. Experimental design was a randomized complete block with for replications. Bacterial spot was considered moderate to severe at the time of rating at both locations. Many plants exhibited leaf dehiscence in the lower canopy and leaf necrosis in the upper canopy.