

PERFORMANCE OF 15 BELL PEPPER SELECTIONS IN SOUTHWEST MICHIGAN

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OBJECTIVE:

To evaluate adaptability of 15 bell pepper varieties to southwest Michigan growing conditions.

SUMMARY:

The fifteen bell peppers tested had variation in all traits evaluated. Total yield ranged from 1326 (2502) to 915 (SVR 9916480) bushels/acre. Average number one fruit weight ranged from 232 ('Legionnaire') to 181 ('Alexandra') grams. The best overall performing variety in 2004 was 'Excursion II'. 'Excursion II' was among the leaders in total yield, fruit weight and yield of number one, jumbo, extra-large and large fruit. 'Excursion II' also had a low yield of number 2 fruit.

METHODS:

Fertilizer: Prior to planting, 0-0-60, 33-0-0, Solubor and 90% Sulfur were broadcast and incorporated at 200, 150, 10 and 20 pounds/acre, respectively. After planting, 43 gallons/acre Nitro Formula (59-0-9-18Ca-B-Mg-Zn-Mn-Cu-Fe-PGR) was applied between transplanting and first fruit set. Another 15 gallons/acre was applied at first fruit set. Weekly fertilizations were then alternated between 20 pounds/acre Urea Mate (5-10-27 plus micronutrients) and 5 gallons/acre Nitro Formula. The first fertilizer application was done 7 June and the last 2 September 2004.

Fumigation/Herbicide: Beds were fumigated at shaping and plastic laying with 350 pounds/acre 67/33% Methyl Bromide/Chloropicrin. Weeds between rows were controlled through cultivation and hand hoeing when needed.

Planting: Seed was planted in a greenhouse 1 April in 72-cell trays. Plants were transplanted to the field on 18 May in raised, plastic mulched beds, 6" high and 24" wide. Plants were set in double rows on each bed, 14 inches between rows and 18 inches between plants in each row (10560 plants/acre). Beds were spaced on 5.5' centers. The trial was planted and analyzed as a completely randomized design with four replications, eight plants/replication. Each plot was bordered by two guard plants.

Harvest and data collection: Harvest was conducted 4 times; 3, 17 and 31 August and 14 September. Fruit was graded at each harvest into jumbo, extra-large, large, medium, number 2 and cull and converted to 1-1/9 bushels per acre (bu/a).

RESULTS:

Total yield of the 15 bell peppers evaluated ranged from 1326 (2502) to 915 (SVR 9916480) bu/a (Table 1). Ten other entries had statistically similar total yields to 2502 (Table 1). Yield from 2502 was primarily in large and medium-sized fruit (428 and 518 bu/a, respectively). 2502 was among the lower yielding varieties for jumbo and extra-large fruit. The largest number of jumbo came from 'Excursion II' at 187 bu/a and the largest number of extra-large came from 'ACX 238'. Other entries were statistically

similar to 'Excursion II' and 'ACX 238' in these two traits. Yield of all number one fruit ranged from 1132 (2502) to 728 ('Red Knight') bushels/acre.

The largest fruited entry was 'Legionnaire', which had an average fruit size of 232 grams (Table 1). Only 'Alexandra' was statistically smaller in average number one fruit size at 181 grams per fruit. Nearly half (49%) of 'Alexandra's' fruit graded out as medium and only 6% were jumbo or large.

'Red Knight' had the highest number of culled fruit. Most fruit from all entries was culled due to Blossom End Rot and associated secondary pathogens. However, only three other entries (2502, 'Orion' and SVR 9916480) had a lower incidence of Blossom End Rot.

The only entry not resistant to Bacterial Leaf Spot races 1, 2 and 3 was 2502. This is somewhat disturbing since it was the highest yielding entry. Fortunately other entries had statistically similar yields and were more economically attractive to growers due to their larger fruit size.

Color and fruit shape varied between selections. 'Aristotle', 'Orion' and 2502 appeared to have darker green fruit. 'Legionnaire', 'Golden Sun', ACX 238 and 2506 appeared to have somewhat lighter colored fruit. 2502 had a significant number of short, blocky fruit as indicated by the increased number of No. 2 fruit (Table 1).

The best overall performing variety in the 2004 trial was 'Excursion II'. It was second in total yield (1228 bu/a), yield number one (1101) and average number one fruit size (231 grams). It was highest in yield of jumbo fruit, third in extra-large and large yield, eleventh in medium yield and no number two fruit. "Excursion II" is also resistant to Bacterial Leaf Spot races 1, 2 and 3.

Table 1. Yield in 1-1/9 bushels/acre of 15 bell pepper varieties at the Southwest Michigan Research and Extension Center in 2004.

Variety	SS*	Total Yield	Yield No. 1	Average No.1 wt	% No. 1	Yield Jumbo	Yield Xlrg.	Yield Lrg.	Yield Med.	Yield No2	Yield Cull	Yield BLS**
2502	HZ	1326	1132	194	86	6	180	428	518	142	51	-
Excursion II	AC	1228	1101	231	90	187	346	382	186	0	127	1,2,3
Aristotle	AS	1212	1029	222	84	166	389	298	176	31	151	1,2,3
Golden Sun	HZ	1186	962	201	81	22	196	425	320	76	148	1,2,3
ACX 238	AC	1152	974	224	85	105	407	340	122	45	133	1,2,3
Crusader	RG	1133	896	204	79	64	228	377	226	54	182	1,2,3
SVR2703198	AS	1124	928	213	83	71	289	354	215	35	160	1,2,3
Legionnaire	RG	1113	908	232	82	164	308	298	138	30	174	1,2,3
2506	HZ	1068	896	210	84	57	215	343	280	11	161	1,2,3
Socrates	AS	1066	843	206	80	61	285	334	162	32	191	1,2,3
Red Knight	AS	975	728	207	75	72	223	267	166	20	227	1,2,3
Alexandra	HZ	964	825	181	85	7	51	298	469	30	108	1,2,3
SVR2792073	AS	961	765	216	79	39	266	330	130	21	175	1,2,3
Orion	EZ	941	842	213	89	114	241	267	220	26	73	1,2,3
SVR 9916480	AS	915	804	206	88	42	229	330	203	28	83	1,2,3
Isd0.05		272	261	19	13	113	145	117	111	76	124	

*SS = Seed Source; HZ = Hazera Seeds; AC = Abbott & Cobb; AS = Asgrow Seeds; RG = Rogers Seeds; EZ = Enza Zaden.

**BLS = Bacterial Leaf Spot; 1, 2, 3 = Resistance to BLS races 1, 2 and 3.