

Evaluation of 15 Specialty Pepper Cultivars In Southwest Michigan

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Objective:

To evaluate performance of 15 specialty pepper cultivars for adaptability to Southwest Michigan growing conditions.

Summary:

All 15 entries yielded satisfactorily under Southwest Michigan conditions. The five harvests between 11 August and 5 October essentially picked all fruit on all entries. This was true even for the mini sweets that need to reach mature color prior to harvest and for the habaneros that are typically late maturing. Data was not subjected to statistical analysis due to differences in fruit type.

Methods:

Fertilizer: Prior to planting, potassium, sulfur and boron were broadcast at 100, 25 and 2 pounds per acre, respectively. After planting, nutrients were applied through the drip irrigation system using Nitro Plus (18N-5Ca-1.5Mg and a proprietary growth regulator) at 15 gallons/acre on 6/13, 6/20, 6/27, 7/5, 7/11 and 7/18 and Harvest More Urea Mate (5-10-27 plus minor nutrients) at 20#/acre on 7/25, 8/1, 8/8, 8/15, 8/22, 8/29, 9/5 and 9/12 for a total of 188# nitrogen and 150# potassium/acre.

Weed control: Weeds were controlled by black plastic on the beds. Between row weeds were suppressed with Gramoxone using a backpack sprayer.

Planting: Plants were started in the greenhouse 7 April and planted to the field 2 June. Plants were set on raised, black plastic mulched beds, 6" high, 22" wide at the top and 5.5-feet on center. Plants were set in double rows 14" between rows and 18" in the row (10560 plants/acre). The trial was planted as a completely randomized design with 16 plants per plot and four replications. Plots were separated by four guard plants.

Plant care: Plots were irrigated as needed and insects and diseases controlled using standard commercial practices.

Harvest and data collection: Harvest was conducted 11, 24 August and 7, 21 September and 5 October, 2016 and graded into number 1, number 2 and cull fruit. Each category was counted, weighed and converted into bushels per acre. Average number one fruit weight was also determined. Due to the wide variety of fruit types the data was subjected to statistical analysis.

Results:

The 2016 growing season was good for pepper production in Southwest Michigan. Planting was a week later than usual for this trial. Plant growth seemed slow early in the season and fruit set was later, that is why an additional pre-fruit set application of Nitro Plus was applied. The season turned out warmer allowing plants to reach full size and mature nearly all the fruit.

Yield data is shown in Table 1. Data was not subject to statistical analysis due to the large differences in fruit type. It also did not make sense to compare within fruit types since numbers were limited and two only had one entry. Nevertheless, results are of interest since it is an indication of how well entries performed under Southwest Michigan conditions in 2016. Pictures of the entries are shown in Figures 1 – 7.

All entries “fruited out” in 2016. That is, at the fifth and final harvest there were few if any fruit left for a sixth harvest. This is especially important for the three mini-sweets and the three habaneros. Mini sweets require enough time to change color before harvest and habaneros are generally late to mature. This was partly due to the warm season experienced in Southwest Michigan in 2016. However, in a more normal year these could be scheduled for a planting 10 to 14 days earlier than they were in 2016. This indicates these fruit types could be planted and fruited successfully in this area.

The habanero “Rey Pakal” proved to be a mixed genotype with primarily red fruit but some plants yielded light orange fruit (Figure 6). This was true throughout all ‘Rey Pakal’ plots. BH 10344 had longer fruit than what is typical for a habanero so it might not be attractive to some producers and consumers. However, 10520 was fairly uniform in size and color and was quite attractive with a shiny red, almost porcelain appearance. It did have some slight shoulder cracking after a period of heavy rain. These cracks could potentially lead to post-harvest decay.

The three sweet bananas had the earliest yield and had quite a range in average number one fruit size, 45.6 grams/fruit for RPP28758 to 68.7 grams for ‘Goddess’. At 61.1 grams/fruit ‘Cavalcade’ was similar to ‘Goddess’ (Table 1).

Table 1. Yield in bushels/acre and number 1 fruit size of 15 specialty peppers grown at the Southwest Michigan Research and Extension Center, Benton Harbor, Michigan in 2016. Average number one fruit weight is in grams. Plant population was approximately 10,560 plants per acre.

Fruit Type and Entry	Seed Source	Total Yield	Yield No. 1	Avg. Weight No. 1 Fruit	Yield No. 2	Yield Cull
Sweet banana						
Goddess	UA	1404	1103	68.7	125	176
Cavalcade	SY/RG	1115	772	61.1	180	163
RPP28758	SY/RG	1076	681	45.6	166	229
Italian Roaster						
Escamillo	JSS	1366	916	105.1	257	193
Carmen	JSS	1148	803	82.4	162	183
Jalapeno						
Lexus	UA	1190	1008	37.1	90	92
Jedi	UA	698	464	30.7	100	134
Mini Sweet						
Red Sweetie	TS	825	671	38.0	71	82
Yellow Sweetie	TS	812	660	25.8	86	66
Orange Sweetie	TS	745	568	30.6	85	92
Habanero						
BH 10344	PAN	837	656	25.0	87	94
10520	PAN	733	565	19.2	62	105
Rey Pakal	PAN	630	504	21.4	78	48
Serrano						
Altiplano	UA	993	880	25.4	61	52
Poblano						
Masivo	UA	956	720	83.8	138	97

Seed Source: UA = Us Agriseeds, SY/RG = Syngenta/Rogers, Johnny's Selected Seeds, TS = Tozer Seeds, PAN = PanAmerican.