

Title: Green Slicer Cucumber Variety Trial Year 1
Report to:
Pennsylvania Vegetable Marketing Research Board

Personnel:

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Introduction

Demand by major grocery chains for locally produced slicing cucumbers has increased dramatically in recent years. Most growers continue to produce their older standard varieties due to experience in production and harvest management. In 2012 we reviewed as many of the currently available cucumber varieties as could be found from regional seed outlets. One interesting aspect of this newer marketing opportunity is the premium placed by some buyers from the grocery chains on 'super jumbo' sizes of cucumbers. This trial took place at the PSU Southeast Agricultural Research and Extension Center (SEAREC / Landisville) and at the Franklin County Horticultural Center. The 2013 trial will use many of the same varieties, but move several varieties into a trellised high tunnel production system.

Objectives

- Identify slicing cucumber cultivars that have promise as successful market varieties.
- Rate cultivars as to their resistance and susceptibility to powdery and downy mildew in a standard disease management program.
- Identify cultivars that are considered superior in flavor and appearance.
- Produce saleable yield data (size, avg. weight, etc.) for the cultivars in this program in order to allow growers to select varieties that meet their marketing criteria.

Methodology

All varieties were replicated 4 times in 10 plant blocks on raised-bed plastic at the Penn State Southeast Research and Extension Center (SEAREC) in randomized block planting pattern. Plants were set 12" apart in row, in blocks with 8' between rows in order to keep the fruit separate as the vines develop. We followed the pest management guidelines in the Penn State 2012 Vegetable Guide to control weeds (between rows), diseases and insects. Downy mildew preventative materials were only used once the nearby Sentinel plots showed symptoms.

The plants were regularly evaluated for the development of diseases, specifically Powdery and Downy mildew. Fruit were harvested for yield, individual weight, and length. Tissue samples of the vines were submitted to Agri-Analysis for nutrient recommendations. Soluble fertilizers were applied through the drip system based on these tissue samplings.

Harvest Data

Cultivar	% less than 8 inch	% 8-9 inch	% 9-10 inch	% 10 inch +	% cull	Total Yield Count / Acre	Total Yield Wgt / Acre
Marketmore 76	73%	25%	2%	0	9%	51,909	#23,266
Cobra	60%	40%	0	0	14%	76,230	#31,812
Sweet Slice	17%	17%	28%	39%	12%	70,471	#26,366
Cutter	84%	13%	3%	0	31%	74,960	#25,945
Sweet Success	12%	26%	20%	43%	19%	61,710	#33,792
Darlington	67%	30%	3%	0	16%	61,347	#28,460
Rockingham	67%	16%	10%	7%	24%	70,422	#26,953
Gold Standard	70%	21%	7%	3%	11%	46,101	#25,813
Fanfare	46%	36%	17%	2%	9%	66,248	#28,608
Sweeter Yet	21%	22%	22%	35%	16%	69,515	#30,557
Corinto	53%	38%	9%	0	22%	53,361	#20,580
Python	57%	31%	11%	1%	14%	70,785	#30,637
Talledega	65%	25%	11%	0	14%	54,087	#25,017
SVR14763462	43%	34%	19%	5%	8%	62,981	#28,260
Intimidator	47%	32%	14%	7%	14%	62,812	#24,639
Boa	71%	26%	3%	0	12%	80,949	#31,345
SVR14784719	51%	33%	12%	4%	8%	65,340	#27,985
Speedway	72%	23%	1%	3%	9%	63,888	#26,461
General Lee	75%	20%	4%	1%	8%	74,960	#27,779
Dasher II	66%	31%	2%	1%	7%	79,316	#30,247
Summertop	5%	5%	13%	76%	18%	64,796	#31,882
Tamazula	62%	28%	10%	0	16%	54,450	#21,553

Variety Comments

Marketmore 76: This non-hybrid variety has been around for a very long time, yet still compares well with many much newer hybrids. The fruit are largely on the smaller (less than 8") size, but the cull rate was low and the overall quality high. Yields were among the lowest for this trial. Minimal infection with either PM or DM under a standard preventative program. Monoecious.

Cobra: High yields and reasonable packouts with most fruit ripening at 7-9". Good looking dark green fruit. Minimal infection with either PM or DM under a standard preventative program. Gynoecious.

Sweet Slice: The highest yields of the greatest percentage of long fruit (10-12"). Very low cull rate for these long fruit (12%). Dark and thin skinned. Minimal infection with either PM or DM under a standard preventative program.

Cutter: High yields of short, blocky fruit, but one of the highest cull rates of the trial. These plants did perform well as the season got hotter. Minimal infection with either PM or DM under a standard preventative program.

Sweet Success: The highest percentage of 10" plus fruit of any variety. High yields of thin skinned, low seed fruit. Minimal infection with either PM or DM under a standard preventative program.

Darlington: High yields and reasonable packouts with most fruit ripening at 7-9". Good looking dark green fruit. Minimal infection with either PM or DM under a standard preventative program.

Rockingham: High yields and with some of the largest fruit ripening at greater than 9". Disappointing cull rate that could have been tied to the high heat of the 2012 growing season. Good looking dark green fruit. Minimal infection with either PM or DM under a standard preventative program. Gynoecious.

Gold Standard: Very light colored cucumber reported to have high beta carotene. Lower yields, but a low cull rate. Good spread of fruit between 7 and 9". Minimal infection with either PM or DM under a standard preventative program.

Fanfare: High yields on very compact vines. This 1994 All-America Selections Winner does well in both containers and under field conditions. High quality, dark green fruit. Very low cull rate. Minimal infection with either PM or DM under a standard preventative program.

Sweeter Yet: Among the highest yields of longer fruit with some pushing 12". Very good yields of thin skinned fruit with few seeds. Reported to have both PM and DM

resistance. Minimal infection with either PM or DM under a standard preventative program. Gynoecious.

Corinto: Lower yields than most with relatively high cull rate. Probably better in a high tunnel or greenhouse which is where it will be trialed in 2013. Very nice looking fruit. Gynoecious and Parthenocarpic

Python: High yields and with some of the largest fruit ripening at greater than 9". Very consistent harvests throughout the hottest part of the season. Good looking dark green fruit. Minimal infection with either PM or DM under a standard preventative program. Gynoecious

Tallegda: Higher early yields that tailed off as the season got hotter. Good fruit quality early. Reported to have good PM resistance. Minimal infection with either PM or DM under a standard preventative program. Gynoecious.

SVR14763462: This and SVR14784719 are some of the first varieties of cucumbers bred with strong DM resistance. While the yields were moderate, the fruit quality was good, the cull rate low and the harvests consistent. No PM or DM noted.

Intimidator: Relatively low yields, but one of the highest percentages of large fruit in the trial. Very consistent yields of larger fruit. Fruit are a bit lighter in color, but still dark enough for most markets. Minimal infection with either PM or DM under a standard preventative program. Gynoecious

Boa: Highest yields in the trial with most of the fruit ripening at 7- 9". Reasonable cull rate even at very high yields. Very consistent harvests. Good looking dark green fruit. Minimal infection with either PM or DM under a standard preventative program. Gynoecious

SVR14784719: This and SVR14763462 are some of the first varieties of cucumbers bred with strong DM resistance. While the yields were moderate, the fruit quality was good, the cull rate low and the harvests consistent. Slightly higher yields than SVR14763462. No PM or DM noted.

Speedway: Moderate yields and reasonable packouts with most fruit ripening at 7-9". Very low cull rate. Good looking dark green fruit. Minimal infection with either PM or DM under a standard preventative program. Gynoecious.

General Lee: Very high yields, good fruit quality and consistent harvests with excellent looking fruit. Very low cull rate. This variety performed very well in the high heat of 2012. Gynoecious.

Dasher II: Among the higher yields in the trial with most of the fruit ripening at 7- 9". Very low cull rate even at very high yields. Very consistent harvests. Good looking dark

green fruit. Minimal infection with either PM or DM under a standard preventative program. Gynoecious

Summertop: Very high yields of 10-12" fruit. Reported to have both PM and Dm resistance. Minimal infection with either PM or DM under a standard preventative program.

Tamazula: Moderate to low yields, but high quality fruit. This greenhouse variety performed poorly in the field. Minimal infection with either PM or DM under a standard preventative program.

Seed Sources: Johnny's Seeds, Seedway Seeds, Ball Seeds, and Burpee Seeds.

