

Performance of Slicing Cucumber Cultivars, Plateau Experiment Station, 2000

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Interpretative Summary

Most cultivars that were evaluated in the trial performed well. 'Dasher II' was more productive than 'Prolific', 'Slice King', 'Sweet Slice', and 'XP 1901' in marketable yield. Fruit of 'SRQS 2387', 'SRQS 2389', 'Vlasstar B', 'XP1901', and 'XP 1904' was relatively rough while fruit of 'Sweet Slice' was among the smoothest. Fruit of 'Speedway', 'Thunder', and 'Daytona' was darker than several of the other cultivars.

Introduction

Cucumbers are grown on a rather limited acreage in Tennessee. Cucumbers have been identified as a crop that has potential for increased production. The market prefers dark green, straight, and long cucumber fruit. The more popular types of cucumbers grown for fresh market are standard slicing type. Burpless cucumbers have become more popular in recent years, and are milder than the standard slicing cultivars. Pickling type cucumbers are also grown for fresh market. Pickling type cultivars usually are shorter, lighter in color and have smaller seeds and seed cavities than slicing type cultivars. Many of the newer cucumber cultivars have resistance to many diseases. An experiment was conducted at the Plateau Experiment Station at Crossville, TN in 2000 to evaluate performance of 15 cucumber cultivars for fresh market usage.

Materials and Methods

The site was prepared for planting by conventional tillage in late April. Fertilizer was broadcast at 300 lb/A of 15-15-15 before final disking on May 8. Four foot wide black plastic mulch was laid on six ft centers on May 9. Plots were direct seeded on May 9. Plot size was one row, 12 ft long and contained 8 plants. Experimental plot design was a randomized complete block with four replications. Row middles were cultivated on June 26. Carbaryl (Sevin XLR) at 1 lb ai/A was applied for insect control on May 17. Esfenvalerate (Asana) was applied for insect control on June 9, June 12, June 23, and July 13. Mancozeb (Dithane DF) at 1.6 lb ai/A and chlorothalonil (Bravo) at 1.5 lb ai/A were applied on June 12, June 23, July 3, and July 11. The cucumber plants were staked with a 54 inch stake driven between each two plants and a string trellis was extended between stakes and was used for support of the cucumber vines.

Twelve harvests were made between June 30 and July 26. Yields were recorded by number and weight of marketable, oversize, and cull fruit. Fruit were measured for length and rated for characteristics at the July 12 harvest date. Three to five fruit were used for these determinations. Ratings were made on a 1 to 10 scale with 10 being the smoothest, straightest, or darkest in appearance.

Results and Discussion

The cucumber cultivars performed well, but bacterial wilt developed on many plants late in the production season. This disease reduced the number of harvests and total yield for the trial, as plant productivity stopped when the disease occurred. Although five insecticide applications were made, several cucumber beetles were observed on June 23, and an application of Asana was made after the insects were observed. Those beetles likely caused the infestation of bacterial wilt.

'Dasher II' produced a higher yield in marketable tons per acre than 'Prolific', 'Slice King', 'Sweet Slice', and 'XP 1901' (Table 1). 'Vlasstar B' and 'XP 1904' were among cultivars that produced the highest number of marketable fruit per acre. 'Vlasstar B' produced a rather high level of oversize fruit in tons and number per acre. The weight of cull fruit did not vary due to cultivar. 'Thunder' was among cultivars that produced the largest number of cull fruit per acre.

Fruit length was longer for 'Sweet Slice' than for all cultivars except 'Prolific', 'Speedway', and 'Thunder' (Table 2). 'Vlassar B', 'XP 1901', and 'XP 1904' produced shorter fruit than the other cultivars. These three cultivars are pickling type which normally produce shorter fruit than the standard slicing cultivars. 'Sweet Slice', a burpless type cultivar, was smoother than 'SRQS 2387', 'SRQS 2389', and the pickling type cultivars; 'Vlasstar B', 'XP 1901', and 'XP 1904'. Pickling type cultivars are usually less smooth than slicing type cultivars. There were no significant differences among cultivars for the rating of fruit curvature. 'Speedway', 'Thunder', and 'Daytona' were among cultivars rated darkest for fruit color.

Table 1. Yield of cucumber cultivars evaluated at The University of Tennessee Plateau Experiment Station at Crossville, 2000.

Cultivar	Marketable yield tons/A	Oversize yield tons/A	Cull yield tons/A	Marketable yield no./A	Oversize yield no./A	Cull yield no./A
Dasher II	16.8 a ²	3.1 abcd	1.1 a	77440 ab	6807 bc	9075 ab
Prolific	10.9 bcd	3.6 abc	0.3 a	54753 cde	7412 bc	2723 d
Slice King	9.4 cd	2.9 abcd	0.9 a	45375 e	5899 bc	2573 d
Slice Max	14.8 ab	4.4 ab	0.7 a	70483 a-e	8017 abc	4992 bc

Speedway	13.6 abc	1.5 d	0.9 a	75323 abc	3328 c	8773 abc
SRQS 2387	11.9 abcd	2.1 cd	0.5 a	61710 b-e	4387 c	5597 a-d
SRQS 2389	14.2 abc	2.3 bc	1.0 a	73627 abc	5445 bc	9075 a-d
Sweet Slice	11.6 bcd	2.6 bcd	2.4 a	43712 e	4689 bc	2573 d
Thunder	14.2 abc	1.6 bc	1.0 a	74264 abc	3933 c	11041 a
Vlasstar B	13.0 abc	4.8 a	1.1 a	75777 a	12403 a	9831 abc
XP 1901	7.6 d	1.4 d	0.7 a	48713 de	4084 c	9378 abc
XP 1904	12.0 abcd	3.1 abcd	0.7 a	89994 a	9983 ab	10890 ab
Turbo	12.5 abc	2.5 bcd	0.5 a	64585 b-e	11495 a	4689 cd
Indy	14.5 abc	1.6 bcd	0.7 a	76230 abc	4084 c	6504 a-d
Daytona	15.1	1.8 bc	0.5 a	76230 abc	3782 c	5748 a-d

^z Means within a column followed by the same letter are not significantly different at the 0.05 level of probability, Duncan's multiple range tests.

Table 2. Fruit length and quality ratings of smoothness, curvature, and color for cucumber cultivars at The University of Tennessee Plateau Experiment Station at Crossville, 2000.

Cultivar	Fruit length inches	Smoothness rating ^y	Curvature rating ^y	Color rating ^y
Dasher II	7.44 c ^z	8.25 ab	8.0 a	7.75 bc
Prolific	8.06 abc	8.25 ab	8.0 a	8.00 abc
Slice King	7.44 bc	8.25 ab	7.8 a	8.00 abc
Slice Max	7.88 bc	8.25 ab	7.8 a	8.50 ab

Speedway	8.00 abc	7.25 abcd	7.0 a	8.75 a
SRQS 2387	7.94 bc	7.0 cd	7.0 a	8.00 abc
SRQS 2389	7.88 bc	6.75 cd	7.2 a	8.25 ab
Sweet Slice	8.81 a	8.05 a	7.0 a	8.00 abc
Thunder	8.00 abc	7.75 abc	7.5 a	8.75 a
Vlasstar B	5.62 d	6.75 cd	7.5 a	6.50 d
XP 1901	5.25 d	6.50 d	7.2 a	6.50 d
XP 1904	5.56 d	7.00 d	7.0 a	7.75 bc
Turbo	7.62 c	7.25 bcd	8.0 a	8.50 ab
Indy	7.75 bc	7.50 abc	7.2 a	8.50 ab
Daytona	7.88 bc	7.50 abc	6.2 a	8.75 a

^y Ratings on a scale of 1 to 10, 10=smoother, straighter, or darker color.

^z Means within a column followed by the same letter are not significantly different at the 0.05 level of probability, Duncan's multiple range tests.

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This research represents one season's data and does not constitute recommendations. After sufficient data is collected over the appropriate number of seasons, final recommendations will be made through research and extension publications.