

Pumpkin Cultivar Evaluation in Ohio

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Introduction

Pumpkins are the third largest fresh market vegetable in OH with nearly 5,000 acres in production. Pumpkins account for 10 to 40 % of annual gross income for some vegetable producers. It is important for our producers to use cultivars that consistently produce high yields of quality fruit. Of equal importance is to incorporate new cultivars into the program that provide good disease tolerance in order to reduce pesticide input and production costs while maintaining high quality. This project was supported in part by a research grant from the Ohio Vegetable and Small Fruit Research and Development Program.

Methods

Eighteen cultivars were evaluated at the OARDC Western branch in South Charleston, OH. Prior to planting, 100 lbs/A of actual N, P₂O₅ and K₂O was applied. An additional 30 lbs of actual N per acre was sidedressed prior to vine tip. All plots were transplanted on May 30, 2006. All transplants were germinated in 72 cells deep, 7–10 days prior to transplanting. Admire, for cucumber beetle and bacterial wilt control, was applied to the seedling trays the day of transplanting. Plots were 30 feet long with 10 feet between rows and 3 feet between plants in the row. Strategy was applied for weed control pre-planting. The experiment was conducted as a randomized complete block design with 4 replications. Trickle irrigation was available for all plots and was used 2-3 times per week from late June through August. A standard disease control program included the fungicides: Cabrio, Nova, Bravo and Quintec. Bravo + Nova was applied on: 24 Jul, 7 Aug, 21 Aug, alternating with Cabrio applied on: 31 Jul, 16 Aug. and Quintec 6 Sep. A boom sprayer with cone nozzles at 40 psi was used for fungicide application. A standard insect control program included Sevin XLR in late season to control beetle feeding on fruit. Fruit were harvested 15 and 18 September, 2006.

Results

Cultivars are listed in Table 1 ranked according to tons produced per acre. Five small types (< 4lbs/fruit) are at the bottom of the table and listed by the number of fruit produced per acre.

The highest yielding varieties (>20 lbs per fruit) in terms of tons per acre were: SVT13056393, RPX768, SVT13056400, Gold Medallion and SSX 5030 with RPX 768 having the highest average fruit size at 25 pounds. In second place was SVT13056393 with 22 lbs/fruit which produced the highest yield at 34 tons per acre and Gold Medallion at 21 lbs/fruit and 26 tons/A.

The highest yielding varieties in the 16 to 20 lb fruit size category were: HMX 6685, Gold Medal, and Gladiator which produced 27 tons but only averaged 16.6 pounds per fruit. HMX 6685 produced 26 tons. 18 Karat Gold and Gold Challenger both produced fruit over 16 pounds with yields ranging from 21 to 19 tons/A.

In the small types, SSX 5001 produces nice, small, round fruit, slightly over 0.5 lbs. Prankster is a 3.5 lb fruit with a slightly flatten appearance and nice handles.

Powdery mildew tolerance was evaluated on 5 September, 2006. The only varieties with 20% or less of the bottom of the leaves infected by powdery mildew were: SVT 13056393, Gladiator, SVT 13056400, HMX 6685, SSX 5030, Magic Lantern, and Gold Bullion. The small types

included: Gold Dust, Touch of Autumn and Wee-Be-Little. Most of the fruit handles had little powdery mildew infection and there was no significant difference between varieties. The SVT lines had good resistance to watermelon mosaic (WMV), the predominant virus in OH. Foliar symptoms did appear in September but the fruit exhibited no virus symptoms. By contrast, most other varieties exhibited foliar symptoms in early August with fruit symptoms. The SVT cultivars are GMO lines and not likely to be on the market in the near future.

Individual pictures of each variety plus comparison views among varieties are available at the VegNet website: <http://vegnet.osu.edu>

Table 1, 2006 Pumpkin Cultivar Evaluation, South Charleston, OH

ID #	Variety	Marketable Orange Fruit/A	Marketable Orange Tons/A	Average Fruit Size (lbs)	Fruit Diameter (in)	Foliar Powdery Mildew Rating Top ¹	Foliar Powdery Mildew Rating Bottom ¹	Downy Mildew Rating ²	Microdochium ³	Source
18	SVT 13056393	3,093	34.1	22	12.7	0	4.4	0.25	0.75	SM
16	Gladiator	3,267	27.4	16.6	11.5	0	2.8	0.25	1.6	HM
8	RPX 768	2,134	27.3	25.6	13	0.6	46.2	0.8	2.4	RU
17	SVT 13056400	2,701	26.6	19.7	12.1	0	2.1	0	1.4	SM
10	Gold Medallion	2,439	25.8	21	11.9	0.5	82.5	0.25	2	RU
14	HMX 6685	2,788	25.6	18.4	11.9	0	0.68	0	1.8	HM
12	SSX 5030	2,265	22.7	20.1	12.6	0	12	0	1.2	SK
15	Magic Lantern	2,962	21.6	15	9.7	0.25	11	0	2	HM
3	18 Karat Gold	2,614	21.3	16.6	10.4	0	32	1	2.1	RU
7	Gold Bullion	2,701	19.1	14.3	11.4	0.06	6.2	0	1.3	RU
5	Gold Medal	1,917	19.1	19.2	11.9	0.5	73	1.5	1.3	RU
11	Gold Challenger	2,178	17.3	16.2	11.3	0.5	45	0.5	0.8	RU
9	20 Karat Gold	1,615	12.6	15.7	11.2	0	53.7	0.75	1.5	RU
	<i>Small Types</i>									
6	Gold Dust	28,270	7.3	0.5	3.6	0	9.3	0	1.3	RU
13	SSX 5001	19,036	7.3	0.7	3.7	0.06	65.6	0.5	0.7	RU
2	Touch of Autumn	9,365	11.9	2.5	5.3	0	8.4	0	0.7	RU
1	Wee-Be-Little	8,930	2.9	0.6	4.1	0.12	20	0.5	1.3	RU
4	Prankster	5,576	9.5	3.4	6.4	0.06	52.5	0	1	RU
	LSD 0.05%	3280	8.36	4.1	1.2	0.51	19.4	0.9	1.1	

Key To Disease Ratings in Table 1.

1. Powdery Mildew: Percentage of leaf area infected on top and bottom of the leaf. Average of 2 rankers, each using five leaves per plot.
2. Downy Mildew Rating on foliage: 0 = none, 1 = low, 2 = medium, 3 = high.
3. Microdochium (Plectosporium or White Speck) Rating on foliage: 0 = none, 1 = low, 2 = medium, 3 = high.

