Pumpkin Cultivar Evaluation in Ohio, 2008

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Introduction

Pumpkins are the third largest fresh market vegetable in Ohio with nearly 7,000 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 the need 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

Twenty-four cultivars were evaluated at the OARDC Western branch in South Charleston, Ohio. Prior to planting, 100 lbs/A of actual N, P_2O_5 and K_2O was applied. All plots were transplanted on June 10. All transplants were germinated in 5 x 3.5 cm Elle pots 10 days prior to transplanting. Admire, for cucumber beetle and bacterial wilt control, was applied to the seedlings two days prior to transplanting. Plots were 30 feet long with 15 feet between rows and 4 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 four replications. Trickle irrigation was available for all plots and was used two times per week from mid- to late July through August. A standard disease control program included the fungicides: Quadris Opti on August 4, and September 12 and 17; Procure + Bravo on August 12 and 26, and September 8; and Quintec on August 19. A boom sprayer with cone nozzles at 40 psi was used for fungicide application. A standard insect control program included Sevin XLR on September 14, 20, and 17 to control beetle feeding on fruit. Fruit were harvested on September 18.

Results

Cultivars are listed in Table 1 ranked according to fruit size and tons produced per acre. The top five varieties in terms of tons per acre produced were: RPX1626 (17 tons/A), SSX 5120 (15 tons/A), Camaro (15 tons/A), RPX1621 (13 tons/A), and HSC166014 (12 tons/A). Yield was slightly depressed this year from water damage (second wettest June in central Ohio on record) and herbicide damage from sonalan (one component of Strategy) which stunted vine growth early in the season.

SSX 5120 produced the largest fruit, averaging 31 lbs and significantly more than all other varieties in the trial. In the 18- to 20-pound fruit size category, the top five were: RPX1621 (20 lb), Solid Gold (19 lb), HSC166014 (19 lb), Camaro (18 lb), and RPX 1626 (18 lb).

SSX 5120 is an attractive, large pumpkin that has produced well in two years of the trial. Seed should be available for the 2009 season. RPX 1626 and RPX 1621 are very attractive in the mid-size category. Camaro has very good powdery mildew resistance and slightly smooth skin. HSC144 014 is round to slightly upright with nice ribbing. Moonshine is an attractive and

productive white variety producing 6 tons/A with an average fruit size of 6 pounds. Seed, if not available for 2009, should be available for 2010.

Powdery mildew tolerance was evaluated twice near the end of the season but only the last evaluation on September 16 is listed in Table 1. The fungicide spray program was effective in controlling powdery mildew on the top leaf surface. Only five varieties showed any evidence of disease on top of the leaves, but less than 5%. The powdery mildew severity on the lower surface (% leaf coverage) ranged from 3% to 57%. Only 11 varieties had a percent severity of 11% or less (see Table 1.). Camaro had the best resistance with only 3% powdery mildew leaf coverage. Downy mildew was observed on five varieties but was not a significant factor this year due to dry weather. In all cases, the percentage of leaf coverage was less than 3%. Microdochium (white speck) was observed at low levels in August but gone in September because of dry weather conditions. All plots had symptoms of virus infection, mostly on the leaves and in several cases on the fruit

Individual pictures of each variety, plus comparison views among varieties are available on the VegNet Web site: http://vegnet.osu.edu.

Table 1. 2008 pumpkin cultivar evaluation, South Charleston, OH.

ID #	Variety	Marketable Orange Fruit/A	Marketable Orange Tons/A	Average Fruit Size (lbs)	Fruit Diameter (in)	Powdery Mildew Severity (bottom % leaf coverage)[1]	Microdo-chium[2]	Source
7	SSX 5120	968	15	31.5	13	10.6	0	SK
14	RPX 1626	1,815	17	18.6	10.7	9.9	0.08	RU
4	Camaro	1,573	15	19	12.4	2.9	0.08	HL
13	RPX 1621	1,307	13	20	12.5	40	0.16	RU
16	Gold Medal	920	10	20.2	12	25.4	0	RU
11	HSC166 014	1,283	12	19	11.8	12.2	0.16	NZ
12	Solid Gold	1,234	12	19	11.3	32.1	0.16	RU
23	Gladiator	1,428	11	16	11.6	6	0.15	HM
8	Hannibal	1,210	10	17	11	47.6	0.08	NZ
17	Gold Challenger	1,041	9	17.2	10.4	28.3	0.24	RU
2	ACX 6501	1,549	11	14	10	24.5	0.07	AC
3	ACX 7301	1,428	10	14	10.3	57.2	0.07	AC
20	Magic Wand (HMX6686)	1,718	11	13	10.7	5.6	0.5	HM
15	RPX 1629	1,452	9	12	9.8	12.5	0	RU
5	Earlipac	944	8	16.2	12	20	0.16	SK
21	Warlock	992	7	14	11.4	3.2	0.16	HM
1	ACX 7302	1,137	7	12.3	10.6	41.3	0.08	AC
24	Magic Lantern	1,016	6	12	9.7	20.1	0.25	HM
10	Moonshine (White)	2,275	6.3	6	7.7	23	0.08	NZ
18	Field Trip (HMX6687)	3,751	8	4	7.84	9.5	0.33	HM
22	Canon Ball	2,928	6	4	6.8	7.7	0.3	HM
19	Gargoyle	2,927	6	3.4	6.6	7.2	0.24	HM

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Table 1 (*continued*)

ID #	Variety	Marketable Orange Fruit/A	Marketable Orange Tons/A	Average Fruit Size (lbs)	Fruit Diameter (in)	Powdery Mildew Severity (bottom % leaf coverage)[1]	Microdo-chium[2]	Source
6	Fall Splendor	2,372	5	4.3	7.5	10.1	0.16	SK
9	Chucky	3,993	4	2.2	6	10.4	0	NZ
	LSD 0.05%	646	6.1	4.0	1.2	15.5	0.32	

Key To Disease Ratings

1. Powdery mildew: only second rating (September 16) shown. Percentage of leaf area infected on bottom of the leaf. Average of three evaluators, each using three leaves per plot.
2. Microdochium (Plectosporium or white speck): rating score based on foliage, petioles, vines, and fruit. 0=none, 1=low, 2=medium, 5=moderate, 7=high, 10=death.