

Pumpkin Cultivar Evaluation in Ohio

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Introduction

Pumpkins are now 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

Thirteen 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 direct seeded on May 27, 2005 and some reseeded and transplanting in certain plots about 7-14 days later due to mice damage on seeds. Admire, for cucumber beetle and bacterial wilt control, was applied in the furrow at seeding. Plots were 40 feet long with 10 feet between rows and 3 feet between plants in the row. Strategy was applied for weed control post planting but before crop emergence. The experiment was conducted as a randomized complete block design with 4 replications. Trickle irrigation was available for all plots and was used twice weekly from late June through August. A standard disease control program included the fungicides: Tanos, Nova and Bravo. Bravo + Nova was applied on: 25 Jul, 8 Aug, 22 Aug, 6 Sep alternating with Tanos applied on: 1 Aug, 16 Aug. and 6 Sep. A standard insect control program included Sevin XLR. Fruit were harvested 12 and 13 September, 2005.

Results

Cultivars are listed in Table 1 according to tons per acre. Two small varieties (@ 4lbs) are at the bottom of the table. The highest yielding varieties (>20 lbs per fruit) in terms of tons per acre were: RPX768, RPX771 and Gold Medal. RPX768 and, RPX771 had the largest average fruit size at 24 pounds producing 31 and 23 tons per acre respectively. The highest yielding varieties in the 16 to 20 lb fruit size category were Gold Gem, Super Herc and Pro Gold 510. A new and appealing small variety was Iron Man with an average fruit size of 3.4 pounds. Iron Man produced over 6000 fruit per acre. Features included dark green handles, good orange color and a hard fruit rind. RPX089 was similar in size and shape but slightly less productive.

Powdery mildew tolerance was evaluated on 8-10 September, 2005. The only varieties with 20% or less of the bottom of the leaves infected by powdery mildew were: RPX764, RPX763, Super Herc, Gold Medal, Aladdin, Iron Man and RPX089. Gold Medal is not known to be PMT.

A variety reaction was observed to the fungicide spray program with some plots showing considerable yellowing of the foliage. Chemical reaction by variety is listed in Table 1. An industry representative thought this might be due to the carriers in the formulation which may change but not the active ingredient. Individual pictures of each variety plus comparison views among varieties are available at the VegNet website: <http://vegnet.osu.edu>

Table 1, 2005 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	Powdery Mildew on Handle ²	Downy Mildew Rating ²	Chemical Reaction ³	Source
11	RPX768	2577	30.9	24	12.5	0	23.1	0.5	1	1	RU
7	RPX764	3121	27.2	14	14.3	0.01	10.7	1.2	1.5	1.5	RU
5	Gold Gem	3339	26.7	16	11.4	0.12	26	0.5	1	1	RU
6	RPX763	3521	24.7	14	11.1	0	0.9	0	1.75	1.75	RU
9	RPX760	3666	24.5	13	11.1	0.12	34.2	4.7	1.5	1.5	RU
2	Super Herc	2577	23.8	18	11.4	0.13	2.5	0.5	2	1.75	HM
12	RPX771	1924	22.9	24	13	0.2	37.8	3.2	1.2	1.5	RU
4	Gold Medal	1996	22.5	22	12.4	0.06	19.1	0.5	1.5	1.5	RU
3	Pro Gold 510	2250	19.9	18	11.3	0	23.6	1.8	2	2.0	AC
1	Aladdin	2650	19.4	14	11.0	0.01	3.2	0.5	1.5	1.5	HM
10	RPX761	2323	16.1	14	10.3	0.26	42.2	1.3	1	1	RU
13	Iron Man	6534	11.0	3.4	6.4	0	4.2	0.2	2	2.0	HM
8	RPX089	4719	8.5	3.6	6.9	0.12	7.8	0	1.75	1.75	RU
	LSD 0.05%	883.4	8.58	4.1	1.8	0.27	20.1	3.0	0.8	0.8	

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. Powdery Mildew on handle and Downy mildew: Average number of fruit per plot with presence of powdery mildew on the handle or plants per plot with downy mildew.
3. Chemical Reaction: Foliar reaction by variety to the fungicide spray program, 1 = yellow foliage, 2 = slight or light yellowing, 3 = no foliar reaction.

Source: AC = Abbott & Cobb, HM = Harris Moran, RU = Rupp

Fungicide Spray Program: Bravo + Nova applied on: 25 Jul, 8 Aug, 22 Aug, 6 Sep alternating with Tanos applied on: 1 Aug, 16 Aug. and 6 Sep.