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# Powdery Mildew Resistant Pumpkin Cultivar Evaluation

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# Powdery Mildew Resistant Pumpkin Cultivar Evaluation

## **Abstract**

Pumpkin cultivars with powdery mildew resistance help growers produce a high quality crop while reducing pesticide inputs and cost. This trial was set up to provide an unbiased evaluation of selected cultivars with reported resistance/tolerance to powdery mildew and generate information helpful to growers for selecting cultivars best suited to their market.

## **Disciplines**

Agricultural Science | Agriculture

# Powdery Mildew Resistant Pumpkin Cultivar Evaluation

Vince Lawson, farm superintendent

## Introduction

Pumpkin cultivars with powdery mildew resistance help growers produce a high quality crop while reducing pesticide inputs and cost. This trial was set up to provide an unbiased evaluation of selected cultivars with reported resistance/tolerance to powdery mildew and generate information helpful to growers for selecting cultivars best suited to their market.

## Materials and Methods

*Planting.* Cultivars were planted in 72 cell trays in a greenhouse on May 31, 2007 and transplanted to the field on June 15.

*Plot Design.* A randomized complete block with two replications was used. A plot consisted of a single row of eight plants spaced 32 in. apart with rows spaced 10 ft apart.

*Fertility and Irrigation.* Fertilizer (75 lb nitrogen and 120 lb K<sub>2</sub>O) was applied preplant incorporated on June 3. Additional nitrogen (40 lb) was sidedressed on August 4. Plot area was irrigated with a center pivot as needed.

*Pesticides.* Strategy, Sandea, and Poast herbicides; Fanfair insecticide; and Bravo, Quadris, and Kocide fungicide.

## Results and Discussion

The growing season was favorable for pumpkin growth and the trial produced good yields and quality. To prevent fruit rots and disease problems, plots were sprayed with fungicides. Even so, powdery mildew developed in the planting by mid August. It was mainly seen on foliage and caused some defoliation but not vine death. Notes were taken on disease severity but only minor differences between cultivars were observed (data not presented). Generally, resistant cultivars had less powdery mildew, but because of fungicide spraying and the low level of infection these observations did not correlate with yield.

Cultivars are ranked by yield (high to low) and by fruit size (large, medium, and small) in Tables 1 and 2. Magic Lantern, ACX 6201, Dependable, Charisma PMR, and Aladdin were the highest yielding. Dependable also had the highest average fruit weight (26.0 lb) in the trial. Super Herc had low marketable yield due to a skin cracking problem and fruit rot. This objectionable trait has also been observed with Super Herc in prior seasons.

**Table 1. Pumpkin cultivar marketable yield, average fruit weight and size.**

Cultivar	No. of fruit/acre	Market yield lb/acre	Avg. fruit wt (lb)	Height × width (in.)	Ht/width ratio
ACX 6201	5,443	90,719	16.7	11.4 × 11.3	1.01
Dependable	3,421	89,024	26.0	15.5 × 12.0	1.29
Aladdin	4,510	84,654	18.6	11.8 × 11.0	1.07
Spartan	4,510	79,010	17.6	11.4 × 11.6	0.98
Gold Medal	3,888	75,822	19.9	10.0 × 11.4	0.88
ACX 6501	4,821	74,158	15.4	11.8 × 10.2	1.16
Gold Bullion	3,577	57,737	16.5	11.3 × 11.6	0.97
Howden	2,955	53,508	18.1	11.9 × 10.8	1.10
Warlock	3,266	51,424	15.8	13.2 × 11.6	1.14
Super Herc	1,400	29,918	21.4	12.7 × 11.8	1.08
Magic Lantern	7,775	97,483	12.5	9.9 × 10.6	0.93
Chrisma PMR	6,687	84,732	12.6	9.8 × 11.0	0.89
Magician	5,909	73,909	12.5	10.3 × 10.3	1.00
HMX 6686	4,821	69,462	14.4	9.9 × 10.4	0.95
20 Karat Gold	4,665	67,969	14.6	9.3 × 10.4	0.89
ACX 6302	5,909	67,534	11.3	10.0 × 9.0	1.10
Gladiator	4,665	64,781	13.8	11.6 × 11.0	1.05
Neon	4,821	49,060	10.4	8.2 × 9.5	0.86
Iron Man	16,949	64,408	3.8	5.8 × 6.4	0.91
Prankster	11,507	41,565	3.6	4.8 × 6.1	0.78
Cannon Ball	8,864	40,337	4.5	6.1 × 6.6	0.92
Rockafellow	15,239	34,148	2.2	5.3 × 5.1	1.10

**Table 2. Pumpkin cultivar, seed source, and fruit descriptions.**

ACX 6201	AC	Long handles, full round shape with medium sutures.
Dependable	AC	Extra tall fruit, slight ribbing, bright orange color, large thick handles, long vines.
Aladdin	HM	Tall round shape, medium sutures, dark orange fruit with dark handles.
Spartan	SW	Round dark orange fruit, strong ribbing, nice dark handles.
Gold Medal	RU	Mix of round and tall shapes, smooth and ribbed fruit, long handles.
ACX 6501	AC	Round to tall round shape, bright orange, shallow sutures, thick dark handles.
Gold Bullion	RU	Round orange fruit with strong ribbing and thick handles.
Howden	HM	Long vines, round to tall fruit shape (variable), dark orange and deep sutures.
Warlock	HM	Tall, dark orange, strong handles, shallow sutures but rough, semi-hard shell.
Super Herc	HM	Tall upright fruit, deep sutures, dark orange color, large dark green handles, developed rough blemished surface due to skin cracking.
Magic Lantern	HM	Round to tall round shape, ribbed, deep orange color with dark handles.
Charisma PMR	JS	Fat round (oblate) shape, strong ribbing, light orange and long dark handles.
Magician	HM	Tall round shape, strong ribbing, dark orange color and nice dark handles.
HMX 6686	HM	Round dark orange fruit, dark handles, deep sutures (ribbing).
20 Karat Gold	RU	Uniform appearance, round, deep orange, shallow sutures, thick dark handles.
ACX 6302	AC	Bright orange, tall oblong shape, dark handles, shallow sutures.
Gladiator	HM	Tall round shape, dark orange, long dark handles, deep ribbing.
Neon	SW	Uniform, early color–vivid bright orange, shallow sutures, dark handles.
Iron Man	HM	Smooth round hard shell fruit, dark orange, strong thick handles.
Prankster	RU	Flattened round fruit had deep ribbing and extra thick handles.
Cannon Ball	HM	Smooth round fruit were very firm, burnt orange color, large strong handles.
Rockafellow	SW	Tall “egg” shape, very smooth and dark orange, long dark handles.