

## **2007 Pumpkin Variety Evaluations**

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### **INTRODUCTION**

Pumpkins continue to be an important crop to Pennsylvania growers. Nationally, Pennsylvania consistently ranks at or near the top of states in acreage for production of fresh market pumpkins. Variety trials continue to be regularly conducted in the state to evaluate new varieties, especially those tolerant or resistant to powdery mildew (PM). This is a report on trials conducted in PA in 2007.

### **MATERIALS AND METHODS**

Sixteen varieties of small pumpkins (<9 lbs), 14 varieties of medium pumpkins (9-24 lbs.) and 22 varieties of large pumpkins (25+ lbs) were grown in Lancaster, Centre and Montgomery Counties, PA in 2007. The pumpkins were grown using the no-till system and trickle irrigation in Lancaster and on bare soil without irrigation in Centre and Montgomery. Spacing of the plants was as follows: small - 2 ft in row X 8 ft between rows, medium - 4 ft in row X 8 ft between rows and large - 8 ft X 8 ft. Plants were direct seeded on June 8 in Lancaster and June 14 in Montgomery and transplants were set June 6 in Centre. Admire was applied through the drip system post-planting in Lancaster at the labeled rate. Recommended fertility, weed control and disease and insect control practices were used. There were three 6 plant replicates per variety at Lancaster and Centre and two 20 ft. replicates per variety at Montgomery (plant number per replicate varied with fruit size). Pumpkins were harvested and weighed on September 25 and 28 in Lancaster, September 21 in Centre and September 24 in Montgomery.

### **RESULTS AND DISCUSSION**

The 2007 growing season was hot and dry and except for powdery mildew, disease pressure was low. Overall yields and fruit quality were the best in many years of trialing at Lancaster. Pumpkin fruit losses to rot were very low. Yields are only reported from Lancaster as the other locations suffered from drought stress since they were not irrigated.

Packer had the highest estimated yields in the small group (Table 1) but fruit size was actually medium and the handles and color were poor (Table 3). 6866 had the next highest estimated yield in the small varieties but the handles tended to be a little soft. Pure Gold was third highest in yield with good fruit appearance but this variety has performed poorly in cool, wet seasons. Hybrid Pam is another variety that performed well this year but has done poorly in cool, wet seasons. 8404 and 8412 yielded well but this was the first season varieties from Outstanding Seed were trialed and additional trials are necessary to determine the consistency of yield on these selections. Ironman and Cannonball, both hard shell types, yielded well and have been consistent over multiple trials.

Tom Fox had the highest yields in the medium group but there was only one replication. This variety had variable fruit shape and would not be good for wholesale growers looking for uniform fruit. Harvest Ace was the next highest in yields but fruit size was large for this group (perhaps Harvest Gold planted in this plot by accident). Magic Lantern and Magician both had good yields but fruit size was small for this grouping in terms of market needs. Progress looked promising but fruit size was too small for this size group. RPX 1626 and 6877 had good estimated yields but poor color. Charisma and Scarecrow both did well but in past cool and wet seasons had lower yields.

Aladdin had the highest estimated yields among the large varieties (Table 2). Mr. Wrinkles was second highest but the handles were a little small for the fruit size and fruit qualities were somewhat variable (Table 4). Magic Wand had good a good yield and appearance but this was the first season in trial. Gold Medal has been a consistent performer in Lancaster trials. Summit had soft handles while Spartan had good yields in this first year in trial. Superior was a very attractive pumpkin but yields were on the lower side for this group. Conestoga Special had the largest average fruit size but the handles were small in proportion to fruit size. Phatso had the second largest average fruit size and good handles. Fat Albert was third in average fruit size but was variable in fruit weight, appearance and handle quality.

Several small and medium varieties from Outstanding Seeds had the lowest mildew infection ratings at both Lancaster and Centre Counties (Table 5). The mini-pumpkins also had low ratings as in previous seasons. Mystic Plus, one of the first varieties with mildew tolerance, had intermediate mildew infection ratings. Hybrid Pam and Snackjack had the highest mildew ratings. Even varieties with high mildew ratings on the lower leaf surface at Lancaster had low upper leaf surface infection ratings. This indicates both good coverage of the upper leaf surface by fungicides as well as the importance of scouting the undersides of leaves for the first signs of powdery mildew in a pumpkin planting.

Magic Lantern, another early variety with mildew tolerance, had intermediate mildew infection ratings at Lancaster and Montgomery among the medium varieties. 6899, Progress and Magician had the lowest mildew ratings on the undersides of the leaves. Yields of Magic Lantern and Magician were similar indicating that mildew resistance does not necessarily mean higher yields. However, mildew resistant varieties tend to have higher fruit quality at harvest because of a lower incidence of poor stem quality from mildew infections.

Gladiator had the lowest mildew infection ratings on the lower leaf in the large varieties followed by Superior and Warlock (Table 6). Warlock is a hard shell type and the handles tended to be a little small. Magic Wand, Spartan and Summit were the next lowest in terms of lower leaf mildew infection ratings. Aladdin and Solid Gold had lower infection ratings at Centre and Montgomery than Lancaster.

Photographs from all varieties grown at Lancaster in 2007 as well as additional information on earlier pumpkin variety trials can be viewed at: <http://capitalhort.cas.psu.edu/Default.html>. Select “Research/Variety Trails”.

**Table 1:** Yield and seed source for 34 varieties of small and medium pumpkins grown in Lancaster County, PA in 2007.

Variety	Number of fruit per plant	Average fruit weight	Estimated yield (tons/A)	Source
<b>Small</b>				
6866	2.1	7.6	21.0	Outstanding Seed
6933	1.6	6.1	13.2	Outstanding Seed
8404	3.2	6.6	16.0	Outstanding Seed
8411	2.3	4.1	10.0	Outstanding Seed
8412	2.7	4.6	15.8	Outstanding Seed
Cannonball	2.6	4.3	14.8	SeedWay
Field Trip	2.3	4.2	12.8	Harris Moran
Gold Dust	7.4	0.5	5.2	Rupp Seeds
Gold Speck	8.1	0.4	3.9	Rupp Seeds
Gargoyle	2.6	3.5	12.3	Harris Moran
Hybrid Pam	2.3	4.5	14.0	SeedWay
Ironman	3.2	3.5	14.9	SeedWay
Mystic Plus	2.2	4.6	13.5	Harris Moran
Packer	1.7	9.3	22.0	Outstanding Seed
Prankster	2.9	3.5	13.9	Rupp Seeds
Snackjack	2.2	2.6	7.7	Seminis
Treasure*	12.9	1.5	13.6	Outstanding Seed
Golden Hawk*	1.4	6.8	15.3	Meyer Seed
Pure Gold*	3.0	4.1	16.9	Meyer Seed
<b>Medium</b>				
20 Karat Gold	1.7	14.5	17.0	Rupp Seeds
6877	2.2	13.3	20.0	Outstanding Seed
6899	2.2	11.6	15.6	Outstanding Seed
8407	3.7	6.4	12.8	Outstanding Seed
8518	4.9	5.7	18.9	Outstanding Seed
8520	6.2	4.2	12.8	Outstanding Seed
Charisma	2.0	13.2	18.1	Johnny's Selected Seeds
Gold Challenger	1.5	15.4	15.7	Rupp Seeds
Magic Lantern	3.3	11.7	26.3	Harris Moran
Magician	3.6	11.2	25.3	SeedWay
Progress	3.2	7.7	16.9	Outstanding Seed
RPX 1626	2.2	15.1	22.6	Rupp Seeds
Scarecrow	3.0	11.1	21.4	Meyer Seed
Harvest Ace*	2.0	21.2	28.2	Meyer Seed
Tom Fox*	3.3	12.5	28.8	Johnny's Selected Seeds

\*One replicate

**Table 2:** Yield and seed source for 25 varieties of large pumpkins grown in Lancaster County, PA in 2007.

Variety	Number of fruit per plant	Average fruit weight	Estimated yield (tons/A)	Source
8401	3.3	20.1	17.7	Outstanding Seed
Aladdin	3.1	22.8	25.2	SeedWay
Big Rock	3.1	19.8	19.3	Johnny's Selected Seeds
Conestoga Special	1.6	31.8	18.5	Seigers Seed
Expert	2.1	18.7	11.4	Johnny's Selected Seeds
Fat Albert	1.8	29.4	17.9	Meyer Seed
Gladiator	3.1	15.4	16.4	Harris Moran
Gold Medal	2.8	22.7	21.4	Rupp Seeds
Golden Osprey	2.5	20.3	17.0	Meyer Seed
Magic Wand	3.9	16.7	21.9	Harris Moran
Mr. Wrinkles	3.1	21.3	22.3	Stokes Seeds
Rock Star	2.8	19.9	16.2	Johnny's Selected Seeds
Solid Gold	2.0	19.5	13.3	Rupp Seeds
Spartan	3.3	17.7	20.3	Seedway
Summit	2.7	21.6	20.2	Outstanding Seed
Superior	4.9	14.6	16.2	Outstanding Seed
Warlock	3.1	18.0	19.1	Harris Moran
Widow Maker	2.2	24.9	19.6	Meyer Seed
Wolf	1.2	21.8	8.9	Johnny's Selected Seeds
V76^	2.0	22.7	20.6	Meyer Seed
Harvest Gold*	3.8	14.3	18.5	Meyer Seed
King Midas*	2.7	24.6		Siegers Seed
Midas Touch*	2.3	20.5		Siegers Seed
Phat Jack*	0.7	23.9		Siegers Seed
Phatso*	1.0	30.6		Siegers Seed

\*One replicate

^Two replicates

**Table 3:** Fruit quality ratings for 34 varieties of small and medium pumpkins grown in Lancaster County, PA in 2007. Texture is rated on a scale of 1-5 with 1 being very smooth and 5 being heavily ribbed. Handles are rated 1-5 with 1 being poor and 5 being excellent.

Variety	Color	Shape	Texture	Handle
<b>Small</b>				
6866	Orange	Round	3.0	3.0
6933	Orange	Round	2.3	2.0
8404	Orange	Round	2.2	3.3
8411	Dark Orange	Upright Round	2.7	3.5
8412	Dark Orange	Round to Upright Round	2.8	3.3
Cannonball	Dark Orange	Upright Round	2.0	4.3
Field Trip	Dark Orange	Flattened Round	2.8	4.2
Gold Dust	Yellow Orange to Orange	Flattened Round	3.0	4.0
Gold Speck	Yellow Orange	Flattened Round	2.2	4.0
Gargoyle	Orange	Round	2.0	4.2
Hybrid Pam	Dark Orange	Round	3.8	3.7
Ironman	Dark Orange	Round	1.5	4.0
Mystic Plus	Dark Orange	Round	2.5	4.0
Packer	Yellow Orange	Round	2.3	2.8
Prankster	Dark Orange	Round	2.8	3.7
Snackjack	Yellow Orange	Round to Upright Round	2.3	3.0
Treasure*	Yellow Orange	Flattened Round	2.0	4.0
Golden Hawk*	Orange	Round	2.0	3.0
Pure Gold*	Dark Orange	Round	3.5	3.5
<b>Medium</b>				
20 Karat Gold	Dark Orange	Upright Round	2.8	3.7
6877	Yellow Orange	Round to Upright Round	2.5	2.8
6899	Yellow Orange	Round to Upright Round	2.5	3.5
8407	Orange to Dark Orange	Round	3.0	3.3
8518	Buff with Green or Yellow Stripes	Round	1.7	3.3
8520	Orange Yellow with Green Stripes	Oblong	1.3	3.2
Charisma	Orange to Dark Orange	Round to Upright Round	4.2	3.2
Gold Challenger	Dark Orange	Upright Round	3.2	3.7
Magic Lantern	Dark Orange	Round to Upright Round	3.2	3.3
Magician	Orange to Dark Orange	Round to Upright Round	3.7	3.8
Progress	Orange to Dark Orange	Round	2.8	3.7
RPX 1626	Variable	Upright	3.2	3.2
Scarecrow	Dark Orange	Round to Upright Round	3.3	3.7
Harvest Ace*	Dark Orange	Upright	5.0	4.0
Tom Fox*	Orange	Variable	3.0	3.5

\*One replicate

**Table 4:** Fruit quality ratings for 25 varieties of large pumpkins grown in Lancaster County, PA in 2007. Texture is rated on a scale of 1-5 with 1 being very smooth and 5 being heavily ribbed. Handles are rated 1-5 with 1 being poor and 5 being excellent.

Variety	Color	Shape	Texture	Handle
8401	Yellow Orange to Orange	Upright Round	3.7	3.8
Aladdin	Dark Orange	Upright Round	2.7	3.0
Big Rock	Orange to Dark Orange	Upright Round	3.2	3.5
Conestoga Special	Orange	Upright Round to Upright	Variable	2.8
Expert	Dark Orange	Upright Round	4.3	3.2
Fat Albert	Orange	Variable	Variable	4.3
Gladiator	Dark Orange	Upright Round	3.2	3.5
Gold Medal	Dark Orange	Upright Round	3.3	3.6
Golden Osprey	Orange to Dark Orange	Upright Round to Upright	2.7	3.0
Magic Wand	Dark Orange	Round	3.7	3.2
Mr. Wrinkles	Orange to Dark Orange	Upright Round to Upright	Variable	2.7
Rock Star	Dark Orange	Upright Round	3.7	3.5
Solid Gold	Orange	Round	2.8	3.2
Spartan	Dark Orange	Round to Upright Round	3.8	3.2
Summit	Orange	Round to Upright Round	2.5	3.8
Superior	Dark Orange	Round	3.0	4.2
Warlock	Dark Orange	Upright Round	2.7	2.5
Widow Maker	Orange to Dark Orange	Upright Round	3.2	3.2
Wolf	Dark Orange	Round to Upright Round	3.3	4.0
V76^	Variable	Variable	2.5	2.5
Harvest Gold*	Dark Orange	Variable	Variable	2.5
King Midas*	Dark Orange	Upright	Variable	3.0
Midas Touch*	Orange	Round to Upright Round	2.5	2.0
Phat Jack*	Yellow Orange	Round to Upright Round	3.5	4.0
Phatso*	Yellow Orange to Orange	Variable	4.0	4.5

\*One replicate

^Two replicates

**Table 5:** Powdery mildew infection ratings for 34 varieties of small and medium pumpkins grown in Lancaster, Centre and Montgomery Counties, PA in 2007.

Variety	PM Resistance#	Lancaster 8/30		Centre 09/03		Montgomery 08/31	
		% PM Upper	% PM Lower	% PM Upper	% PM Lower	% PM Upper	% PM Lower
<b>Small</b>							
6866	HR	0.3	15.0	0.3	4.3		
6933	HR	0	11.2	0	5.7		
8404	HR	0	24.0	0	3.7		
8411	HR	0	13.2	1.7	10.0	0	0.7
8412	HR	0.2	12.5	4.7	9.7		
Cannonball	IR	0.3	28.7	2.7	22.0	0	1.8
Field Trip	IR	0	15.8	4.7	25.7	0	1.4
Gold Dust	IR	0	10.0	5.0	20.7	0	2.3
Gold Speck		0	5.7	4.0	14.3	0	2.0
Gargoyle	IR	0.3	29.7	1.7	21.3	0	7.4
Hybrid Pam		0.3	73.3	21.0	44.7	0	7.4
Ironman	IR	0.5	19.2	1.3	30.3	0	5.8
Mystic Plus	IR	0	44.8	9.0	33.3	0	17.5
Packer	HR	0	7.0	0	8.3	0	1.4
Prankster	IR	0	26.2	2.3	19.7		
Snackjack		0	66.7	11.3	35.7	0	17.4
Treasure*	IR	0	5.8				
Golden Hawk*	IR	0	59.5				
Pure Gold*		0	49.0				
<b>Medium</b>							
20 Karat Gold	IR	0.3	85.0	4.0	23.3	0	8.7
6877	HR	0.3	28.3	0	3.0		
6899	HR	0.3	12.7	0	1.0		
8407	HR	0.2	8.5	0	0.7		
8518	HR	0.7	29.7	0.3	7.0		
8520	HR	0	7.0	0	0.3		
Charisma	IR	0	57.8	0.3	13.3	0	9.1
Gold Challenger		0	80.7	1.0	29.7	0	16.6
Magic Lantern	IR	0.3	52.5	0	4.0	0	9.8
Magician	IR	0	15.5	0	2.7	0	1.8
Progress	HR	0	6.2	0	0		
RPX 1626		0	30.3	1.3	14.0	0	1.4
Scarecrow	HR	0	59.8	0	12.3		
Harvest Ace*		0	76.5	1.7	25.3	0	16.6
Tom Fox*		0	67.0				

\*One replicate at Lancaster

#HR = homozygous resistance, IR = intermediate or heterozygous resistance

**Table 6:** Powdery mildew infection ratings for 25 varieties of large pumpkins grown in Lancaster, Centre and Montgomery Counties, PA in 2007.

Variety	PM Resistance#	Lancaster 8/30		Centre 09/03		Montgomery 08/31	
		% PM Upper	% PM Lower	% PM Upper	% PM Lower	% PM Upper	% PM Lower
8401	HR	0.7	26.8	0	0.3		
Aladdin	IR	0	45.2	0	14.7	0	5.0
Big Rock		2.5	71.0	8.0	24.0	0	21.3
Conestoga Special		1.8	46.7	11.3	27.7	0	11.2
Expert		3.5	59.2	3.7	24.0	0	41.7
Fat Albert		1.2	44.3	6.0	16.0		
Gladiator	HR	0.2	6.0	3.3	9.7	0	1.9
Gold Medal		0.5	68.5	1.7	15.0	0	20.0
Golden Osprey	IR	2.5	55.5	7.5	25.0		
Magic Wand	IR	0	16.2	2.7	3.3	0	1.7
Mr. Wrinkles		0	36.8	16.7	34.0	0	16.8
Rock Star		2.0	71.5	6.0	29.3	0	23.5
Solid Gold		0.3	31.5	7.3	9.7	0	2.7
Spartan	IR	0.5	19.8	2.7	9.3	0	13.8
Summit	IR	0.2	20.5	5.7	11.7	0	10.2
Superior	HR	0.2	9.0	0.3	1.0		
Warlock	IR	0	9.5	0	0.7	0	1.1
Widow Maker		1.0	26.5	9.3	15.7		
Wolf		0.3	39.0	3.0	24.5	0	26.8
V76^		0	29.5				
Harvest Gold*		0	12.0				
King Midas*		0	77.5	8.0	18.3	0	12.3
Midas Touch*		0	74.0	0	6.7	0	9.0
Phat Jack*		1.0	55.5	6.3	27.7	0	5.3
Phatso*		0	68.5	5.5	18.5	0	7.6

\*One replicate

^Two replicates

#HR = homozygous resistance, IR = intermediate or heterozygous resistance