



Variety Selection

- Wholesale Marketing
 - High percentage of 15 lb pumpkins [9 – 13" inches in diameter]
 - Deep orange color
 - Strong, healthy stems
 - Uniformity
 - Size
 - Shape
 - Color

Variety Selection


- Retail Marketing
 - Broader size range
 - Dark orange color may not be as important
 - Strong, healthy stems
 - Uniformity may not be as critical
 - Demand for unique or specialty varieties

Soil Testing

- A soil test is the only accurate method of determining the amount of:
 - Lime to apply
 - Fertilizer to apply
- Too much fertilizer:
 - Wastes money and fertilizer
 - Can injure, even kill plants
 - Can pollute ground water
- Low pH and poor fertility:
 - Reduce yield and quality

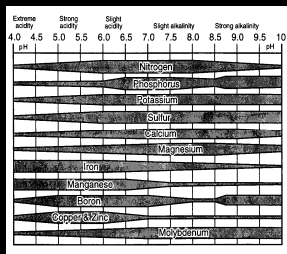


Soil Sampling



- Use a sample tube or spade to collect samples that are at least 4 inches and no more than 6 inches deep
- Collect samples from 8 to 10 locations around the field
- Avoid sampling irregular or extremely wet areas
- Combine samples in a clean plastic container

pH and Nutrient Availability



- Proper pH range
 - 6.0 – 6.5
 - Optimum nutrient availability
- Soil sample in the Fall
- Lime in the Fall
 - Agricultural lime is variable in size and reacts over time
 - 6 months is generally required to see much activity

Fertility – Bare Soil

- Nitrogen (N)
 - 80 – 90 lb/A total
 - 40 – 50 lb/A at planting
 - 30 – 40 lb/A at 12" runner development
- Phosphate (P_2O_5)
 - Low 150 lb/A Medium 100 lb/A
- Potash (K_2O)
 - Low 200 lb/A Medium 150 lb/A

Fertility – Plastic Mulch

Nitrogen (N)

- 80 – 150 lb/A total
 - 25 – 50 lb/A at planting
 - Remainder throughout the growing season through fertigation
 - 8 to 10 weekly applications (beginning 3 to 4 weeks after planting)

Alternate

- 50 lb/A/week of calcium nitrate
- 50 lb/A/week of potassium nitrate
- 50 lb/A/week of water soluble 20 – 20 – 20

Planting Dates

- Factors affecting planting date:
 - Relative Maturity
 - Market
 - Harvest Date
 - Microclimate
 - Production Practices
 - Frost Dates (?)
 - Soil Moisture
- Most varieties have relative maturities of 90 to 115 days
 - Those may not be exact days for you!
 - They are relative and often taken at the seed companies trial location (often in the Northeast)

Pumpkin Spacing

- Factors affecting spacing:
 - Plant vigor
 - Fruit size desired
 - Moisture
 - Equipment
 - Weed control strategy

Pumpkin Spacing

- Bush
 - 5-6' between rows; 2-3' in-row
 - 4-6 lbs seed/acre
- Semi-vine
 - 6-8' between rows; 2-4' in-row
 - 2-4 lbs seed/acre
- Vine
 - 8-10' between rows; 4-5' in-row
 - 2-4 lbs seed/acre

Pollination

- Rule of thumb:
 - 1 hive/A
- Native bees can be important source of pollination



Irrigation

- Dry land production
- Overhead irrigation
- No-till production
- Following plasticulture strawberries, re-use plastic mulch and drip tape
- Needs:
 - 1 to 2 1/2 inches of water/A/week

Harvest Considerations

- Avoid harvesting when foliage is wet
- Cut stems as close to vine as possible
- Careful handling can prevent wounding and help maintain quality

Postharvest Handling

- Wash?
- Store in a cool, dry, dark place
 - Cool: 45 – 55 degrees F
 - Relative humidity: 70 – 75%
 - Single layer
 - Barrier between pumpkins and soil, if possible



2009 Powdery Mildew Resistance Variety Trial

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Objective:

To evaluate powdery mildew resistance, yield, fruit quality, and postharvest storability of experimental and commercially available jack-o'-lantern varieties in Tennessee







Methods

- Two locations: Jackson, TN
Lexington, KY
- 22 varieties
- 4 replicated plots/cultivar
- Plots: 20' long
- Plant spacing: 4 hills/plot
 - 5' between hills
 - 9' between rows
- Planted: June 3, 2008
June 12, 2009
- Harvested: September 10-11, 2008
September 23, 2009

Characteristics Measured

- Yield
- Number of Fruit
- Fruit Weight
- Fruit Length and Width

Subjective Evaluation Scales:

- Color:
1 = , 5 = , 9 = 
- Shape:
1 = , 5 = , 9 = 
- Suturing:
1 = None, 5 = Medium, 9 = Deep

Subjective Scales:

- Stem Length:
1 = Short, 5 = Medium, 9 = Long
- Stem Thickness:
1 = Thin, 5 = Medium, 9 = Thick
- Stem Attachment:
1 = Poor, 5 = Average, 9 = Excellent

Storage

- At harvest, sub-sample of 8 pumpkins/plot for storage
- Half (4) washed with 100 ppm bleach solution; half (4) not washed
- Pumpkins were weighed and evaluated for decay every 3 weeks for 45 days in 2008; after 2 weeks in 2009
- Rotten pumpkins were discarded



Top 5 Marketable Yield

Variety	2009 Marketable Yield (cwt/A)		2008 Marketable Yield (cwt/A)	
Camaro	362	(1)	604	(3)
HSR4721	344	(2)	625	(2)
Merlin	328	(3)	425	(12)
Spartan	296	(4)	525	(5)
ACX 7301	282	(5)	322	(19)
Magic Wand	204	(13)	584	(4)
Gladiator	194	(12)	525	(5)
ACX7302	168	(16)	525	(5)
HSR4710	266	(7)	778	(1)

Camaro

	2009	2008
Yield (cwt/A)	362	604
Total Fruit/A	2,964	5,808
Avg. Weight (lbs)	16.7	12.1
% Unmarketable	25	3
Dimensions	11" x 11"	10" x 9"
Color	Yellow orange	

HSR4721		
	2009	2008
Yield (cwt/A)	344	625
Total Fruit/A	4,417	8,289
Avg. Weight (lbs)	10.2	8.3
% Unmarketable	24%	0.5%
Dimensions	9" x 9"	8.5" x 9"
Color	Yellow orange	

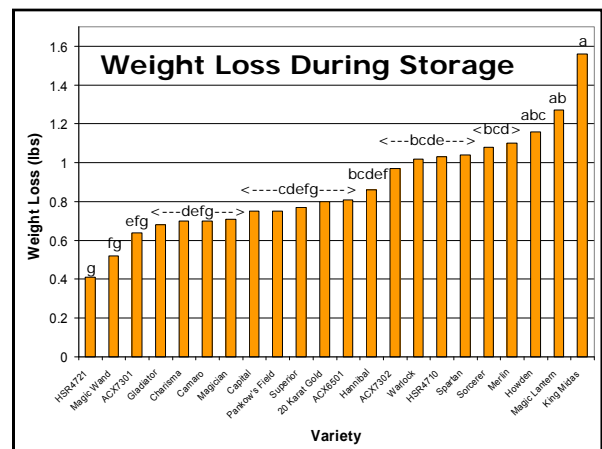
Merlin		
	2009	2008
Yield (cwt/A)	328	425
Total Fruit/A	3,085	5,324
Avg. Weight (lbs)	12.7	13.7
% Unmarketable	15	10
Dimensions	10" x 11"	9" x 9"
Color	Medium orange	

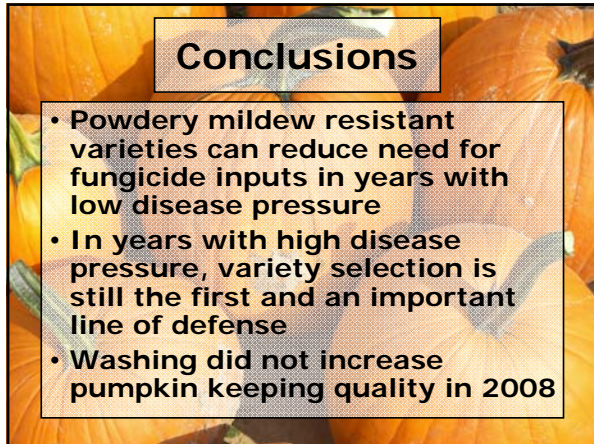
Spartan		
	2009	2008
Yield (cwt/A)	296	525
Total Fruit/A	2,178	5,566
Avg. Weight (lbs)	14	12.1
% Unmarketable	2	14
Dimensions	11" x 10"	11" x 10"
Color	Medium-dark orange	

ACX 7301		
	2009	2008
Yield (cwt/A)	282	322
Total Fruit/A	3,449	3,872
Avg. Weight (lbs)	9.5	8.7
% Unmarketable	14	13
Dimensions	11" x 10"	9" x 9"
Color	Orange	

Storability

- No difference in decay during storage between washed and unwashed pumpkins in 2008
- Stem health key to marketability
- Weight loss varied among varieties during 45 days of storage from ~0.5-1.5 lbs/pumpkin





Conclusions

- Powdery mildew resistant varieties can reduce need for fungicide inputs in years with low disease pressure
- In years with high disease pressure, variety selection is still the first and an important line of defense
- Washing did not increase pumpkin keeping quality in 2008



Acknowledgements

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Thank you! Questions?

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