

Performance of Pumpkin Cultivars, Middle Tennessee Experiment Station, 2001

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Interpretative Summary

All pumpkin cultivars were highly productive, and fruit size was average for most of the cultivars. 'Pik a Pie' and 'Magic Lantern' were among cultivars that had a larger average weight. 'Howdy Doody' produced a high tonnage of pumpkins that weighed less than 10 lb. None of the cultivars tested produced fruit that weighed more than 20 lbs.

Introduction

Pumpkins for Halloween usage are grown throughout Tennessee. The primary acreage of pumpkins is on the Cumberland Plateau, but pumpkins are grown throughout the state. Cultivars have been found to perform differently at different location. Rainfall and temperature differences affect fruit set and development and disease problems. Pumpkins have been a profitable crop for producers in recent years, and acreage production seems to increase each year. Several tobacco and row crop producers have considered or actually produced pumpkins as an alternative crop. Pumpkin production has many problems that need to be considered by growers. Weed control can be a problem in pumpkins as labeled herbicides fail to control all species of weeds adequately. Insecticides and fungicides need to be applied on a 7 to 10 day frequency. Bees are needed for pollination. Pumpkins require a fairly high degree of management for successful results. An experiment was conducted at the Middle Tennessee Experiment Station at Spring Hill, TN in 2001 to evaluate performance of 10 pumpkin cultivars.

Materials and Methods

The site was prepared for planting by conventional tillage methods. Fertilizer was broadcast at a 750 lb/A of 15-15-15 and incorporated with a disk on May 16. Plots were direct seeded with the selected cultivars on June 5. Plot size was one row, 12 by 20 ft. Each row contained 5 hills with 3 seeds/hill. Plants were later thinned to 2 plants/hill. Experimental plot design was a randomized complete block with four replications. A preemergence application of clomazone (Command) at 0.375 lb ai/A was made on June 12.

Insect control was by esfenvalerate (Asana) at 0.05 lb ai/A on a 7 to 14 day frequency. Fungicides were azoxystrobin (Quadris) at 0.25 lb ai/A or chlorothalonil (Bravo) at 2.0 lb ai/A applied with each insecticide treatment. Pumpkins were harvested on Sept 17. Harvested pumpkins were sorted according to sizes of over 20 lb, 15 to 20 lb, 10 to 15 lb, and less than 10 lb. Number and weight of pumpkins in each weight range were recorded. Quality ratings were made at harvest.

All ratings were on a 1 to 10 scale with 10 the most desirable. All data were analyzed by analysis of variance methods, and means were separated by Duncan's multiple range tests at the 0.05 level of probability.

Results and Discussion

Pumpkin yields in tons and number per acre were relatively high (Tables 1 and 2). 'Howdy Doody' had a higher total tonnage than all cultivars except 'Aspen' and 'Magic Lantern'. 'Howdy Doody' produced a higher tonnage of pumpkins that weighed less than 10 lb per pumpkin than all other cultivars. 'Aspen', 'Howdy Doody', 'Magic Lantern', 'Phantom', and 'Sorcerer' were among cultivars that produced the highest tonnage of pumpkins that weighed 10 to 15 lb per pumpkin. 'Aspen' was the most productive cultivar for tonnage of pumpkins that weighed 15 to 20 lb per pumpkin. No pumpkins more than 20 lbs were produced by any cultivar. Yield in number per acre was very similar to yield in tons/acre for the 10 cultivars.

'Aspen', 'Howdy Doody' and 'Phantom' were among cultivars rated as having the best color (Table 3). No significant differences were found in fruit appearance and stem quality due to cultivar. 'Mother Lode' was the cultivar with the longest fruit, while 'Howdy Doody' had the largest fruit diameter.

Table 1. Yield in tons per acre of different size classes of pumpkin cultivars at The University of Tennessee Middle Tennessee Experiment Station at Spring Hill, 2001

Cultivar	total yield tons/A	Pumpkins < 10 lb tons/A	Pumpkins 10-15 lb tons/A	Pumpkins 15-20 lb tons/A	Pumpkins > 20 lb tons/A	Pumpki average wt-lb
Aspen	22.0 ab ²	3.3 b	10.5 a	8.2 a	0 a	11.5 ab
Autumn King	11.3 b	3.8 b	3.6 cd	4.0 bcd	0 a	11.3 ab
Howdy Doody	37.5 a	24.4 a	8.4 a	4.7 bc	0 a	11.3 ab
Hybrid Pam	13.6 b	9.8 b	1.8 d	2.1 cd	0 a	10.1 c
Magic Lantern	17.7 ab	5.4 b	7.8 ab	5.4 b	0 a	11.6 ab

Mother Lode	14.0 b	4.5 b	5.2 bc	4.3 bc	0 a	10.8 bc
Phantom	12.1 b	2.7 b	8.3 a	1.1 d	0 a	11.1 ab
Pik A Pie	15.4 b	9.6 b	3.9 cd	1.9 cd	0 a	11.7 a
Sorcerer	14.9 b	3.3 b	8.9 a	2.7 bcd	0 a	11.3 ab
Trojan	10.2 b	3.1 b	5.3 bc	1.8 cd	0 a	10.3 d

²Means within a column followed by the same letter are not significantly different at the 0.05 level of probability, Duncan's multiple range tests.

Table 2. Yield in number per acre of different size classes of pumpkin cultivars at The University of Tennessee Middle Tennessee Experiment Station at Spring Hill, 2001.

Cultivar	total yield - tons/A	Pumpkins < 10 lb tons/A	Pumpkins 10-15 lb tons/A	Pumpkins 15-20 lb tons/A	Pumpkins > 20 lb tons/A	Seed Source
Aspen	3812 ab ^z	908 a	1906 a	998 a	0 a	Seedw
Autumn King	2723 b	1679 a	590 de	454 bcde	0 a	Rupp
Howdy Doody	7396 a	5218 a	1588 ab	590 bc	0 a	Rupp
Hybrid Pam	5127 ab	4538 a	318 c	272 cde	0 a	Rupp
Magic Lantern	3403 ab	1361 a	1407 b	635 b	0 a	Harris Moran
Mother Lode	3539 ab	2133 a	862 d	545 bcd	0 a	Rupp
Phantom	2405 b	953 a	1316 bc	136 e	0 a	Gemin
Pik A Pie	5627 ab	4855 a	545 de	227 de	0 a	Rupp

Sorcerer	3131 ab	1225 a	1588 ab	318 bcde	0 a	Harris Moran
Trojan	2632 b	1452 a	953 cd	227 de	0 a	Seedway

²Means within a column followed by the same letter are not significantly different at the 0.05 level of probability, Duncan's multiple range tests.

Table 3. Quality ratings of pumpkin cultivars at Te University of Tennessee Middle Tennessee Experiment Station at Spring Hill, 2001.

Cultivar	Fruit color	Fruit app.	Stem quality	Fruit uniformity	Fruit length	Fruit diameter
Aspen	8.5 a ²	7.0 a	7.0 a	6.0 b	9.0 b	9.0 b
Autumn King	8.0 ab	7.0 a	7.0 a	6.0 b	9.0 b	8.8 b
Howdy Doody	8.5 a	7.0 a	7.0 a	6.0 b	7.0 c	10.5 a
Hybrid Pam	7.3 c	7.0 a	7.0 a	7.5 a	7.0 c	7.0 d
Magic Lantern	8.0 ab	7.0 a	7.0 a	6.0 b	8.0 d	8.0 c
Mother Lode	7.3 c	7.0 a	7.0 a	6.0 b	10.0 a	7.3 d
Phantom	8.5 a	7.0 a	7.0 a	7.3 a	8.0 d	8.0 c
Pik A Pie	8.0 ab	7.0 a	7.0 a	7.5 a	8.0 d	8.0 c
Sorcerer	7.8 bc	7.0 a	7.0 a	7.3 a	8.0 d	8.0 c
Trojan	8.0 ab	7.0 a	7.0 a	6.5 b	8.5 c	8.3 c

²Means within a column followed by the same letter are not significantly different at the 0.05 level of probability, Duncan's multiple range tests.

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This research represents one season's data and does not constitute recommendations. After sufficient data is collected over the appropriate number of seasons, final recommendations will be made through research and extension publications.