

## **Performance of Pumpkin Cultivars, Ames Plantation, 2001**

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### **Interpretative Summary**

The pumpkin cultivars were highly productive and fruit size was very large for most of the large fruited cultivars. 'Appalachian' was among the top producers of large fruit.

### **Introduction**

Pumpkins are grown in large commercial acreage for the Halloween market in Tennessee. An estimated 3500 acres of pumpkins are produced in Tennessee, with over half on the Cumberland Plateau. Pumpkins have been a profitable crop 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 addressed for successful production of pumpkins. 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 Ames Plantation at Grand Junction 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 400 lb/A of 15-15-15 and incorporated with a disk on May 10. Bensulide (Prefar) was applied at 6.0 lb ai/A on June 11 and soil incorporated with the final disking. Plots were direct seeded with the selected cultivars on June 12. Plot size was one row, with a spacing of 12 by 20 ft. Each row contained 5 hills with 3 seeds/hill. After germination, hills were thinned to 2 plants/hill. Experimental plot design was a randomized complete block with four replications. A preemergence application of clomazone (Command) at 0.3375 lb ai/A was made on June 3.

Insect control was by esfenvalerate (Asana) at 0.05 lb ai/A alternated with carbaryl (Sevin) at 1.0 lb ai/A on a 7 to 10 frequency. Fungicides were azoxystrobin (Quaddris) at 0.25 lb ai/A alternated with a combination of chlorothalonil (Bravo) at 2.0 lb ai/A and myclobutanil (Nova) at 0.125 lb ai/A applied with each insecticide treatment. Pumpkins were harvested on Sept 25 and 28. 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.

### Results and Discussion

Total tons of pumpkins produced were not significantly different between the cultivars (Table 1). 'Hybrid Pam', which was the only small fruited cultivar, produced a higher tonnage in the less than 10 lb class than any other cultivar. 'Mother Lode' was among varieties that produced a larger tonnage that weighed over 20 lb per pumpkin. 'Appalachian' led several cultivars that produced a higher tonnage that weighed between 15 and 20 lb per pumpkin. Fruit of 'Hybrid Pam' had the lowest average weight. The remaining varieties were not significantly different.

'Hybrid Pam' was among the cultivars to produce more pumpkins per acre. 'Hybrid Pam' also produced more pumpkins that weighed less than 10 lb per pumpkin than any other cultivar (Table 2). Yields in number of fruit per acre generally were very high. This is a high yield since the row spacing was 12 ft in order to help separate the cultivars at harvest. 'Other Lode' produced more fruit that weighed over 20 lb per pumpkin than all cultivars except 'Appalachian', 'Aspen', 'Autumn King', Gold Rush', and Gold Strike'. 'Appalachian' was among the leading varieties for pumpkins per acre in the 15 to 20 class.

No significant differences were found among the cultivars for quality characteristics, fruit length, nor fruit diameter (Table 3).

Table 1. Yield in tons per acre of different size classes of pumpkin cultivars at The University of Tennessee Ames Plantation at Grand Junction, 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	Pumpkin average wt-lb
Gold Strike	32.4 a <sup>z</sup>	2.8 b	11.4 abcd	8.9 ab	9.3 ab	12.6 a
Gold Rush	21.9 a	1.9 b	4.0 cd	4.3 bc	11.6 a	12.3 a
Aspen	29.5 a	2.9 b	10.7 abcd	9.4 ab	6.5 abc	12.1 a
Appalachian	35.2 a	2.5 b	8.9 abcd	12.3 a	11.5 a	12.4 a
Magic Lantern	32.1 a	5.4 b	14.5 ab	9.8 ab	2.5 bc	12.5 a
Autumn King	28.3 a	3.2 b	7.2 bcd	8.8 ab	9.1 ab	12.6 a

Howdy Doody	27.1 a	3.8 b	12.5 abc	8.8 ab	2.1 bc	12.0 a
Mother Lode	32.5 a	3.2 b	10.3 abcd	5.3 abc	13.7 a	12.6 a
Merlin	34.4 a	6.8 b	17.0 a	7.8 abc	2.9 bc	12.0 a
Small Fruited						
Hybrid Pam	18.9 a	15.8 a	2.2 d	0.9 c	0.0 c	10.5 b

<sup>z</sup>Means 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 size4 classes of pumpkin cultivars at The University of Tennessee Ames Plantation at Grand Junction, 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 Sour
Gold Strike	4235 ab <sup>z</sup>	666 b	1815 abcd	1029 ab	726 ab	Rup
Gold Rush	2541 b	605 b	666 cd	484 bc	787 ab	Rup
Aspen	4175 ab	787 b	1694 abcd	1150 ab	545 abc	Seed
Appalachian	4538 ab	666 b	1452 abcd	1392 a	1029 a	Rup
Magic Lantern	5082 ab	1392 b	2299 ab	1150 ab	242 bc	Harri Mora
Autumn King	3751 ab	908 b	1150 bcd	968 ab	726 ab	Rup
Howdy Doody	4417 ab	1271 b	1936 abc	1029 ab	182 bc	Rup
Mother Lode	4175 ab	787 b	1694 abcd	605 abc	1089 a	Rup
Merlin	5990 ab	1997 b	2844 a	908 abc	242 bc	Harri Mora

Small Fruited						
Hybrid Pam	7079 a	6595 a	363 d	121 c	0.0 c	Seedway

<sup>2</sup>Means 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 Ames Plantation at Grand Junction, 2001.

Cultivar	Fruit color	Fruit app.	Stem quality	Fruit uniformity	Fruit length	Fruit diam
Gold Strike	9.0 a <sup>2</sup>	7.3 a	6.3 a	8.7 a	11.3 a	11.3
Gold Rush	7.3 a	7.0 a	7.3 a	7.3 a	11.0 a	11.7
Aspen	9.0 a	7.7 a	4.7 a	8.3 a	10.0 a	11.0
Appalachian	8.7 a	6.7 a	6.3 a	8.3 a	10.7 a	11.0
Magic Lantern	9.0 a	7.7 a	6.0 a	8.4 a	9.7 a	10.3
Autumn King	9.0 a	7.3 a	5.3 a	8.4 a	9.0 a	9.7 a
Howdy Doody	8.3 a	7.0 a	8.3 a	8.7 a	9.0 a	11.0
Mother Lode	7.3 a	7.3 a	6.3 a	8.0 a	11.3 a	10.3
Merlin	8.7 a	7.7 a	6.3 a	8.3 a	10.3 a	10.0
Small Fruited						
Hybrid Pam	9.0 a	7.0 a	8.3 a	8.0 a	8.3 a	9.3 a

<sup>2</sup>Means 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.