

## **Performance of Pumpkin Cultivars, Highland Rim Experiment Station, 2000**

Charles A. Mullins, Barry Sims, Bill Pitt, and Steve C. Bost

### **Interpretative Summary**

All pumpkin cultivars were fairly productive. 'Gold Rush', 'Howdy Doody' and 'Mother Lode' were among cultivars that produced the most tonnage per acre. 'Gold Fever' and 'Howdy Doody' were among cultivars that produced the highest number of pumpkins per acre. 'Gold Fever' produced a high yield of fruit by weight that weighed less than 15 lb/pumpkin. 'Gold Rush' and 'Mother Lode' produced the highest tonnage and number of pumpkins that weighed over 15 lbs per pumpkin. Yellow vine was most severe on 'Howden' and least severe on 'Howdy Doody'. Yellow vine reduced fruit quality and fruit yields.

### **Introduction**

Pumpkins for Halloween usage are grown throughout Tennessee . The primary acreage of pumpkins is on the Cumberland Plateau. Cultivars have been found to perform differently at different locations. 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 to control insect and disease problems. Bees are needed for pollination. Pumpkins require a fairly high degree of management for successful results. An experiment was conducted at the Highland Rim Experiment Station at Springfield, TN in 2000 to evaluate performance of 10 pumpkin cultivars.

### **Materials and Methods**

The site was prepared for planting by conventional tillage methods. Ammonium Nitrate (34-0-0) fertilizer was broadcast at 150 lb/A and incorporated with a disk on May 21. Plots were direct seeded with the selected cultivars on May 21. 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 May 21.

Insect control was by esfenvalerate (Asana) at 0.05 lb ai/A on a 7 to 14 day frequency. The fungicide used was azoxystrobin (Quadris) at 0.25 lb ai/A or (Bravo) at 2.0 lb ai/A applied with each insecticide treatment. Pumpkins were harvested on Sept 7. Harvested

pumpkins were sorted according to sizes of over 20 lb, 15 to 20 lb, and less than 15 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 fairly high (Tables 1 and 2). 'Mother Lode' and 'Howdy Doody' had a higher total tonnage than all cultivars except 'Howden' and 'Old Zebs'. 'Howdy Doody' produced a higher tonnage of pumpkins that weighed less than 15 lb per pumpkin than all other cultivars except 'Gold Fever' and 'Gold Standard'. 'Gold Standard' produced a higher tonnage of pumpkins that weighed 15 to 20 lb per pumpkin than all other cultivars. 'Gold Rush' produced a higher tonnage of pumpkins that weighed over 20 lb per pumpkin than all cultivars except 'Gold Fever' and 'Merlin'. The average pumpkin weight was highest for 'Gold Rush'. 'Gold Fever' and 'Merlin' were among cultivars that produced pumpkins with the smallest average weight. Yield in number per acre was very similar to yield in tons per acre for the 10 cultivars.

Yellow vine, a bacterial disease, caused moderate damage to plants in the trial (Table 3). 'Howdy Doody' received one of the highest ratings for yellow vine indicating that was less severely affected. 'Howden' was damaged severely by yellow vine. 'Gold Fever' was among cultivars with the highest fruit appearance ratings. 'Gold Rush' and 'Old Zebs' were among cultivars with the largest fruit diameter. Other characteristics that were rated or measured did not vary significantly due to cultivar.

Table 1. Yield in tons per acre of different size classes of pumpkin cultivars at The University of Tennessee Highland Rim Experiment Station at Springfield, 2000.

Cultivar	Total yield - tons/A	Pumpkins weighing <15 lb - tons/A	Pumpkins weighing 15-20 lb - tons/A	Pumpkins weighing >20 lb - tons/A	Pumpkin average wt - lb
Gold Fever	13.2 ab <sup>z</sup>	13.2 ab	0 b	0 d	8.33 c
Gold Rush	16.7 a	2.8 e	3.8 a	10.1 a	21.36 a
Gold Standard	12.9 ab	12.9 abc	0 b	0 d	10.23 bc

Gold Strike	12.8 ab	8.3 bcd	0.5 b	3.9 bc	14.69 b
Howden (Ck)	7.7 b	4.8 de	1.3 b	1.6 cd	12.81 bc
Howdy Doody	17.1 a	17.1 a	0 b	0 d	11.87 bc
Magic Lantern	12.4 ab	11.8 bc	0 b	0.6 cd	10.05 bc
Merlin	10.2 ab	10.2 bcd	0 b	0 d	8.46 c
Mother Lode	16.3 a	9.3 bcd	0 b	7.2 ab	14.08 b
Old Zebs	9.8 b	7.6 cde	0 b	2.1 cd	11.50 bc

<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 size classes of pumpkin cultivars at The University of Tennessee Highland Rim Experiment Station at Springfield, 2000.

<b>Cultivar</b>	Total yield - no./A	Pumpkins weighing < 15 lb - no./A	Pumpkins weighing 15-20 lb - no./A	Pumpkins weighing >20 lb - no./A	Seed sot
Gold Fever	3222 a <sup>z</sup>	3222 a	0 b	0 c	Rupp
Gold Rush	1634 bc	590 e	408 a	635 a	Rupp
Gold Standard	2496 ab	2496 abc	0 b	0 c	Rupp
Gold Strike	1815 bc	1448 cde	45 b	272 b	Rupp
Howden (Ck)	1134 c	908 de	136 b	91 bc	Harris
Howdy Doody	2859 a	2859 ab	0 b	0 c	Rupp
Magic Lantern	2405 ab	2405 abc	0 b	45 bc	Harris

Merlin	2360 ab	2360 abc	0 b	0 c	Harris
Mother Lode	2314 ab	1815 bcd	0 b	499 a	Rupp
Old Zebs	1634 bc	1497 cde	0 b	136 bc	Rupp

<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 3. Quality ratings of pumpkin cultivars at The University of Tennessee Highland Rim Experiment Station at Springfield, 2000.

<b>Cultivar</b>	Yellow Vine Virus rating <sup>y</sup>	Fruit appear. <sup>y</sup>	Overall fruit quality <sup>y</sup>	Fruit uniformity <sup>y</sup>	Fruit length (in.)	Fruit diame (in.)
Gold Fever	4.5 abc <sup>z</sup>	6.50 a	6.25 a	8.00 a	9.0 a	8.25 a
Gold Rush	4.75 abc	4.50 ab	5.50 a	5.75 a	10.2 a	9.50 a
Gold Standard	5.25 ab	5.50 ab	5.75 a	7.75 a	7.8 a	8.25 a
Gold Strike	3.25 b-e	4.75 ab	4.75 a	6.00 a	10.0 a	8.75 a
Howden (Ck)	1.25 c	5.00 ab	5.50 a	6.50 a	8.8 a	9.00 a
Howdy Doody	6.00 a	5.00 ab	5.25 a	8.00 a	8.8 a	8.75 a
Magic Lantern	5.25 ab	5.50 ab	5.75 a	7.50 a	9.0 a	9.00 a
Merlin	4.00 a-d	4.25 b	4.50 a	5.75 a	7.5 a	6.75 b
Mother Lode	2.00 de	5.50 ab	6.00 a	5.75 a	9.8 a	9.00 a
Old Zebs	2.50 cde	4.50 ab	5.75 a	6.75 a	9.5 a	9.00 a

<sup>y</sup> Ratings on a scale of 1 to 10; 10=most desirable.

<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.

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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.