

# **Performance of Butternut Squash Cultivars, Plateau Research and Education Center, 2007**

*A. Brent Smith*

## **Interpretative Summary**

Dry weather significantly reduced the yield of butternut squash. 'Butternut 401' produced more fruit per acre. 'Atlas' fruit had significantly higher average weight and total yield.

## **Introduction**

Butternut squash are grown throughout Tennessee for both decoration and consumption. Cultivars have been found to perform differently at different locations. Rainfall and temperature differences affect fruit set and development and disease problems. Butternut squash 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 acorn squash as an alternative crop. Butternut squash production is over-all quite easy, but a few problems exist that need to be considered by growers. Weed control can be a problem in butternut squash 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. An experiment was conducted at the Plateau Research and Education Center in Crossville, TN in 2007 to evaluate performance of 8 butternut squash cultivars.

## **Materials and Methods**

The site was prepared for planting by conventional tillage methods. Fertilizer was broadcast at 350 lb/A of 15-15-15 and incorporated with a disk on June 4. Plots were direct seeded with the selected cultivars on June 11. Plot size was one row, 6 ft 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 and ethalfluralin (Curbit) at 0.60 lb ai/A was made on June 12. Following the practices of most local growers, no irrigation was used on the trial.

Insect control was by esfenvalerate (Asana) at 0.05 lb ai/A or endosulfan (Thiodan) at 0.5 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. Squash were harvested on Sept 5 to give all varieties time to complete fruiting cycle. Harvested acorn squash were counted and weights taken. Colors of the varieties were noted, as well as any anomalies in the given crop. Stem quality was also evaluated.

The 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**

Squash yields were effected by the very dry weather that occurred during the 2007 growing season, with dramatically fewer fruit than what is expected for these varieties. 'Atlas' had significantly higher average weight per fruit and total yield of the varieties evaluated (Table 1). No significant differences where seen between the total yield of the other varieties tested. 'Avalon', 'Butternut 401', and 'Waltham' were among several varieties to have lower average weights per fruit. 'Butternut' had significantly more fruit produced per acre than other varieties. No significant differences in the number of fruit per acre where observed between the other varieties in the test.

No significant difference was found in the stem quality and fruit appearance of the varieties evaluated (Table 2). All the varieties tested were tan colored traditional varieties.

Table 1. Total Yield, Average Weight, and Growing Days of Butternut Squash varieties evaluated at the University of Tennessee -Plateau Research and Education Center, 2007.

<b>Cultivar</b>	<b>Total Yield (lbs/A)</b>	<b>Total Squash (Number /A)</b>	<b>Ave. Weight (lbs.)</b>	<b>Growing Days</b>
Atlas	14593 a <sup>z</sup>	5354.3 b	2.64 a	90
Avalon	6647 b	4809.8 b	1.41 bc	88
Butternut 401	8304 b	7441.5 a	1.12 c	80
Pilgrim	7269 b	4537.5 b	1.59 b	84
Waltham	5336 b	3902.3 b	1.38 bc	97
Butternut Supreme	6154 b	4265.3 b	1.48 bc	95
Butterboy	7850 b	5263.5 b	1.51 bc	80
Puritan	6371 b	4446.8 b	1.49 bc	95

<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: Stem Quality, Fruit Appearance, and Seed Source of Butternut Squash varieties evaluated at the University of Tennessee -Plateau research and Education Center, 2007.

<b>Cultivar</b>	<b>Stem Quality</b>	<b>Fruit Appear. <sup>Y</sup></b>	<b>Seed Source</b>
Atlas	9.25 a <sup>z</sup>	9.00 a	Knox Seed
Avalon	9.00 a	9.00 a	Rupp
Butternut 401	9.25 a	9.00 a	Rupp
Pilgrim	9.25 a	9.00 a	Rupp
Waltham	9.25 a	9.00 a	Seedway
Butternut Supreme	9.00 a	9.00 a	Seedway
Butterboy	9.00 a	9.00 a	Seedway
Puritan	9.00 a	9.00 a	Seedway

<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.

<sup>y</sup> - On scale 1 to 10. 10 = most desirable.