

## **HEIRLOOM TOMATOES vs. HYBRIDS - 2004**

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### **Introduction**

A field trial was conducted at the Rutgers Snyder Research and Extension Farm, Pittstown, NJ in 2004 to compare the yield of heirloom and hybrid tomato cultivars. This evaluation was funded in part by a NJAES Program Enhancement Grant. The hybrid commercial cultivars were Florida 47, Florida 91, Floralina and Sunbrite. Heirloom tomatoes were Rutgers, Mortgage Lifter, Brandywine and Box Carl Willie. Seeds were sown on April 26 in 200 cell trays containing peat vermiculite media and transplanted to 48 cell trays on May 17. Plants were planted in the field with a water wheel transplanter on June 16. The plot received preplant 50 lbs/acre of nitrogen, 50 lbs/acre of phosphorus and 283 lbs/acre of potassium disked into the soil. Soil pH was within the recommended range.

Beds on 6-foot centers were formed and black plastic mulch with a drip irrigation tube was laid. The tomatoes were planted with a water wheel transplanter in single rows spaced 18" apart. The transplant starter solution consisted of a 10-52-10 fertilizer at 1 lb/100 gallons of water plus 15.5-0-0 1 lb/150 gallons of water. The varieties were arranged in a randomized block design with 4 replications. Devrinol 50 DF at 4 lbs/acre was pre-plant incorporated. Sencor 75 DF at 0.33 lbs/acre was applied between the plastic beds after transplanting. Gramoxone MAX 35SC was used to spot treat weeds.

Insects and diseases were controlled on a 7 to 10 day schedule using the NJ commercial recommendations for tomatoes. Hybrid tomato cultivars were supported by 4-foot stakes and 8 foot stakes were used for the heirloom tomatoes. The plants were not suckered in 2004. The tomatoes were trellised through the season as growth progressed.

### **Harvesting and Evaluation**

Tomatoes were hand harvested on September 2,14,27 and October 12. The fruit was evaluated and weighed for total production and marketable yield. Major defects were identified and recorded.

### **Results and Discussion**

Early production data (09/02) from the trial is summarized in Table 1 (Note: Boxes/Ac. based on 25 lb boxes). Excessive rainfall, cool temperatures and cloudy days held back ripening of the fruit. In September rain check became a problem especially on plants with poor leaf cover. Evaluation of marketable fruit was difficult, since consumers of heirloom tomatoes are much more tolerant of defects.

**Table 1. Early Production of Heirloom vs. Hybrid Tomatoes**

<b>Cultivar</b>	<b>Total</b>		<b>Marketable Fruit</b>	
	<b>lbs/ac.</b>	<b>lbs/ac.</b>	<b>Boxes/ac.</b>	<b>%</b>
Mortgage Lifter	65,679 a *	39,824 a	1,593	60.6
Sunbrite	50,263 b	35,674 ab	1,427	71.0
Rutgers	45,569 bc	34,911 ab	1,396	76.6
Brandywine	43,010 bcd	29,560 bc	1,182	68.7
Florida 47	40,099 bcd	27,268 bc	1,091	68.0
Floralina	36,034 d	24,826 c	993	68.9
Box Car Willie	29,337 de	19,793 cd	792	67.5
Florida 91	20,292 e	13,343 d	534	65.7

Mortgage Lifter produced the most marketable fruit in the first harvest. Total production data from the trial is summarized in Table 2.

**Table 2. Total Production of Heirloom vs. Hybrid Tomatoes**

<b>Cultivar</b>	<b>Total</b>		<b>Marketable Fruit</b>	
	<b>lbs/ac.</b>	<b>lbs/ac.</b>	<b>Boxes/ac.</b>	<b>%</b>
Florida 91	86,324 a *	62,433 a	2,497	72.3
Floralina	82,198 ab	55,326 abc	2,213	67.3
Florida 47	78,901 abc	57,151 ab	2,286	72.4
Mortgage Lifter	76,720 bc	45,844 cd	1,834	59.7
Box Car Willie	75,026 bc	51,107 bcd	2,044	68.1
Rutgers	74,947 bc	57,429 ab	2,297	76.6
Sunbrite	72,521 cd	51,845 bcd	2,074	71.5
Brandywine	65,458 d	41,633 d	1,665	63.6

Brandywine was the least productive of the heirloom tomatoes and had the lowest amount of marketable fruit. The fruit cracked severely from the frequent rains and fruit quality decreased rapidly as the season progressed. The size of Box Car Willie fruit was very variable. Rutgers produced fruit of very good quality, however fruit size was very variable.

The commercial hybrid tomatoes all produced well except for Sunbrite. Based on this trial, Mortgage Lifter did the best of the heirlooms. Florida 91, Floralina and Florida 47 all produced well in 2004.

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\* Means followed by the same letter in columns are not significantly different, 5 % level.