

HEIRLOOM TOMATOES AND PROFITABILITY

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Introduction

A field trial was conducted at the Rutgers Snyder Research and Extension Farm, Pittstown, NJ in 2003 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 16 in 200 cell trays containing peat vermiculite media and transplanted to 48 cell trays on May 16. Plants were planted in the field with a water wheel transplanter on June 12. The plot received preplant 50 lbs/acre of nitrogen and 100 lbs/acre each of phosphorus and 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./75 gal. of water. The varieties were arranged in a randomized block design with 4 replications. No herbicides were applied preplant because of excessively wet soil. Sencor 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. On July 8, two to three suckers were hand removed from all the tomato plants. The tomatoes were trellised through the season as growth progressed.

Harvesting and Evaluation

Tomatoes were hand harvested on August 22, 29, September 5, 11, 17 and 24. The fruit was evaluated and weighed for total production and marketable yield. Major defects were identified and recorded.

Results and Discussion

Early production data (08/22,29) 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.

Catfacing and zippering were common in the early harvests on all cultivars. 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

Cultivar	lbs/ac.	lbs/ac.	Marketable Fruit Boxes/ac.	%
Mortgage Lifter	24,648 a ¹	19,151 a	766	77.7
Brandywine	17,236 b	7,564 b	302	43.9
Sunbrite	15,554 bc	11,223 b	449	72.2
Floralina	14,546 bcd	11,542 b	462	79.3
Box Car Willie	11,353 de	8,665 b	347	76.3
Florida 91	9,441 de	6,757 b	270	71.6
Florida 47	8,912 e	6,064 b	243	68.0
Rutgers	7,886 e	6,224 b	249	78.9

Mortgage Lifter produced the most marketable fruit in the first harvest. However, with heavy rainfall Mortgage Lifter developed moderate cracking.

Total production data from the trial is summarized in Table 2.

Table 2. Total Production of Heirloom vs. Hybrid Tomatoes

Cultivar	lbs/ac.	lbs/ac.	Marketable Fruit Boxes/ac.	%
Mortgage Lifter	58,239a ¹	36,199 c	1,448	62.1
Floralina	57,949 a	48,356 a	1,934	83.4
Florida 91	56,676 ab	44,817 ab	1,793	79.1
Florida 47	56,108 ab	45,791 a	1,832	81.6
Box Car Willie	54,532 ab	38,770 bc	1,551	71.1
Sunbrite	51,485 bc	33,683 c	1,347	65.4
Brandywine	50,638 bc	24,247 d	970	47.9
Rutgers	48,110 c	36,580 c	1,463	76.0

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, but fruit size was very variable.

The commercial hybrid tomatoes all produced well except for Sunbrite, catfacing and zippering were a major cause of cullage in the early harvests. Rain check and radial cracking were severe on Sunbrite, which did not have good leaf cover.

Based on this trial, Mortgage Lifter did the best of the heirlooms. Florida 47, Florida 91 and Floralina all produced well in 2003. This study will be repeated again in 2004.

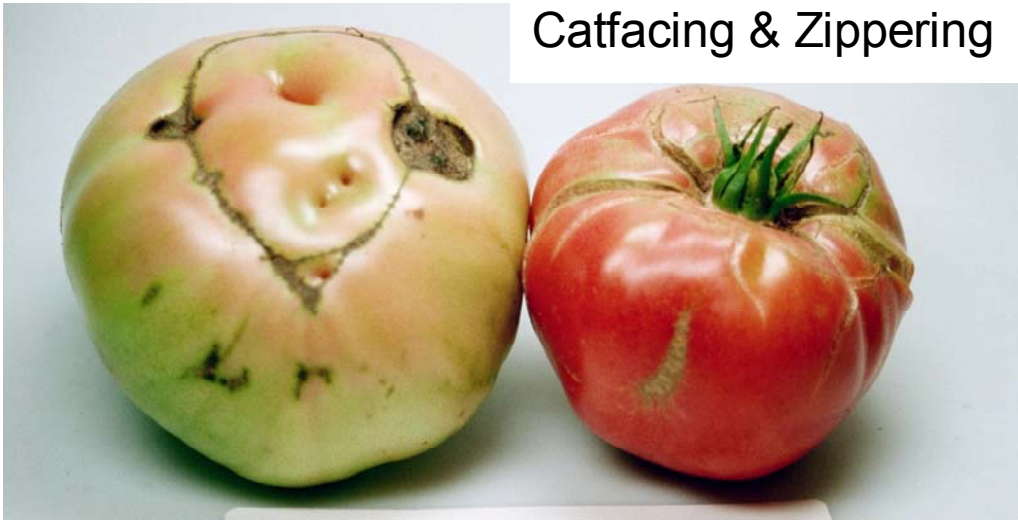
¹ Means followed by the same letter in columns are not significantly different, 5% level.

Pictures of Defective Tomatoes

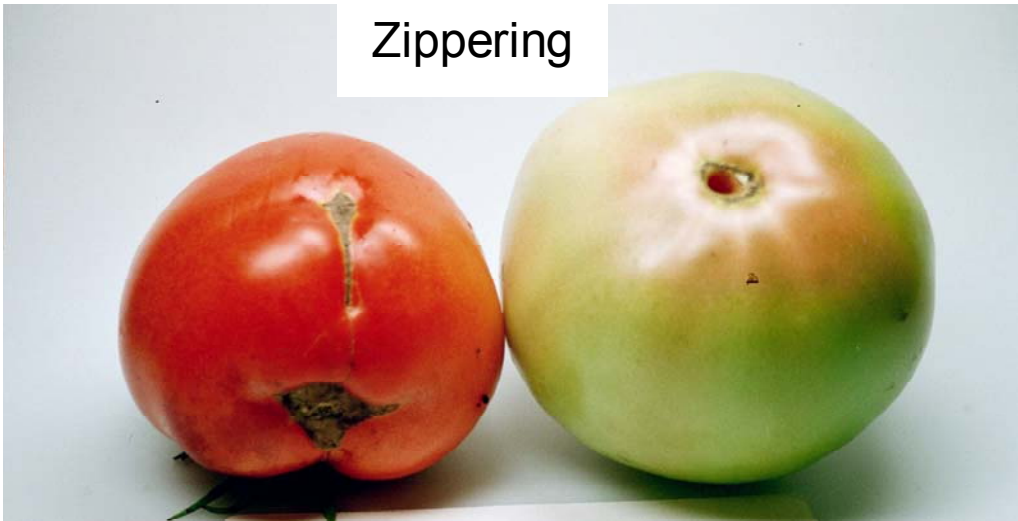




Catfacing



Catfacing & Zippering



Zippering

Concentric Cracking & Russetting



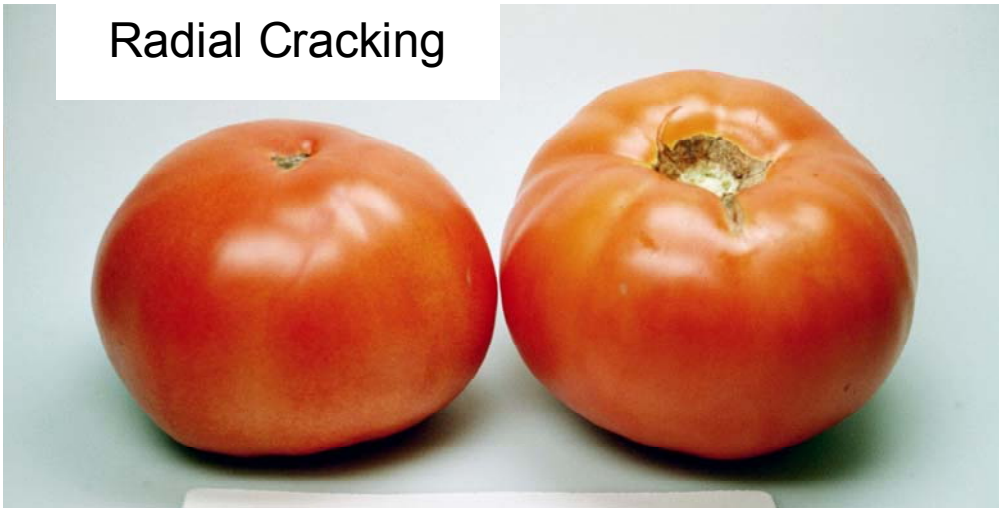
Graywall



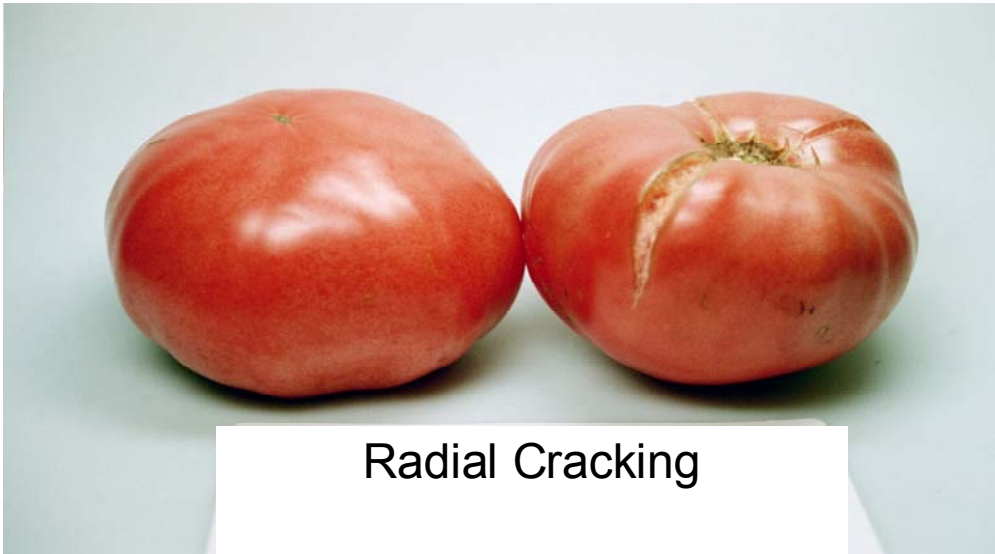
Blossom Scar



Radial Cracking



Radial Cracking



Blossom End Rot

