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Tomato Cultivar Trial

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Abstract

The 2011 tomato trial evaluated 16 fresh market cultivars for yield potential and fruit quality.

Keywords

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Disciplines

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Tomato Cultivar Trial

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Introduction

The 2011 tomato trial evaluated 16 fresh market cultivars for yield potential and fruit quality.

Materials and Methods

Cultivars were planted in the greenhouse on April 8, 2011, one seed per cell, in 72 cell trays. Transplanting to the field occurred on May 19. Tomato plants were grown on black plastic mulch and fertigated with drip tubes. Trial design was a randomized complete block with two replications. A plot consisted of a single row of eight plants spaced 21 in. apart. Weed control was achieved with use of black plastic mulch and applying Treflan and Sencor herbicides between mulch rows. Disease and insect management was accomplished with applications of Mustang Max insecticide and Cabrio and Equus (chlorothalonil) fungicides. Fruit harvest occurred August 1 through September 1.

Results and Discussion

The tomato plants grew vigorously after transplanting and all cultivars produced a good total yield (Table 1). Fruit weights tended to be heavy with many cultivars producing an average fruit weight between 8 and 10 oz. The biggest problem observed in the trial was a

high percentage of fruit having yellow shoulders and internal white tissue. This failure of the fruit to color up properly is usually described as a physiological disorder caused by high temperatures during fruit development, but other factors, notably genetics and soil nutrition, have also been identified. Daytime temperatures were often 90°F during fruit development and ripening. All cultivars were afflicted with this ripening disorder but Sunstart, Red Defender, Amelia, Phoenix, and Linda seemed to have the highest frequency and most severe symptoms. Fruit cracking is another undesirable disorder that is often a problem during tomato production. Fortunately most of the cultivars in this trial showed good resistance to fruit cracking and only Amelia, a large-fruited cultivar, showed a high percentage (19.8%) of cullage due to fruit cracking. Sunstart, in comparison with the other entries, had variable fruit size, irregular shape, and severe yellow shoulder keeping marketable yield low.

Overall, considering yield and fruit appearance, top performers in trial were: Red Deuce, Rocky Top, HM 8849, Red Bounty, Mountain Fresh, Primo Red, and Florida 91. Mountain Spring and Mountain Glory produced nice fruit but yields could have been higher.

Table 1. Tomato cultivar seed source and yield data.

Cultivar	Seed source^b	Early market (lb/plt)	Total market (lb/plt)	Avg. frt wt (oz)	Total yield (lb/plt)	Cull (%)	Crack (%)
Red Deuce	HM	7.9	16.4	10.3	24.6	32.2	6.6
Rocky Top	RG	5.6	15.9	9.1	22.1	26.0	7.9
HM 8849	HM	8.5	15.7	9.4	25.5	27.6	7.3
Red Bounty	HM	6.2	15.2	9.5	24.9	34.3	12.6
Scarlet Red	HM	7.2	15.1	9.3	21.9	28.0	11.6
Mountain Fresh	HM	6.0	15.1	8.1	21.0	24.3	6.9
Primo Red	HM	9.1	14.9	8.5	24.2	35.2	10.0
Red Defender	HM	4.8	14.8	8.1	21.0	24.2	6.4
Phoenix	RU	7.2	14.3	9.1	19.8	24.7	3.3
Florida 91	RU	2.9	14.1	10.0	22.5	26.1	6.3
Linda	RU	5.5	13.5	9.7	21.2	33.3	6.8
Mountain Spring	RG	4.8	12.1	8.7	20.2	33.3	10.1
Mountain Glory	RG	5.0	12.1	7.9	18.5	27.2	6.6
Amelia	HM	4.5	11.6	10.0	21.0	34.4	19.8
Sunstart	RU	3.5	6.2	8.7	23.4	66.0	8.0
Monticello ^a	RG	6.9	16.8	3.6	21.7	23.2	1.3
Trial avg.		6.0	14.0	8.7	22.1	31.2	8.2
LSD 5%		2.6	3.8	1.0	n.s.	6.4	4.8

^aMonticello is a Roma type tomato included for comparison.

Seed source: HM = Harris Moran, RG = Rogers Bros., RU = Rupp Seeds.

Early market = early marketable harvest August 5–12. Total yield = harvest August 5–September 5.

Market = marketable fruit with diameter greater than 2 5/8 in. and having good shape and color, free of cracks, rot, and yellow shoulders.