

2013

Tomato Cultivar Trial

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Recommended Citation

Lawson, Vincent, "Tomato Cultivar Trial" (2013). *Iowa State Research Farm Progress Reports*. 1926.
http://lib.dr.iastate.edu/farms_reports/1926

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Abstract

The 2012 tomato trial evaluated 16 fresh market cultivars for yield potential and fruit quality when grown on black plastic mulch.

Keywords

RFRA1205

Disciplines

Agricultural Science | Agriculture | Fruit Science

Tomato Cultivar Trial

RFR-A1205

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Introduction

The 2012 tomato trial evaluated 16 fresh market cultivars for yield potential and fruit quality when grown on black plastic mulch.

Materials and Methods

Cultivars were planted in the greenhouse on April 10, 2012, one seed per cell, in 72 cell trays. Transplanting to the field occurred on May 18. In the field, 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. Tomato plants were not pruned or staked but allowed to grow into a bush on the ground. 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, Equus (chlorothalonil), and Kocide fungicides. Fruit harvest occurred July 24 through August 25.

Results and Discussion

Tomato plants grew rapidly after transplanting and quickly developed into large bushy plants. Temperatures were unusually hot during July but a good fruit set occurred and most cultivars had red fruit ready for harvest by July 24. Sunstart stood out by being the only cultivar with a large picking at this early date (Table 1) although quality was mediocre due to hot weather. In general, all cultivars produced good

total yields and large fruit this year. Average fruit weights for cultivars ranged from 7.8 to 10.8 ounces. Red Bounty, Red Deuce, and Linda produced the largest tomatoes.

A big problem observed in this year's trial was a high percentage of fruit having yellow shoulders and/or internal white tissue (sometimes called white cores). These color defects occurred in varying degrees of severity reducing fruit quality and in severe cases making them unmarketable. Previous observations have indicated this problem is worse during hot summers and when tomatoes are grown on coarse sand—exactly what happened this season. To determine if there were cultivar differences for developing white cores, several fruit from each picking were cut open. All cultivars produced fruit with white cores and walls to differing degrees but the following were observed to have the most frequent and severe symptoms: Sunstart, Charger, Red Defender, Amelia, Phoenix, and Linda.

Another undesirable fruit disorder hurting marketability is fruit cracking. Because of favorable weather and large fruit size we saw a fair amount this year. Table 1 includes fruit cracking percentage for each cultivar with Red Deuce, Amelia, Red Bounty, and Scarlet Red having the highest percentages.

Overall, considering marketable yield, fruit appearance, size, and quality (particularly color), top performers in trial were: Red Deuce, Rocky Top, HM 8849, Red Bounty, Mountain Fresh, Primo Red, Mountain Glory, and Florida 91.

Table 1. Tomato cultivar trial seed source and yield data.

Cultivar	Seed source^a	Early^b yield lb/plt	Total^b yield lb/plt	US #1 fruit/plant	US #1 avg. wt oz	Cull %	Crack %
Red Deuce	HM	2.2	22.1	19.7	10.3	32	19
Charger	RU	1.8	18.6	22.2	9.2	28	6
HM 8849	HM	2.6	17.6	24.7	9.0	14	3
Primo Red	HM	2.6	17.2	21.3	8.8	22	9
Rocky Top	SY	1.2	16.4	20.6	9.4	21	7
Red Bounty	HM	1.0	16.2	16.2	10.8	30	13
Scarlet Red	HM	0.2	15.8	18.5	9.0	29	11
Florida 91	RU	0.3	15.8	19.0	8.9	19	4
Red Defender	HM	1.0	15.5	18.8	8.6	23	9
Phoenix	RU	0.5	15.3	18.7	9.2	27	6
Amelia	HM	1.6	15.0	16.3	9.3	35	14
Sunstart	RU	8.1	15.0	20.4	7.8	24	7
Mountain Fresh	HM	0.0	14.9	15.2	8.6	18	4
Mountain Glory	SY	1.3	14.8	18.0	8.4	17	5
Mountain Spring	SY	0.6	13.8	14.8	9.4	26	9
Linda	RU	1.2	13.6	14.7	10.0	25	7

^aSeed source: HM = Harris Moran, RU = Rupp Seeds, SY = Syngenta Seeds.

^bEarly yield = harvest 7/24 through 8/1. Total yield = harvest 7/24 through 8/25.

Large marketable = fruit diameter greater than 2 5/8 in., good shape and color, free of defects.

Cull = fruit that are cracked, have severe yellow shoulders, misshaped, rot or insect damaged.