

# Tomato Variety Trial Safford Agricultural Center, 1998

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## **Abstract**

*Four slicing and two Roma-type tomato varieties were grown in a replicated small plot trial on the Safford Agricultural Center in 1998. Varieties were picked regularly during the growing season with total tonnage picked being tabulated and plot weights by variety shown graphically against time during the season. Balboa variety of slicing tomato and Toro variety of Roma-type tomato were the highest yielding varieties with yields of 69 and 76 tons per acre respectively.*

## **Introduction**

Tomatoes have been grown by homeowners and for roadside stands for years in Graham County. As more area farmers are looking for crops to provide an alternative from the cotton monoculture, it was decided to look at different varieties of slicing and Roma-type tomatoes to find which ones would do best under our salty soil and arid growing conditions. This trial is one of many vegetable crop variety studies conducted at the Safford Agricultural Center in 1998.

## **Materials and Methods**

This variety trial was performed on the Safford Agricultural Center at an elevation of 2954 feet above sea level. Seedlings of the four slicing varieties and the two Roma-type tomatoes were transplanted in replicated small plot trials. Cultural practices and inputs are listed below in the crop history.

### *Crop History:*

Soil type: Pima clay loam variant

Previous crop: Vegetables

Experimental design: Randomized complete block with 4 replications

Planting date: Transplanted - 3 April 1998

Plant spacings: 18 inches between plants on 36 inch beds (Plant population 9680 plants/acre)

Fertilizer: 400 pounds/ac soil sulfur and 244 pounds/ac 16-20-0 applied 3/13, 100 pounds/ac urea applied 5/28

Irrigation: Watered up, furrow irrigated 9 times (ca. 36 inches of water)

Herbicide: None

Insecticide: None

Harvests: 2 July, 8 July and 13 July

Heat units (50/86°F):

Harvests were done manually and fruit was weighed, counted and rated for cracking. Per acre yields were determined by multiplying average plant yields by 9680.

## Results and Discussions

The top part of Table 1 contains the yield and fruiting characteristics for the slicing tomato varieties. Balboa appeared to produce more fruit per plant and tons per acre than the rest of the varieties in that class, even though variability in weights between replicates was large enough that no statistical differences were seen. Fruit weight was very similar between the four slicing varieties, but there were some differences in cracking ratings. Mountain Fresh had the least cracking and Springfield cracked the most.

Figure 1 shows how each slicing variety performed throughout the growing season. Balboa and Springfield were the strongest early season producers but dropped off quickly in the middle of August and then had slow and spotty recoveries in the Fall. Mountain Fresh and Royal Flush produced just the opposite with slower early season production but a strong finish in the Fall. It might be well for a producer to have varieties of both types to assure strong picking both early season and late. Unfortunately, none of the varieties produced well from the middle of August to the middle of September.

The bottom part of Table 1 contains the yield and fruiting characteristics for the Roma-type varieties. Similar to the slicing varieties, Toro produced much more fruit than Tigre, but the differences were not statistically significant. The Roma-type fruit were much smaller than the slicing tomatoes, but Toro produced many more of them per plant, hence the yield was higher. The Roma-type fruit was much firmer and cracking was not a problem.

Figure 2 shows the Roma-type tomato performance throughout the season. Toro performed better in early season as well as late season than Tigre. It is interesting to note that the Roma-types started producing quicker in the Fall than did the slicing type of tomatoes.

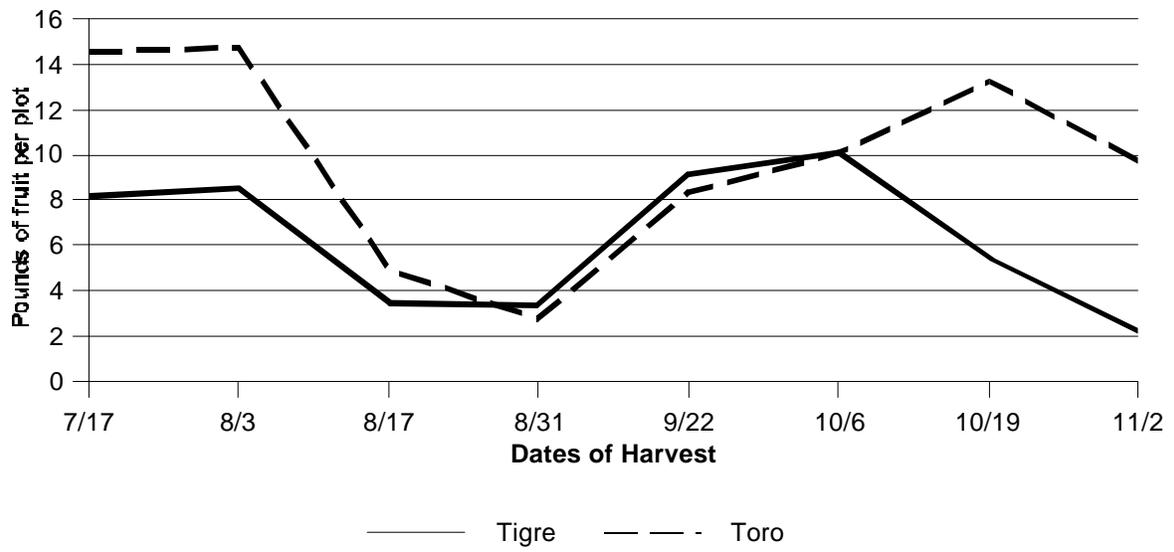
Many plants were lost due to curly-top virus during the season but these losses are not reflected in the final yields. Curly-top resistant lines will be procured for studies in 1999.

**Table 1. Yield and related agronomic data from slicing and roma-type tomato varieties grown on the Safford Agricultural Center, 1998.**

Variety	Yield (Tons/acre)	Fruit Wt (lbs/fruit)	Fruit per plant	Wt of fruit per plant	Fruit cracking rating <sup>2</sup>
Slicing tomatoes					
Balboa	68.9 a <sup>1</sup>	0.31 a	46.4 a	14.2 a	3
Mountain Fresh	59.3 a	0.32 a	38.7 a	12.3 a	4
Springfield	58.4 a	0.32 a	37.9 a	12.1 a	2
Royal Flush	53.8 a	0.30 a	37.4 a	11.1 a	3
Average	60.1	0.31	40.1	12.4 a	3
LSD(05)	20.5	0.03	12.3	4.2	--
CV(%)	21.3	6.20	19.2	21.4	--
Roma-type tomatoes					
Toro	75.5	0.18 a	87.3 a	15.6 a	4
Tigre	40.7	0.16 a	54.1 a	8.4 a	4
Average	58.1	0.17	70.7	12.0	4
LSD(05)	--	0.06	39.0	11.2	--
CV(%)	--	17.10	24.5	41.8	--

1. Numbers followed by the same letter, within a column, are not significantly different at the 95% level of confidence using Duncan's Multiple Range test.

2. Fruit cracking ratings: 1= bad, 4 = good



**Figure 2. Relative yields of Roma-type tomato varieties by dates of picking, grown on the Safford Agricultural Center, 1998.**