

## **Comparison of Tomato Varieties Grown in Victoria County**

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### **Summary:**

Thirteen varieties of tomatoes, ten medium to large fruited and three small fruited, planted on March 5 and 6 were evaluated for size, yield, and earliness of harvest. The hybrid tomatoes produced the highest yield while the heirloom varieties mature too late in the summer drastically reducing yield. Victoria was the highest yielding medium to large fruited hybrid tomato, producing 13 pounds of fruit per plant. The heirloom varieties only produced 1 pound per plant. Golden Sweet was the highest yielding small fruited tomato, producing six pounds of fruit per plant. Varieties ranged in production from one to 13 pounds of fruit per plant.

### **Objective:**

To evaluate 13 tomato varieties for size, yield, and earliness of harvest.

### **Materials and Methods:**

On January 17, 2009, the 13 tomato varieties chosen for this study were planted from seed for transplanting. Fifteen seeds of each variety were planted, each in their own cell, and were placed in a greenhouse until mature enough to transplant.

On March 5 and 6, 2009, a tomato variety demonstration was planted on a string/trellis system in a plot selected on Oliver Road in Victoria County. The soil was a sandy-clay-loam. The soil was tilled and bedded before planting. Two tablespoons of ammonium sulfate (21-0-0) fertilizer was worked into the soil around each tomato transplant. Transplants were watered in directly after planting and every day after until plants were established. Due to a very dry spring and summer, Netafim drip tape was used nearly weekly for supplemental irrigation on each row.

Tomatoes were fertilized after establishment by injection into the drip irrigation lines.

The tomato plants were sprayed with *Bacillus thuringiensis* to control worms and cyfluthrin to control leaf footed bugs and stinkbugs. Applications were made weekly or as needed May through June.

Tomato fruit was picked and weighed when ripe or nearly ripe.

## **Results and Discussion:**

Germination percentages were recorded and can be found in the table below. Tomato varieties Victoria, Brandywine Pink, and Golden Sweet had 100% germination while the variety Sweet Seedless (a new variety for 2009) had the poorest germination at 53%. While these numbers are important, they do not affect yield outcome since yield was calculated on a per plant basis.

Weather conditions remained dry for the duration of the study with minimal rainfall. Water management was critical to plant growth and satisfactory soil moisture was achieved by using the drip tape irrigation system.

Blossom end rot (a physiological disorder caused by calcium deficiency induced by drought/water stress) did occur, but was mostly isolated by variety. Early Girl (the indeterminate variety) was most susceptible. In this study, no measures beyond soil moisture management were taken to reduce the Blossom End Rot incidence. Due to the record drought during production, mulching the soil in addition to the drip irrigation may have lessened Blossom End Rot. Tomato diseases were not an issue due to dry conditions.

Siletz, Sweet Seedless, BHN 444, Golden Sweet, Sugar Snack, and Sugary were the earliest varieties to mature and first harvest occurred on April 30, 2009. Mexico was the slowest to mature; its first harvest was on May 29, 2009. See Table 1 for results.

Yield per plant for large fruited varieties ranged from 13 pounds (Victoria) to one pound (Brandywine Pink and Mexico). Final plant heights for the indeterminate tomato varieties ranged from six to nine feet. Heirloom tomatoes are noted to produce less fruit than the newer hybrid tomatoes due to their later maturation cycle compared to hybrids which causes pollination to occur during hotter periods resulting in less fruit. Due to their delayed fruiting, the heirloom varieties (Brandywine Pink and Mexico) utilized the available nutrients to grow additional vegetative growth. While all of the indeterminate tomatoes, with the exception of Sugary, grew to these heights, the two heirloom varieties and Giant Belgium had the most vegetative growth. Heirloom tomatoes may fruit better if planted in late summer (vs. spring) for pollination and production to occur during the fall, cooler season. The small fruited varieties showed a much smaller range in yield of six pounds (Golden Sweet) to five pounds per plant (Sugar Snack and Sugary).

Number of fruit per plant was also calculated. Within the large fruited varieties, Victoria produced 59 fruit per plant while Brandywine Pink and Mexico both produced only two fruit per plant. This is mostly likely due to the fact that Brandywine Pink and

Mexico are both heirloom tomato varieties and are not bred to be heavy producers, but only to keep the original characteristics of the variety.

Out of the small fruited varieties, Golden Sweet was top producer with 419 fruit per plant and Sugary held the fewest number of fruit per plant at 248.

### Acknowledgements:

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### Disclaimer Clause:

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Table 1. Growth and production characteristics of 13 tomato varieties. Sara and Travis Janak, Cooperators, Victoria County, Texas, 2009.

Tomato Variety	Growth Habit <sup>1</sup>	Number of Plants	Germination Percentage	Production Characteristics				
				Earliest Harvest Date	Number of Fruit/plant	Fruit Color	Fruit Size (inches)	Pounds per Plant
<b>Medium to Large Fruited</b>								
Victoria	D	15	100	May 4	59	Red	2.6	13
Celebrity	D	11	73	May 10	38	Red	2.9	11
BHN 444	D	13	87	April 30	26	Red	2.8	8
Siletz	D	9	60	April 30	29	Red	2.4	8
Applause	D	13	87	May 7	17	Red	2.5	7
Early Girl	I	14	93	May 4	53	Red	1.6	7
Sweet Seedless	I	8	53	April 30	27	Red	2.3	4
Giant Belgium	I	14	93	May 19	9	Red	3.5	4
Brandywine Pink <sup>2</sup>	I	15	100	May 24	2	Red/Pink	3.0	1
Mexico <sup>2</sup>	I	11	73	May 29	2	Red	3.0	1
<b>Small Fruited</b>								
Golden Sweet	I	15	100	April 30	419	Yellow	1.3	6
Sugar Snack	I	11	73	April 30	402	Red	1.0	5
Sugary	I	11	73	April 30	248	Red	1.3	5
Footnote <sup>1</sup> : D=Determinate; I=Indeterminate Footnote <sup>2</sup> : Heirloom Variety								