

**2013**

**Tomato Trial**

**Hale County,**

**Texas**

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Master Gardener volunteers took six different varieties of tomatoes as an observation project for the summer of 2013. Many people who garden in Hale County struggle with growing tomatoes and creating the ability to survive the plant.

In this report you will see that some of the Master Gardeners measured in pounds, numbers of tomatoes or both. You need to look at what did best.

Remember, these were done in back yards, growing like everyone else, except the Master Gardeners took notes on height, disease, and survivability. In this you will see a consistent pattern of what did well and what did not.

I want to thank the volunteers for their efforts for taking time out to do this project.

***Gary Cross, CEA-Ag/NR***

Hale County

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## 2013 Test Results of Tomato Trial – Plainview, Texas



### Mike Patrick, Texas Master Gardener

The trial was conducted using six different “determinate” varieties of tomatoes.

A raised bed concept was used with recycled “livestock molasses” tubs as the bed containers. Numerous holes were drilled in the bottom to allow for drainage and wood chips were placed at the bottom of each tub at a depth of about six inches.

The planting media used consisted of loose well-draining planting material and included a slow release fertilizer. As tomatoes are heavy feeders...I also mixed two large cups of “Essential Elements” to the soil in each container. The planting location allowed for full sunlight throughout the day.

After planting...cages (made of concrete reinforcement wire and about 42” tall) were placed around each plant and anchored to the planting tub using 4 guy wires running from the top of the cages to the tops of each tub (through holes drilled in the tub rims).

Each cage was wrapped with spun-bonded row cover material and clipped together using about six clothes pins per cage. The wrap was left in place until the plant leaves reached the wire cage. This not only protected the new plants from wind but also added protection from insects and diseases that might have otherwise harmed the new plants.

A layer of mulch (about 4”) was added to help in moisture retention.

The first tomatoes were picked on August 20<sup>th</sup>, and continued until October 18<sup>th</sup>. A freeze was forecast for our area on the 19<sup>th</sup>, so the remaining “105” tomatoes were picked green the afternoon of the 18<sup>th</sup>. In addition to being green, most of these had not reached their normal weight, which affected both the “total” weight as well as the average weight to some degree.

**Problems Encountered** – Although, I experienced no problems with diseases I did have problems with fruit worms that I failed to address early. I preferred not to apply any chemicals to the plants but if I were doing this again, I would address this problem differently.

RALLY seemed to be least affected by the fruit worms than the other varieties. TYCOON was prone to “splitting skins” although I’m certain they all had proper moisture.

### **Neoma Williams, Texas Master Gardener**

On May 5 of this year, I planted the six tomato plants given to the Master Gardener's class members. I planted these in pots and placed in my back yard. They all seemed to thrive, when all of a sudden four of them died.

The two that lived were the Celebrity and the Charger plants. I transplanted these two to a raised garden bed and they did very well. I had loads of tomatoes – they occasionally got a dab of dry fertilizer made by Soil Menders.

I watered them as needed. I got quite a few ripe tomatoes from these two plants before the freeze got them.

### **Rita Cronholm, Texas Master Gardener**

Six tomato plants were furnished by Gary Cross, County Extension Agent for Ag and Natural Resources for a tomato trial in Hale County, TX. The Rally, Tribute and Tycoon lost green fruits easily but the Tycoon and Tribute were good, late producers. There were early blight problems with the Celebrity and Bella Rosa. The Charger stunted, put on fruit but dropped the fruit before they became ripe.

### **Jarus Flowers, Texas Master Gardener**

One of the six tomato plants that I received from the Extension office had some problems from the beginning. The Tycoon died when planted. A cage was placed around each plant to prevent wind damage with sticks to stabilize the plants. Later I put rebar in the cages with the plants to hold them up but they fell over at the top. The Rally had bottom rot. I would say all except the Tycoon did very well.

### **Alex & Cindy Kingston, Texas Master Gardeners**

During a Master Gardener's class – the class was asked to partake in a Tomato Study. The focus of the study was to find what varieties of tomatoes that could be grown in West Texas. On May 12, 2013 the Master Gardeners were given 6 varieties of tomatoes, Rally, Tycoon, Celebrity, Charger, Bella Rosa and Tribute. The class was given starter plants which had been started from seed. Because there were extra plants we took 2 of each type (Plant A and B). The plants were somewhat weathered and dry – it seemed because of transporting from Lubbock to Plainview TX. The first thing we did with the plants was to replant them in larger pots and clean out brown, withered and dead leaves, along with a good watering. Because of a late frost in Plainview TX the tomato plants were stored under fluoresce lights for 3 weeks – then a week of hardening before transplanting.

The tomato plants were planted in a raised bed plot – the soil was a 1/3 peat moss, 1/3 pearl - lite (SP) and 1/3 pulverized cow manure. This mixture was developed in the book "Square Foot Gardening." The mixture also contained additional organic matter, leaves, grass clippings and coffee grounds. The beds were roto-tilled before the transplanting of the tomatoes. The tomato plants – all 12 were transplanted using the methods developed by Love Apple Farms ([loveapplefarms.com](http://loveapplefarms.com)). The Love Apple Farms method consists of placing – Bone Meal, crushed egg shells and aspirin within the transplant hole. Just before the tomato plant is placed within the hole – the plant is dipped in a solution of liquid fish fertilizer. The Bone Meal supplies nutrients and minerals to the young tomato plant, while the crushed egg shells provide an extra boost of calcium. According to the Love Apple Farm site on the internet the aspirin helps the plants immune system during the transplant process. The fish fertilizer or fish emulsion is used to aid in the growth and function of the roots. Note the fish emulsion is a deviation from the true Love Apple Farm method – they call for throwing a fish head in the hole – here in West Texas fish heads are not readily available. This method of transplanting worked well because all plants did not appear to experience "transplant shock."

The plants were watered early every morning by hand and inspected for any signs of stress, disease, or insects. The raised beds were very well drained and every day watering was a must. The plants were fertilized with a granular 10-10-10 fertilizer. Cages were used as the plants grew in size. Also leaves were inspected and any strange looking leaves were removed. All the tomato plants thrived during this period – the summer of 2013 was warm yet very few days of triple digit temperatures. The humidity was in the 30's and 40's throughout the growing season. The raised beds were located where the plants received 8 to 10 hours of direct sun a day. During, the late afternoons and early evening the tomato plants were shaded from the sun by the house, yet still experienced the warmth of the day. The tomato plants thrived during the growing stage.

The harvest in West Texas was somewhat late in 2013 – the entire crop of tomatoes did not seem to ripen until August 15<sup>th</sup>. Then the plants started producing and kept producing until the end of the season in early October. The harvest was where the first signs of any trouble showed up – the Rally's started going to fruit at about the same time the vines started to wither and fade. The Rally's were the least productive of the tomato varieties, only having one cycle of growth, whereas the other 5 varieties all had multiple growth cycles. All varieties of tomatoes produced a nice round shape with a deep red color – all and all a very pleasant looking tomato. Another problem with the Rally tomato was – it was a very tasteless tomato – the flavor was not as good as a store bought tomato (in our opinion). All the other tomatoes had a very hearty and vibrant flavor with the Tribute and Bella Rosa having surprising flavor, with the Celebrity being its normal – always a flavor you can count on. The Tycoon and the Charger were far superior to the Rally, yet did not measure up to the Tribute or Bella Rosa. The tasting was not judged in any formal manner – just in the course of using the tomatoes in day to day meals and as slices being served with a meal, as a side.

In ranking this six (6) – we found the order to be: 1<sup>st</sup>) Tribute; 2<sup>nd</sup>) Bella Rosa; 3<sup>rd</sup>) Celebrity; 4<sup>th</sup>) Tycoon; 5<sup>th</sup>) Charger; 6<sup>th</sup>) Rally

The different between the 1<sup>st</sup> place Tribute and the 5<sup>th</sup> place Chargers was very minimal and just a matter of taste and ease of growing the plant, whereas the Rally was a clear disappointment.

From the very start of this study, every aspect, from the soil to the transplanting was researched and the best gardening methods were used to grow these tomatoes. The soil used was taken from “The Square Foot Gardening” and was determined to be the easiest soil to create. Raised beds were used to help control weeds and insects along with ease of gardening. The Love Apple Farm method was used to help alleviate any problems with transplanting of the plants. This study was fun and a wonderful learning experience.

Many sources noted the use of cow manure in the growth of tomato plants, stating the use of cow manure is essential.



This is a picture taken toward the end of the growing season. Hard to see but there are green tomatoes within the vines. The picture was taken after the day's harvest of tomatoes that had turned red. The picture was taken towards the rear of the raised bed. The Tributes and Bella Rosa plants are shown.



The tomato plants when they were first planted in the Raised Beds. The plants on the lower side of the picture are the “A” plants, while the plants on the backside of the picture are the “B” plants. The beds run East and West. The “A” plants took off faster than the “B” plants, yet the “B” plants were better producers by the end of the season.



This is a picture of our harvest – a typical day in late August. The tomatoes were very productive and as you can see they had nice color and shape. The tomatoes were very flavorful and a nice treat – we used them in salads, sandwiches and just sliced up as a side dish with our dinner. Some have been treated and frozen for use in the winter months.

### Tomato Trial Results by Variety - 2013

Mike Patrick	Tycoon	Bella Rosa	Charger	Celebrity	Rally	Tribute
Height	39"	44"	38"	38"	36"	36"
# Tomatoes	48	47	68	77	69	96
Total Lbs	12.4	9	9.7	15.8	14.1	12.1
Avg. Wt	4.1 oz.	3.1 oz.	2.3 oz.	3.3 oz.	3.3 oz.	2.0 oz.

Rita Cronholm	Tycoon	Bella	Charger	Celebrity	Rally	Tribute
Height	40	30	30	34	36	36
# Tomatoes						
Total Lbs	9.1	4.8	1.1	9.7	9.1	6.9
Avg. Wt						

Jarus Flowers	Tycoon	Bella	Charger	Celebrity	Rally	Tribute
Height	Died	48	36	54	42	54
# Tomatoes		40	25	50	30	50
Total Lbs						
Avg. Wt						

Mary Ann James	Tycoon	Bella	Charger	Celebrity	Rally	Tribute
Height	46	40	40	5	45	44
# Tomatoes						
Total Lbs	25	28.56	0	0	8.87	17.25
Avg. Wt	5 oz		6-10 oz.			

## Tomato Trial Results by Variety - 2013

Neoma Williams	Tycoon	Bella Rosa	Charger	Celebrity	Rally	Tribute
Height						
# Tomatoes			25	25		
Total Lbs						
Avg. Wt						

### Alex & Cindy Kingston

	Number Count	Total Weight	Height(5-12)	Height (6-14)	Height - (7-15)	Height (8-20)
A - Rally	9	0 lb 13.14 oz	6 inches	10 inches	2 ft 2 inches	2 ft 5 1/2 inch
B - Rally	17	1 lb 15.94 oz	7 1/4 inches	1ft 1/2 inch	2ft 6 inches	2 ft 9 inch
A - Tycoon	23	2 lbs 4.62 oz	6 1/2 inches	10 1/2 inches	2 ft 8 1/2 inches	3 ft 8 inch
B - Tycoon	48	6 lbs 10.08 oz	8 1/4 inches	1ft 1/2 inch	2 ft 6 1/2 inch	4 ft 3 inches
A - Celebrity	26	2 lbs 033 oz	6 inches	8 inches	2 ft 8 inches	3 ft 6 inch
B - Celebrity	39	5 lbs 8.03 oz	5 1/4 inches	1 ft 1 inch	3 ft 1 1/2 inches	4 ft 7 1/2 inch
A - Charger	20	1 lb 15.26 oz	6 1/2 inches	9 inches	2 ft 5 1/2 inches	3 ft 9 inches
B - Charger	53	6 lbs 8.81 oz	8 1/4 inches	1 ft 2 1/2 inch	3 ft 9 inches	4 ft 10 inch
A - Bella Rosa	15	1 lb 12.28 oz	5 1/2 inches	9 inches	2ft 10 inches	3 ft 11 1/4 in
B - Bella Rosa	49	6 lbs 3.69 oz	6 inches	11 inches	3 ft 3 inches	4 ft 9 inches
A - Tribute	28	4 lbs 3.04 oz	5 1/2 inches	9 1/2 inches	2 ft 3 inches	3 ft 6 inches
B - Tribute	27	3 lbs 14.05 oz	7 1/4 inches	9 inches	3 6 1/2 inch	4ft 1 inches



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