

Container Gardening Tomato Variety Evaluation

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INTRODUCTION:

The use of containers, raised beds and other methods that can be used where space is limited is an increasing gardening trend. People living in condos, apartments, homes with small yards and the aging populations are the major segments of this increasing audience. Some of the reasons for this are- Therapeutic benefits of providing stress relief, use of innovative/experimental practices, the benefits of freshness of vegetables, herbs and spices, small fruits and others.

It was decided to use tomato varieties with this project because of their popularity, diversity, and type of tomatoes, and adaptability to container production. Objectives of this study include,

1. evaluate growth and plant development
2. prevalence of disease, insects and physiological disorders
3. growth form
4. fruit production data
5. fruit maturity, and quality
6. overall performance ratings

PROCEDURE:

Each variety was planted in two containers. Containers used in this study were whiskey barrels 27" in diameter and 17" deep. Bottoms of the barrels had drain holes to help provide drainage. The soil mixture was the same in all barrels- 50% topsoil, and 50% compost material obtained from the Dickinson Landfill. Foliar applications of Miracle Gro were made throughout the season. Supplement water was applied through a manual controlled drip irrigation system. The study was evaluated periodically throughout the growing season. The tomatoes were planted on May 27, 2006 and the first ripe fruit was harvested on August 10, 2006. A hard frost on Sept. 18th and 19th ended the 2006 growing season.

Variety descriptions of tomatoes included in the study-

BETTER BOY HYBRID- Better boy is a trusted favorite with good yield and succulent-juicy-meaty fruity. Resistant to Verticillium wilt, Fusarium wilt

and nematodes. Maturity seventy days from transplanting. Indeterminate growth (Parks Gardens)

JOLLY HYBRID- High yielding cherry tomato. Tear drop shaped fruit with meaty-sweet flavor. Produces fruit cluster of nine to twelve on vigorous vines. Maturity seventy-three days after transplanting. Indeterminate growth (Parks Gardens)

SUGARY HYBRID- Tolerates tuff climate conditions and produces over a three to four week period. Pointed oval shape one half ounce fruit, maturity eighty-five days after transplanting. Semi-determinate growth (Gurney's)

PERSIMMON HEIRLOOM- This variety dates back to the mid 1800's. Yellow fruit about the size of Beef Steak, large irregular fruit shape, maturity eighty days. Indeterminate growth. (Territorial Seed Co.)

HEALTH KICK HYBRID- Contains 50% more lycopene- a cancer fighting antioxidant. Plum shaped 4 ounce fruit. Fruit is meaty similar to Roma tomatoes. Maturity seventy-five days after transplanting. Determinate growth (Parks Gardens)

JULIET- High yielding cherry type tomato, red one ounce fruit is oblong shaped that form cluster. Resistant to fruit splitting. Maturity sixty days after transplanting. Indeterminate growth. (Parks Gardens)

BIG BEEF- High yielding variety that produces extra large, extra meaty and extra tasty fruit good disease resistance. Up-right growth with limited branch lodging, maturity seventy-three days after transplanting. Indeterminate growth (Parks Gardens)

RESULTS AND DISCUSSION

As previously discussed tomatoes were planted in whiskey barrel containers. Some variation of plant development occurred. This can be attributed to: reduced drainage, and over watering caused by variations in the drip irrigation system. Symptoms appeared as stunted plants, yellow leaves and in general an unthrifty appearance. This occurred on

one plant of the following varieties: Better Boy, Sugary, and Big Beef.

Varieties were ranked on several different characteristics as follows:

Desirable plant Growth Form – Compact to spreading (1) Celebrity (2) Big Beef (3) Better Boy (4) Jolly (5) Health Kick (6) Juliet (7) Sugary and (8) Persimmon.

Physiological Disorder – Blossom End-rot (Ber) occurred in the early tomato of all varieties except (1) Jolly (2) Sugary and (3) Persimmon. This did not result in serious yield losses.

Diseases Present – Primarily leaf spot such as, seporia, early blight, late blight, and fusarium wilt. Symptoms were on, (1) Better Boy (2) Health Kick (3) Juliet and (4) Celebrity.

Fruit Maturity – The first ripe fruit was harvested on 8-10-06 on the following varieties: Better Boy, Jolly, Sugary, Health Kick, and Juliet. Harvested 8-18-06 Celebrity, 8-29-06 Persimmon and Big Beef.

Total Fruit Yield – (1) Big Beef (2) Persimmon (3) Juliet (4) Celebrity (5) Better Boy (6) Health Kick (7) Sugary and (8) Jolly.

Fruit Quality – Based on a group test with DREC Staff members. Characteristics included, **Acidity** (1) Jolly (2) Big Beef & Juliet (4) Celebrity and Sugary, (6) Health Kick, **Sweetness** (1) Juliet and Jolly (3) Sugary and Big Beef (5) Celebrity (6) Health Kick, **Juiciness** (1) Big Beef and Juliet (3) Jolly (4) Celebrity (5) Jolly (6) Health Kick, **Skin Tenderness** (1) Juliet (2) Sugary and Big Beef (4) Celebrity (5) Jolly (6) Health Kick, and **Overall Rating** (1) Sugary (2) Juliet (3) Big Beef (4) Celebrity (5) Jolly (6) Health Kick.

Storage

Green fruit was stored in a cool basement office to ripen. Two methods were used to determine the effects of the ripening process. One group was covered with newspaper and the other fruit was not covered. Each variety was included in both groups to compare variety differences. This evaluation indicated no significant advantages for covered vs. uncovered to tomato ripening times for all varieties.

TABLE # 1 SUMMARY OF RESULTS

VARIETY	PLANT SIZE	GROWTH FORM	DISEASE	TOTAL YIELD	RIPE DATE	COMMENTS
Better Boy	35' x38.5"	Up-right	None	11# 3oz.	8-10-06	yellow lower leaves, leaf roll, fruit cracking, medium size
Jolly	43.5" x 42"	Up-right	Leaf Wilt	2# 12 oz.	8-10-06	branch lodging, some leaf wilt, variable fruit size, tough fruit skin
Sugary	37" x 37"	Spreading	None	5# 8 oz.	8-10-06	small leaves, yellow irregular fruit shape, large, juice, & meaty fruit
Persimmon	47" x 39"	Spreading	None	13# 4 oz.	8-28-06	tall plants, yellow irregular fruit shape, large, juicy, & meaty fruit
Health Kick	29" x 32"	Compact	Leaf Spot	10# 13oz.	8-10-06	large leaves, minor leaf spot, (Ber), Roma like fruit, difficult to harvest
Celebrity	31" x 37"	Compact	Early Blight	12# 3oz.	8-18-06	branch lodging, leaf spot, fruit form clusters, sm-med cylinder fruit
Juliet	36.5" x 39.5"	Spreading	Leaf Spot	13# 2 oz.	8-10-06	leaf wilt, med- lg fruit, good growth form, good production
Big Beef	42.5" x 43.5"	Up-right	None	15# 2 oz.	8-28-06	Large plant, large fruit, good yield, highly recommended

CONCLUSIONS:

This study documented that tomatoes are very well adapted to container production. Poor drainage and over-watering on a small number of plants reduced production and normal plant development. Varieties with a compact or upright growth are best suited for container production-take less space, and are easier to harvest. Successful experiences should result in increased use of containers for growing vegetables.