

FRESNO COUNTY GRAPE TOMATO VARIETY TRIAL

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Abstract:

Thirty-one “grape tomato” varieties were grown at the UC Kearney Ag Center in Parlier, California. Seeds were started April 28, 2003 in trays and transplanted in the field on June 6. The experiment design was a randomized complete block with three replications, and three plants of each variety per replication. Fruit harvest started September 4 and ended October 21. Six varieties (Juliet, Jolly, Mobay Grape, LSL 124, 2225, and 2285) were considered too large to be classified “grape”. Some of the best selections based on Brix, yield, fruit size, and taste were Jellybean, Santa, 81002860, Ruby, 297, Tami G, and Red Grape.

Keywords: Grape Tomato, Specialty, Santa

Materials and Methods:

Thirty-one different varieties of grape tomatoes were planted in trays on April 28, 2003. Some varieties were replanted seven days later due to low germination. Seedlings were transplanted into raised beds covered with black plastic on June 6 at a plant spacing of 24”, three plants per treatment. Bed spacing was 80”. Soil type was a Hanford fine sandy loam. A pre-plant fertilizer (15-15-15) was broadcast at 500 lbs. per acre, and UN32 was applied through the drip at five gallons per acre at monthly intervals. Tomato stakes and trellises were set up as the plants began to grow. One application each of Admire[®] and Success[®] were made during the growing season. Two varieties were added to the trial six weeks later (July 16) - Tami G and Brixmore.

Results:

Plants were harvested once a week beginning on September 4 and ending on October 21 (eight harvests). Some plants were infected with Curly Top Virus and were pulled. All pink and red fruits were harvested from three plants in each treatment and a total weight recorded. Ten red fruits were taken for lab analysis of weight and Brix (total soluble solids sugar). Several taste evaluations were also made. LSL 124 (a cherry tomato) was included for comparison. (See Table 1)

Total Yield (Lbs.):

As seen in Table 1, mean yields ranged from a high of 45.0 lbs. (LSL 124) to a low of 1.6 lbs. (304). Total yields though are misleading because some varieties were too large to be considered a true “grape tomato”. The Santa was considered to be one of the first true grape tomatoes and was used as a standard for comparison. Yields for Santa were in the mid range (15 lbs. per plot). Only those varieties with a mean minimum yield of 10 lbs. and a fruit size approximately 4-12 grams/fruit will be considered “grape” tomatoes for purposes of this report. Of course, Brix and taste evaluations are another consideration.

For unknown reasons, Tami G (first planting), 304, Jolly, and Sunshine had only one replication (three plants) survive. Varieties 297 and Tami G (late planting) started producing later than most others.

Fruit Size:

Laboratory weights (grams) for ten fruits are shown in Table 1, column 1, for individual fruits. Varieties with fruit weights in the range of 4-12 grams were considered grape types. Larger than 12 grams are close to Roma size, and less than four grams are mini. Good grape tomato possibilities based on fruit size are Ruby, Goldilocks, 81002860, Tami-G, 1045, 81003560, Santa, Cabernet, 81002862, Sweet Olive, 1025, 304, Sunshine, Morning Light, 81002876, Honeybunch, Merlot, Chiquita, and Red Grape.

Brix (Table 1, Column 3):

Most soluble solids are generally sugars, so Brix is a test for sweetness. Ruby had the highest (9.7) mean Brix readings over the two-month harvest season (7.8-11.4). The mean Brix for Santa was 8.4 (6.5-10.1). Other varieties with a high Brix were Red Grape (Johnnys Seeds, 9.0), Lucia (8.8), 297 (8.6), Sweetie Pie and Jellybean (8.4), 8102860 (8.3), and Sweetie Pie and Jolly (8.4).

Taste Evaluations (Tables 2, 3 and 4):

Taste comparisons were made on three different dates (9/11, 10/21, and 10/22) by two individuals. The table below shows the results of each individual tasting. This is the subjective part of the trial and will vary from person to person. Those varieties with a higher Brix level tended to rank higher in the taste evaluations, though not always. Certainly other factors are involved in tastes. Those receiving higher marks overall were Jellybean, Santa, 81002860, Ruby, 297, Tami G, and Red Grape.

Table 1

**GRAPE TOMATO VARIETY TRIAL - FRESNO, CA
DATA COLLECTION CHART - FRUIT SIZE, YIELD, BRIX**

	<u>Weight Grams</u>	<u>Yield (Lbs.)/Plot *</u>				<u>Brix Sugar</u>
	<u>Individual Fruit</u>	<u>8 Weeks</u>				
2285	39	LSL124	45.6	A	Ruby	9.7
2225	38	Juliet	38.6	A B	Red Grape	9.0
Jolly	21	81002862	32.5	A B C	Lucia	8.8
Juliet	15	Honeybunch	30.5	A B C D	297	8.6
LSL124	15	Sunshine	30.5	A B C D	Jellybean	8.4
Mobay Grape	13	Mobay Grape	28.7	A B C D E	Santa	8.4
Chiquita	12	81002860	24.8	B C D E F	Red Grape	8.4
Merlot	11	81002876	23.4	B C D E F	Sweetie Pie	8.4
Honeybunch	10	Cabernet	21.9	B C D E F G	Jolly	8.4
304	10	1025	20.6	C D E F G H	81002860	8.3
81002876	8	Ruby	19.8	C D E F G H	81003560	8.2
Morning Light	8	Goldilocks	19.8	C D E F G H	81002862	8.1
Sunshine	8	81003560	18.8	C D E F G H I	Cabernet	8.0
81003560	7	Santa	15.2	C D E F G H I	Tami G	8.0
Cabernet	7	Merlot	14.2	D E F G H I	Sunshine	7.9
Goldilocks	6 Preferred	Sweetie Pie	12.3	E F G H I	Tami G (Late)	7.7
1025	6 Size	1045	12.1	E F G H I	Morning Light	7.6
Sweet Olive	6 4-12	2225	11.9	E F G H I	Sweet Olive	7.6
81002862	6 Grams	Sweet Olive	11.2	F G H I	Chiquita	7.5
Santa	5	Red Grape	10.2	F G H I	1025	7.4
Tami G	5	Morning Light	10.0	F G H I	Goldilocks	7.3
1045	4	Lucia	9.7	F G H I	Honeybunch	7.2
Tami G (Late)	4	Chiquita	9.3	F G H I	Mobay Grape	7.1
81002860	4	2285	5.2	G H I	1045	7.1
Ruby	4	Jellybean	4.2	H I	Merlot	6.9
Red Grape (Corona)	4	Red Grape (Johnnys)	3.6	H I	Juliet	6.8
Lucia	4	Tami G	3.2	H I	LSL124	6.6
Jellybean	3	Tami G (Late)	2.3	I	81002876	6.6
Red Grape (Johnnys)	3	Jolly	1.9	I	304	6.4
297	3	297	1.7	I	2225	5.8
Sweetie Pie	3	304 (Late)	1.7	I	2285	4.9

*Mean Separation LSD = ≤0.05

*Means in the column followed by the same letter did not differ significantly

Table 2 Comparative Tasting September 11	
5 = Best	1= Worst
Santa	4.5
Ruby	4.5
Jellybean	4.0
297	4.0
Red Grape (Corona)	3.8
Lucia	3.5
Cabernet	3.0
81002860	3.0
81003560	3.0
Red Grape (Johnnys)	3.0
Tami G	3.0
Sweet Olive	2.5
1025	2.0
1045	2.0
Chiquita	2.0
Mobay Grape	2.0
Honey Bunch	2.0

Table 3 Comparative Tasting October 21	
5 = Best	1= Worst
Santa	4.8
Red Grape (Johnnys)	4.8
Red Grape (Corona)	4.5
81002860	4.0
Tami G	4.0
Jellybean	4.3
297	3.5
Chiquita	3.5
Ruby	3.5
Sunshine	3.5
1045	3.0
Sweet Olive	3.0
Mobay Grape	3.0
Lucia	3.0
304	3.0
Juliet	3.0
Merlot	2.0
1025	2.0
81003560	2.0
Sweetie Pie	2.0
Honey Bunch	2.0
Goldilocks	2.0
LSL124	2.0
Tami G (Late)	1.5
Yellow Grape	1.5
81002876	1.5
Cabernet	1.0

Table 4 Comparative Tasting October 22	
Taster 1 Rank	Taster 2 Rank
Jellybean	81002860
Santa	Jellybean
Red Grape (Johnnys)	Tami G
Tami G	Santa
Red Grape (Corona)	Red Grape (Corona)
81002860	Red Grape (Johnny)
304	304

Conclusions:

Based on yield, fruit size, Brix sugar, and taste evaluations, the following varieties would be worth further testing as “Good” grape tomato variety selections. (Not in any order)

Santa	Cabernet
Ruby	Tami G
Red Grape (both sources)	Sunshine (yellow)
Lucia	Morning Light
Sweet Olive	2860
Chiquita	81003560
1025	81002862
Honeybunch	1045
Merlot	2876
Jellybean (maybe)	

Some of the best in this trial were Jellybean, Santa, 81002860, Ruby, 297 Tami G, and Red Grape.

The following ten varieties were either too large, not sweet, and/or low yielding and did not rank high enough in this trial to be recommended.

2285 - Too Large
2225 - Too Large
304 - Low Yielding
LSL 124 - A Cherry Tomato
Juliet - Too Large
Mobay Grape - Too Large
Jolly - Too Large
Sweetie Pie - Too Small, Splitting
297 - Low Yielding, Too Small