

LSU AgCenter 2018 Large Fruit Determinate Type Tomato Variety Trial Results

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Introduction

Tomatoes continue to be one of the most popular spring produced vegetable crops. Commercial producers and hobby gardeners alike seek to find the best producing and best tasting tomatoes year after year. There are nearly 2,000 varieties of tomatoes, not all of which are the best choices for Louisiana production. This report provides the results from the large red fruit determinate type tomatoes planted in the spring of 2018 at the LSU Botanic Gardens in Baton Rouge, LA.

Materials and Methods

In the spring of 2018, eight varieties of large fruit, determinate type tomatoes were trialed. Each tomato variety was planted in blocks of 10 plants. 3 blocks per variety were planted at the LSU AgCenter Botanical Gardens in Baton Rouge, LA. Tomato seeds were planted into 50 count cell trays on January 10, 2018. Trays were placed on heat mats set at 85°F for 48 hours, then the mats were turned off and removed. Tomatoes were fertilized weekly with Peter's 20-20-20 at a rate of 200ppm N, after the first true leaf had developed. Trays were removed from the greenhouse one week prior to transplant to harden off. Tomatoes were transplanted on March 7, 2018. Tomatoes were planted on hipped up rows covered with silver plastic mulch with drip irrigation installed under the mulch. Pre plant fertilizer was incorporated at 600lbs 13-13-13/acre. Tomatoes were spaced on 18 inch centers single drilled. Fertigation began at first flower set and continued weekly through harvest alternating calcium nitrate and potassium nitrate.

The 8 varieties were evaluated for fruit quality, fruit color, yield and flavor. A total of 5 harvests occurred on May 29, 2018 and June (4, 8, 14, and 21), 2018. The data presented in this report reflects yields only during this time period. Total harvest for each variety is likely higher as producers and hobby gardeners would continue to harvest fruit until the plants become disease/insect ridden or until plant senescence. Thanks is expressed Sakata Seed for the donation of 'XTM 2261' and 'Volante' seed.

Results

Table 1. Fruit Harvested Between May 29 and June 21, 2018 on 30 Plants of Each Variety.

Variety	Seed Source	Marketable No. Fruit Produced	Marketable Weight (lbs.)	Unmarketable No. Fruit Produced	Unmarketable Weight (lbs.)	Total No. Fruit Produced	Total Fruit Weight (lbs.)	Avg. Individual Fruit Weight (oz.)
Bella Rosa*	Sakata	237	111	401	184	638	295	7.4
BHN 1021	Johnny's	374	169	326	132	700	301	6.9
Mountain Merit	Johnny's	247	109	289	119	536	228	6.9
Sebring	Siegers	232	119	231	107	463	225	7.8
Skyway	Siegers	200	106	277	139	477	245	8.2
Summerpick	Siegers	289	151	235	116	524	267	8.2
Volante	Sakata	316	167	201	105	517	272	8.5
XTM 2261	Sakata	340	178	253	109	593	288	7.8

Bella Rosa was our control variety.

No. = number

Marketable = USDA Number 1 Fruit

Unmarketable = All other fruit. May have been blemished/ distorted or had insect or disease damage.

The numbers above reflect the total amount of fruit harvested off of 30 plants of each variety only between May 29 and June 21, 2018. June 21 was an arbitrary date at which the study was completed.

Conclusions

The variety 'BHN 1021' produced the greatest total number of fruit (700) followed by 'Bella Rosa' (638) and then 'XTM 2261' (593). However, this particular season, none of the varieties had high percentage of USDA #1 fruit. When fruit was graded we were extremely tough on designating quality fruit. Any disease, insect damage, environmental damage or deformities are not considered marketable. Out of the 8 varieties, 'Volante' produced the most marketable fruit (61%) followed by 'XTM 2261' (57%), 'Summerpick' (55%), 'BHN 1021' (53%), 'Sebring' (50%), 'Mountain Merit' (46%), 'Skyway' (41%) and 'Bella Rosa' (37%). The 2018 spring season was particularly wet with many producers complaining of disease and deformities in the field. All varieties averaged close to a half pound per fruit. The top three varieties in terms of average fruit weight were 'Volante' (8.5oz.), 'Summerpick' (8.2 oz.) and 'Skyway' (8.2oz.). 'XTM 2261' and 'Sebring' were a close follow in average fruit weight at 7.8 oz. each. The variety that was rated as having the best flavor was 'Mountain Merit'.

We are particularly excited about 'Volante', 'XTM 2261', 'Summerpick', 'Skyway' and 'BHN 1021' as they are all tomato spotted wilt virus resistant (TSWV). 'Bella Rosa' is as well, but TSWV resistant tomatoes that have fared well in Louisiana trials seem to be going off market.

Any of the tomatoes in this trial would perform well under normal spring season conditions in Louisiana. We would recommend all varieties for commercial and hobby production. The total number of marketable fruit and marketable weight would increase tremendously if grown during a drier spring season than the one experienced in 2018.