

Tomato Variety Trial – 2006

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In the spring and summer of 2006 five cultivars of fresh market tomatoes unknown to Southeast Virginia, Dafel, Pink Beauty, Valley Girl, JTO-99197, and Moskvich (Table 1), were evaluated for total yield and marketability (Table 2). Significant differences were noted among the cultivars in both overall yield and percentage of marketable fruit.

Seeds were purchased from Johnny's Seed Co. and transplants produced in four-inch pots filled with a commercial potting mix formulated for flowers and vegetables, in the greenhouse at the Tidewater Agricultural Research and Extension Center (TAREC), between March 15 and May 9. The transplants were then set in the field into eight-inch high beds spaced six feet apart. Spacing within rows was 24 inches. The tomatoes were produced under a plasticulture system with drip irrigation. The experimental design was a randomized complete block, with four replications of six plants. Field plots were located at the TAREC's Hare Road Research Farm in Suffolk on Nansemond and Eunola loamy soils.

The plots were maintained following the *Commercial Vegetable Production Guide* (see References). The harvest of vine-ripe tomatoes began on July 5 and continued through July 24. Yield data were taken at each harvest date and reported as combined (Table 2).

The 2006 tomato-growing season was challenging due to the remnants of tropical storms bringing excess rainfall early in the season, followed by a long hot, dry spell. Early-blight infection spread in early June, likely due to the wet weather conditions. In addition to the early blight, symptoms of the tomato spotted wilt virus (TSWV) occurred throughout the field. Low yields and percentage of marketable fruit are attributed to the disease problems.

There were significant differences among the varieties (Table 2). Dafel produced smaller fruits (an average of

4.11 oz), giving significantly lower percentage of marketable yield (2.58 percent) compared to Valley Girl (14.22 percent) and JTO-99197 (15.33 percent). Its overall yield was, however, not significantly different from the other varieties, except Pink Beauty. Moreover, approximately 30 percent of the Dafel tomatoes developed green shoulder, making them unmarketable (data not shown).

Pink Beauty yielded 1.62 pounds per plant, with average fruit size of 7.28 oz. JTO-99197 produced the highest percentage of marketable fruit (15.33 percent). This could be attributed to its resistance to early blight.

Valley Girl gave the highest overall yield and had a significantly higher percentage of marketable fruit compared to Dafel, Pink Beauty, and Moskvich. Although Valley Girl is not reported to be early blight resistant, it was less affected by this disease than Dafel, Pink Beauty, or Moskvich.

Early blight is caused by the fungus *Alternaria solani* (Maryland Cooperative Extension, 2006). Warm (>80°F), moist conditions promote development of the disease. It can affect many developmental stages of the plant, causing damping off, collar rot, stem cankers, leaf blight, and fruit rot. Recommendations for early-blight prevention and management can be found in the *Commercial Vegetable Production Guide*.

TSWV is a serious disease that is transmitted to susceptible varieties by thrips, tiny insects that feed inside developing flower buds (<http://www.ipmofalaska.com/files/thrips.html>). Once a plant has been infected by TSWV, there is no known cure; therefore, it is important to try and prevent the disease. This can be accomplished by choosing resistant varieties or following the guidelines for thrips management outlined in the recommendations guide.

For information on pesticide recommendations and/or application, please contact the local Extension office.

Table 1. Tomato varieties and trait characteristics.

Variety	Maturity (days)	Resistance	Average Fruit Size (oz)
Dafel	68	F (1)	6-7
Pink Beauty	74	---	6-8
Valley Girl	65	F (1&2), V	7-8
JTO-99197	78	EB, V, F(1)	8-10
Moskvich	60	---	4-6

F=Fusarium (race), V= Verticillium, EB=Early blight

Table 2. Yield data from the tomato variety trial¹ – Hare Road Research Farm, Suffolk, Va., 2006.

Variety	Yield (lb/plant) ^{2,3}	Percent Marketable	Average Fruit Size (oz)
Dafel	2.99 (a)	2.58 (b)	4.11
Pink Beauty	1.62 (b)	5.41 (b)	7.28
Valley Girl	3.29 (a)	14.22 (a)	6.23
JTO-99197	2.39 (ab)	15.33 (a)	6.98
Moskvich	2.04 (ab)	4.86 (b)	5.45

¹ 24 total plants.

² Yields with the same letter are not significantly different. LSD=0.05 Yield data was taken over a time span of 2.5 weeks.

³ Total season yields can be expected to be higher.

References

Kuhar, T.P., Phillips, S.B., Straw, R.A., Waldenmaier, C., and Wilson, H.P. 2006. *Commercial Vegetable Production Guide*, Virginia Cooperative Extension publication 456-420. Virginia Cooperative Extension.

University of Maryland Cooperative Extension. 2006. Early Blight of Tomato. Pest Management Office, <http://pmo.umext.maine.edu/factsht/Earlytom.htm>.