

## FRESH MARKET PLUM TOMATO GERMPLASM EVALUATION

Elaine Grassbaugh<sup>1</sup>, Mark Bennett<sup>1</sup>, Matt Hofelich<sup>2</sup>, Thom Harker<sup>3</sup> and Brad Bergefurd<sup>3</sup>

<sup>1</sup>The Ohio State University, 2021 Coffey Rd., Columbus, OH 43210

<sup>2</sup>OARDC Vegetable Crops Branch, 1165 CR 43, Fremont, OH 43420

<sup>3</sup>OSU South Centers, 1864 Shyville Rd., Piketon, OH 45661

**Introduction:** Most fresh market tomato trials evaluate the traditional red, round slicing tomatoes. New cultivars as well as older varieties can be grown for the fresh market while providing a variety of colors. Plum tomatoes, once thought to be for processing only, are becoming more popular with the fresh market sales because of their long shelf life, meaty flesh, excellent flavor and good yield potential. Ten varieties of red, orange and yellow plum cultivars were grown and assessed for fruit quality, average fruit size, and final marketable yield. Germplasm from Ohio (Dr. David Francis) and several commercially available cultivars were included in this trial. Replicated plots were established at the Vegetable Crops Branch (VCB), Fremont, Ohio and at the OSU Enterprise Center in Hillsboro, Ohio. Plots were established in three replications on raised beds using black plastic mulch and trickle irrigation. Single rep observation plots were also established at a grower site in Hamilton, OH. Plant selections for each location were based on plant availability at time of planting.

**Objectives(s):** To test varieties of plum tomatoes grown on raised beds with black plastic mulch and trickle irrigation for fresh market sales.

### **Materials and Methods:**

Fremont: plants were seeded in the greenhouse on April 4 & 11, 2003 into 200-cell plug trays and grown in the VCB greenhouse in Fremont, Ohio. Transplants were established in the field on May 23, 2003. Raised beds with black plastic mulch and trickle irrigation were spaced 5 feet apart with plants spaced 18 inches apart in the row. Each cultivar was replicated three times. Plants were not staked and tied. Drip irrigation was applied 6 times during the growing season. Fruit was harvested twice, on August 20 and September 5.

Hillsboro: plants were seeded into 98-cell plug trays on May 5, 2003. Raised beds, trickle irrigation and black plastic mulch were used. Plants were transplanted to the field on June 16, 2003. Each plot was replicated three times using the same plant row and between plant spacing as mentioned above. Plots were harvested once on October 3, 2003.

Hamilton: plants seeded in Hillsboro were used at this location. Standard practices of raised beds, trickle irrigation and black plastic mulch were used. Plants were established in the field in a single replication observation plot on June 18, 2003. Plots were harvested three times, on September 10, 17, and 24, 2003.

**Results:**

Fremont: Marketable yields ranged from 13.7 to 33.0 T/A (Table 1). The highest yields were obtained with 'Health Kick' and 'Sunoma'. Average marketable fruit sizes ranged from 0.11 to 0.34 lbs. Culled fruit were due mainly to ground rot and sunscald. No major disease problems were observed in any of the varieties.

Hillsboro: Marketable yields ranged from 12.0 T/A to 18.8 T/A (Table 2). Although no statistical differences (0.05 level) were observed in yield, 'Plum Lemon', 'Giant Valentine', 'Sunoma', 'ACR 8625' and 'Italian Gold' had the largest biological yields. Average marketable yield and fruit size were slightly higher in Fremont, where fruit was harvested earlier and more often. Heavy rains in Hillsboro immediately after planting may have delayed fruit set and fruit maturity.

Hamilton: Marketable yields ranged from 15.6 T/A to 28.1 T/A (Table 3). 'Health Kick', 'Sunoma' and 'BHN 411' were the highest yielding cultivars. Average fruit size ranged from 0.15 to 0.33 lbs.

As fresh market plum tomatoes, varying in size and color, become more popular in markets and at roadside stands, cultivar testing provides valuable information on yield potential and potential disease problems. Yield results from all locations and photos from cultivars grown at the Fremont location will be available this winter on the OSU VegNet website at [www.vegnet.osu.edu](http://www.vegnet.osu.edu)

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