

## Tomato Variety Trial

### Spring 2003 Tomato Variety Trial, Bixby, Oklahoma

Brian Kahn, Lynda Wells, Bruce Bostian

**Introduction and Objectives:** Commercial tomato production in Oklahoma is almost exclusively for fresh market. Oklahoma tomato crops are usually established with transplants in early spring for summer production. One of the most critical decisions a grower makes is variety selection. Yearly trials help update recommendations for Oklahoma producers. Production should be based on more than one variety, as performance may be inconsistent from year to year. Objectives include the evaluation of commercially available cultivars for yield, fruit size, earliness and overall quality.

**Materials & Methods:** This year's trial included 10 determinate varieties. Plants were started in the greenhouse on March 4, 2003. Peat pots 2¼ inches in diameter were used with a peat-based plug and seedling mix. Transplants were watered and fertilized with 15-30-15 at a rate of 200 ppm three times while in the greenhouse. One week prior to transplanting, plants were removed from the greenhouse to be 'hardened off'. On April 4, 13N-13P-13K fertilizer was applied at a rate of 350 lbs./acre on the field area. Plants were transplanted on April 17 at the Bixby research station. There were 6 plants per plot arranged in a randomized block design with 4 replications. Shortly after transplanting 2 replications were caged and 2 were supported by stake and weave. Plots were 5.9' x 11.8' with plants spaced at 24". Plants received 1 cup of a starter solution consisting of 12 lbs. 15-30-15 fertilizer plus 1 pint diazinon per 200 gallons water. Supplemental water in the field was applied with trickle irrigation. All plots were given additional nitrogen fertilizer on May 27 at a rate of 40 lbs./acre. Fungicides and insecticides were applied as needed.

**Results & Discussion:** There are no yield data for 2003, as the trial was devastated by beet curly top virus. The extent of plant loss is reflected in the table below. Note that neither variety nor cultural system had any effect on number of healthy plants per plot. A few resistant varieties are known, but they are primarily processing types adapted to the western U.S.

Growers around the state also reported varying degrees of loss from this disease in 2003. This is not a new disease for Oklahoma, but we have not seen this level of severity on tomatoes for at least 20 years.

Variety	Source	Avg. no. of healthy plants per plot on June 10 (out of 6 possible)	Avg. no. of healthy plants per plot on July 14 (out of 6 possible)
Captiva	Seminis	2.5	2.5
Floralina	Seminis	3.0	2.2
Florida 47	Seminis	2.2	1.8
Florida 91	Seminis	1.8	1.5
Mountain Fresh	Harris	2.5	2.0
Red Sun	Johnny's	3.0	2.8
RoadRunner II	Twilley	3.0	2.8
Sun Leaper	Chesmore	3.2	2.5
Valley Girl	Johnny's	2.2	2.0
Voyager	Johnny's	3.0	1.8
	Mean	2.6	2.2
	Significance	NS	NS

Method of support (stake-and-weave versus cages) also had no significant effect on the average number of healthy plants per plot at either date.