

2003 Tomato Foliar Fertilization Trial

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This trial compared three fertilization programs for tomato production.

METHODS:

Seeds were planted on May 16th into 288 cell trays containing a peat-vermiculite soilless mix. Cells were thinned as needed to 1 plant/cell. Transplants were set into raised beds (covered with black plastic mulch with trickle irrigation under the plastic) 18" apart in the row on June 20, 2003. Rows were 5 foot apart. Experimental design was randomized complete block with 4 replications. The field is located in southern Ohio, Highland County and the soil is a Haubstadt Silt loam. Different levels of fertilizer were incorporated into each replication prior to planting. Weed control was accomplished using Dual II (s-metolachlor). A standard commercial fungicide and insecticide program was followed on a 7-10 day schedule. Fruit was harvested twice on September 26th and on October 6th.

RESULTS:

When analyzed at the 0.05 level of significance there were no statistically significant differences across treatments marketable fruit number or average fruit weight, however there were differences in the number of 25-pound cartons per acre for small, medium and total cartons.

<u>Treatment</u>	<u>Small</u>	<u>Medium</u>	<u>Large</u>	<u>Total</u>	<u>Marketable</u>	<u>Average</u>
	<u>(25 lb. cartons/acre)</u>				<u>Fruit/acre</u>	<u>Weight (lbs)</u>
100 units N	1234	914	410	2559	138636	0.46
120 units N	828	807	322	1958	102273	0.48
120 Units N + Foliar*	1045	666	255	1937	113636	0.42
LSD	320	181	NSD	531	NSD	NSD

*Foliar Fertilizer program

- 2 gal/A 3-18-18 2 weeks after transplanting
- 2 gal/A 3-18-18 2weeks later or at 1st bloom
- 2 gal/A 3-18-18 1st fruit set
- 2 gal/A 3-18-18 1st ripening

DISCUSSION

The lowest fertilizer treatment amount (100 units N) had the largest yield in terms of weight. It is possible that the higher level of pre-plant incorporated fertilizer and foliar addition stimulated vegetative growth at the cost of fruit production. This trial was terminated earlier than we had anticipated due to an unusually early frost.