



Horticulture Program HORT-00-12

## EVALUATION OF HIGH TUNNEL STRAWBERRY PRODUCTION FOR SOUTHERN OHIO, 2000

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This high tunnel strawberry trial has compared four different vermicompost treatments using 3 replications of each treatment plus a control. Objectives are to evaluate potential benefits of adding soil amendments to a high value crop such as high tunnel strawberries to determine if these amendments will improve soil conditions and increase fruit yield and quality. The plots are located at the Ohio State University Piketon Research & Extension Center in Piketon, Ohio. Data was analyzed by SAS statistical software.

### METHODS

**Planting:** Plot was burned-down using Round-up Ultra @ 3 oz./gal water. After 10 days, the ground was plowed, roto-tilled and beds were made. Vermicompost treatments were applied and worked into the top 2-4 inches of soil. Treatments applied were: 1) Food Waste Vermicompost @ 0.5 lbs./ft of row, 2) Food Waste Vermicompost @ 1.0 lbs./ft of row, 3) Cardboard Waste Vermicompost @ 0.5 lbs./ft of row, 4) Cardboard Vermicompost @ 1.0 lbs./ft of row, and 5) Standard inorganic fertilizer @ recommended rate (no vermicompost). All vermicompost treatments were supplemented with inorganic fertilizer at recommended rates of NPK. Plastic mulch and drip irrigation was laid and Chandler plug plants were planted by hand on September 16, 1999.

**Spacing:** Beds are set 5 feet at center. Each bed contained 3 rows of plants with 15 inches between plants and 15 inches between rows, with the middle row staggered relative to the two outer rows.

**Soil Type:** Doles Silt Loam

**Fertilizer:** Plants were fertilized with Peters 9-52-10 starter solution soon after planting. On Dec. 20, 1999 and again on February 25, 2000 plants were fertigated using 28% nitrogen at a rate of 17.5 lbs./acre.

**Weed Control:** Row middles were sprayed with Sinbar @ 4 oz/acre using a CO2 sprayer.

**Pest Management:** February 29, 2000 plants were sprayed with Safer Soap @ 5 oz./gal water for control of aphids. March 10, 2000 and May 19, 2000 Agri-mek was applied @ 16 oz/acre using the CO2 sprayer for control of spider mites. May 19, 2000 applied Sevin @ 1 quart/acre.

## RESULTS

**Table 1. Yields and Quality comparisons from replicated High Tunnel Strawberry Production trials in**

**southern Ohio: Ohio State University Piketon Research & Extension Center, Piketon, Ohio 2000**

### 2000 VERMICOMPOST HIGH TUNNEL STRAWBERRY PRODUCTION

Treatments	lbs / acre	No. of Fruit per Acre	Average Fruit Weight (g)	Yield / Plant (g)	Largest Fruit Weight (g)	No. of Fruit per plant
Foodwaste Vermicompost 1.0 lb/ft	5486.70	2475833	10.1324	724.81	22.723	71.530
Food Waste Vermicompost 0.5 lb/ft	4912.20	2291667	9.8201	665.64	31.019	67.923
Cardboard Waste Vermicompost 1.0 lb/ft	4601.20	2006250	10.5074	624.62	25.093	59.573
Cardboard Waste Vermicompost 0.5 lb/ft	5407.30	2032500	10.1183	604.73	23.283	59.644
Std. Inorganic Fertilizer	4339.40	2012917	9.9353	595	24.33	60.387
<b>LSD</b>	850.46	328253	1.0851	115.6	9.7241	10.262

**Table 2. Rainfall amounts and average high and low temperatures for the 2000 season: Ohio State**

**University Extension Piketon Research & Extension Center, Piketon, Ohio 2000**

**2000 Weather Summary ~ Piketon, Ohio**

	<b>Average High Temperature</b>	<b>Average Temperature</b>	<b>Normal Average Temperature</b>	<b>Average Low Temperature</b>	<b>Total Precipitation</b>	<b>Normal Precipitation</b>
January	40.20	30.00	30.80	18.80	2.51	3.10
February	52.20	40.80	33.00	30.20	4.95	2.10
March	59.20	47.30	41.90	34.60	3.03	4.50
April	65.50	53.30	52.60	41.10	2.34	3.20
May	77.90	66.10	61.70	53.10	0.56	4.50
June	82.90	71.50	72.40	60.50	0.06	3.90
July	82.30	71.60	75.90	61.30	3.35	4.00
August	82.30	71.30	74.10	60.10	2.37	2.70
September	75.20	63.60	65.10	53.90	3.95	1.90
October	71.20	55.80	54.20	43.30	1.13	1.90
November	51.90	41.50	42.60	31.30	1.01	3.00
December	34.40	25.70	36.20	17.80	2.84	2.10
<b>2000 Averages</b>	<b>64.60</b>	<b>53.21</b>	<b>53.38</b>	<b>42.17</b>	<b>2.34</b>	<b>3.08</b>