

2004 Field Evaluation of Maui LCF (Liquid Compost Factor) Effect on Bell Pepper

M. D. Orzolek

The Pennsylvania State University
Penn State Horticulture Research Farm, Rock Springs, PA

LCF is a California Registered Fertilizer consisting of Hawaiian pineapple juice, sugarcane molasses, papaya puree and mushroom spawn. The mushroom spawn composts the fruit juice slurry and the resulting liquid or Compost Tea is harvested, filtered and heat processed as a liquid fertilizer.

Date Transplanted: May 27, 2004

Varieties: Patriot, HMX 1640 and Vivaldi – 4 plants/variety

Spacing: 18” in-the-row and 44” between rows with 12 plants per plot.

Production system: Raised beds(4” high) with blue plastic mulch (18” wide bed) and drip irrigation.

Statistical design: Randomized Complete Block with 4 replications

Harvest dates: August 16 through October 11, 2004 for a total of 4 harvests.

Date of Tissue Analysis: August 20, 2004. Samples were analyzed at the Penn State Ag Analytical Lab, University Park, PA.

Treatments:

- 1 – None
- 2 – LCF applied at time of transplanting at 1.0 qt./100 gallons of water.
- 3 – LCF applied as a foliar application every 2 weeks at 1.0 qt./A.
- 4 – LCF applied as a foliar application every 3 weeks at 2.0 qt./A
- 5 - LCF applied at time of transplanting at 1.0 qt./100 gallons of water plus as a foliar application every 2 weeks at 1.0 qt./A.

Number of Applications:

- Treatment 2 – one (May 27).
Treatment 3 – six (June 9 through September 3).
Treatment 4 – five (June 16 through September 3).
Treatment 5 – six (June 9 through September 3).

Results:

The marketable yield of bell pepper was increased by the application of LCF applied as a foliar application every 2 weeks at 1.0 qt./A compared to the no application treatment (Table 1).

Applying LCF at transplanting at the rate of 1.0 quart/100 gallons of water did not have any affect on pepper fruit yield or average fruit weight, in fact this treatment produced the lowest marketable fruit yield and pepper fruit size of all 5 treatments including the control.. There was no visual difference in the appearance of the pepper plants regardless of treatment. The application of LCF as a foliar treatment at 2 quarts/A every 3 weeks increased the concentration of N, K, Ca and Mg in fully expanded pepper leaves compared to the control and LCF applied at 1.0 quart/A every 2 weeks

(Table 2). There was no uniform or consistent response of applying the LCF material to pepper plants in relation to the minor element concentration in pepper leaves (Table 3).

Table 1. The yield of marketable bell peppers treated with Liquid Compost Factor grown at the Horticulture Research Farm, Rock Springs, PA – 2004.

Treatment	August 16		August 31		Sept. 14		October 11		Total Mkt Frt		Avg. fruit
	# lbs.	wt.- lbs.	# lbs.	wt.- lbs.	# lbs.	wt.- lbs.	# lbs.	wt.- lbs.	# wt.-lbs.		Wt. -oz.
1	24.3	12.9	36.8	19.7	18.8	8.8	11.5	4.6	91.4	46.0	8.1
2	23.0	10.7	31.8	15.9	17.0	7.4	14.8	5.8	86.6	39.8	7.4
3	29.3	15.4	35.5	19.2	18.8	8.4	17.8	7.1	101.4	50.1	7.9
4	27.5	13.7	33.8	18.4	17.8	7.9	13.3	5.4	92.4	45.4	7.8
5	27.0	13.6	35.5	18.3	17.0	7.6	14.5	5.3	94.0	44.8	7.6

Table 2. The level of major elements found in bell pepper leaves treated with Liquid Compost Factor grown at the Horticulture Research Farm, Rock Springs, PA – 2004.

Treatment	N	P	K	Ca	Mg
	%	%	%	%	%
Control	4.28	0.23	3.55	2.29	0.34
1.0 qt./2 wks.	4.28	0.23	3.89	2.27	0.35
2.0 qt./ 3 wks.	4.36	0.23	4.08	2.35	0.38

Table 3. The level of minor elements found in bell pepper leaves treated with Liquid Compost Factor grown at the Horticulture Research Farm, Rock Springs, PA – 2004.

Treatment	Mn	Fe	Cu	B	Zn
	ppm	ppm	ppm	ppm	ppm
Control	176	120	6	33	38
1.0 qt./2 wks	186	117	5	31	40
2.0 qt./ 3 wks	173	115	5	29	37