Vital Earth Resources
706 East Broadway, Gladewater, Texas 75647
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2013 Crop Results

Vitazyme on Strawberries

Researchers: Eng. Agustin Medinilla, Jr., and Juan Carlos Diaz, Ph.D.
Farmer: Eng. Agustin Medinilla, Fortuna Farm
Location: Tlajomulco de Zuniga Municipality, Jalisco, Mexico *Variety*: Albion
Soil type: sandy *Planting date*: August 27, 2012
Experimental design: Five strawberry tunnels of 540 m^2 each were treated with Vitazyme, and 75 tunnels were left untreated to serve as controls. The objective of the study was to evaluate the effects of Vitazyme on strawberry yield.

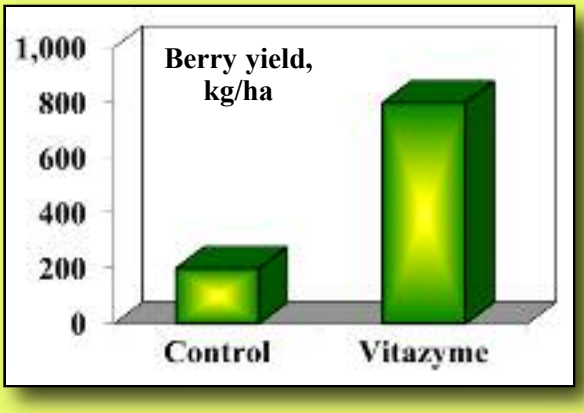
1. Control **2. Vitazyme**

Fertilization: unknown
Vitazyme application: 0.75 liter/ha applied twice, using a sprayer having 300 ml of product in 200 liters of water, at 500 liters/ha output
Pesticide applications: Diazinon, sulfur, and Neem extract sprayed weekly for insect and disease control
Yield results: Berries were picked every two days. Results given below are approximations of actual yield results.

Treatment	Yield*		Yield change
	kg/ tunnel	kg/ha	kg/ha
Control	10	200	—
Vitazyme	40	800	600 (+300%)

*Vitazyme tunnels (5) totalled 0.27 ha, and the control tunnels (75) totalled 4.05 ha

Increase in berry yield with Vitazyme: 300%



Growth results: Vitazyme treated strawberries had the following characteristics compared to the untreated control:

- **Many more flowers**
- **Much larger fruit**
- **Very little red spider mite (*Tetranichus urticae*) infestation**

Conclusions: A strawberry trial in plastic tunnels in Jalisco, Mexico, showed that Vitazyme, applied foliar two times during the growing season, greatly increased flowering and fruit size, while reducing red spider mite damage. The result was a 300% increase in berry yield from a very minor input cost, proving the great efficacy of this program for strawberry production in Mexico.

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2003 Crop Results

Vitazyme on Strawberries

Researcher: Danny Hicks and Daniel Galt, Ph.D.
Research organization: Hulst Research Farm Services, Inc., Hughson, California
Variety: Seascape
Soil type: unknown
Experimental design: A field area divided into eight plots 5 by 25 feet, in a randomized complete block design, was established to investigate the effects of Vitazyme and an untreated control on the yield and quality of strawberries. Four replicates were used.

1. Control **2. Vitazyme**

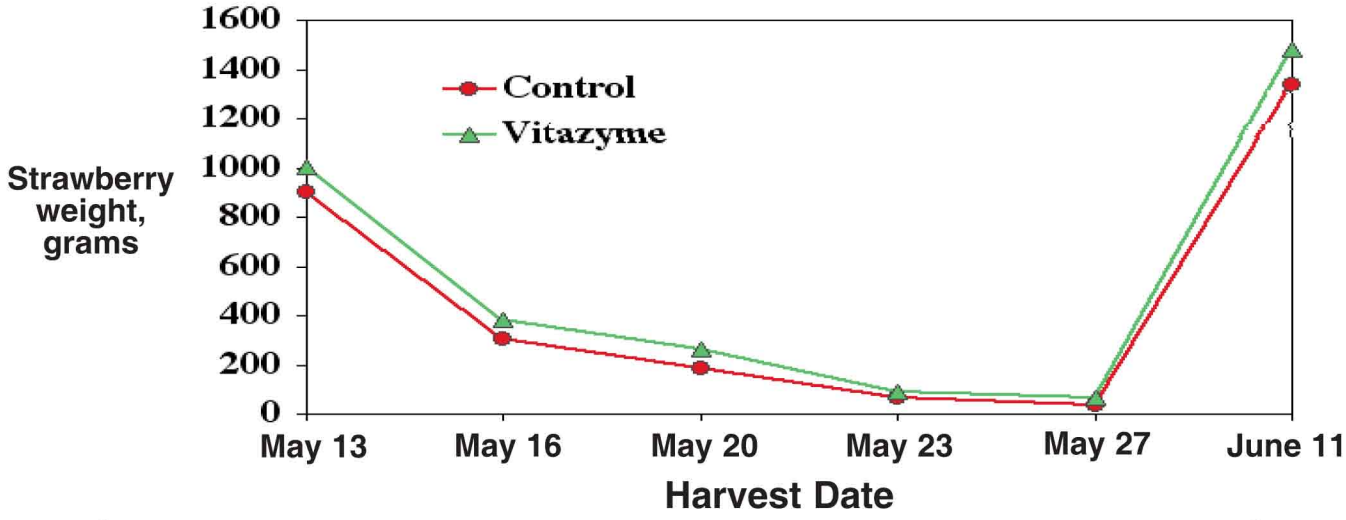
Fertilization: unknown
Vitazyme treatments : Vitazyme was applied at 13 oz/acre over the leaves and soil of the appropriate plots on April 29, May 13, and May 27, 2003. A CO_2-charged backpack sprayer was used with a 5-foot boom and three TeeJet 8003 flat fan nozzles, at 30 psi and 50 gallons/acre.
Weather: Weather during this study turned exceptionally hot, effectively stopping fruit set by late May. Four days in the mid-90s during the third week of May slowed fruit set, and three days in the high 90s during the last week of May, ended fruit set. Then a 100°F temperature on June 3 was followed by lower temperatures in the mid-80s for two weeks. This cooler weather initiated flowering and fruit set again so a final berry weight was taken on June 11. According to the researchers, **"Since all six berry weight events favored Vitazyme, a late spring with 'regular' temperatures could have resulted in lower variability across the trial, and samples taken on a weekly basis in such a case should result in greater measurable differences."**
Yield and quality, and plant results: Berry weights were taken on May 13, 16, 20, 23, 27, and June 13, 2003. All marketable fruit was included in the totals, defined as berries having at least 50% red color, less all culls (those that were rotted, bird damaged, or insect damaged). At the final harvest on June 13 the degree of brix was determined on ten berries from each plot, using a Bausch and Lomb refractometer. On June 17, plants (with roots) from each plot were harvested and divided into tops and roots. Analysis of Variance was calculated for all data using P = 0.10 as the level of significance.

*Harvested Berry Weights**

Treatment	May 13	May 16	May 20	May 23	May 27	June 11	Total**
	grams						
Control	900.0 a	305.0 b	185.0 b	66.8 a	33.0 a	1,340.0 a	2,829.8 a
Vitazyme	1,005.0 a	380.0 a	262.0 a	91.0 a	65.2 a	1,480.0 a	3,283.2 a
Change	105.0 (+12%)	75.0 (+25%)	77.0 (+42%)	24.2 (+36%)	32.2 (+98%)	140.0 (+10%)	453.4 (+16%)
$LSD_{0.10}$	325.3	67.4	64.1	27.3	69.3	644.4	499.7

*Treatment means are not significantly different at P=0.10 if letters are the same, according to the Tukey-Kramer Test.

**This difference is significant at P=0.11, a level at which considerable confidence may be placed



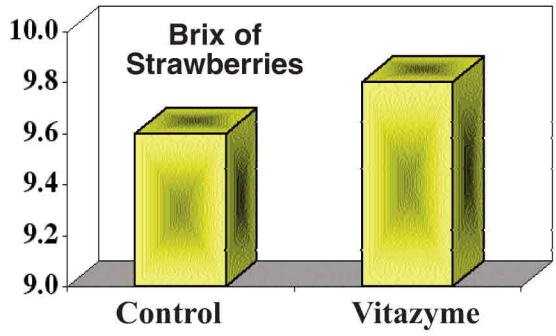
Increase in total berry weight with Vitazyme: 16%

Fruit Brix Value

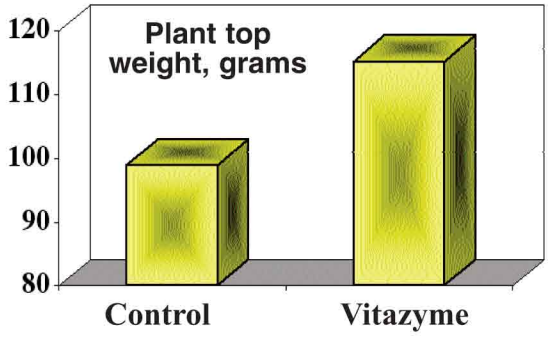
Treatment	Brix value*	Brix change
	Brix	
Control	9.60 a	—
Vitazyme	9.80 a	0.20 (+2%)

*Means followed by the same letter are not significantly different according to the LSD. $LSD_{0.10}$=0.75.

Increase in Brix with Vitazyme: 0.2 units



Plant Top Weight



Treatment	Top weight*	Weight change
	grams	
Control	98.8 a	—
Vitazyme	115.1 a	16.3 (+16%)

*Means followed by the same letter are not significantly different according to the LSD. $LSD_{0.10}$=24.1 grams.

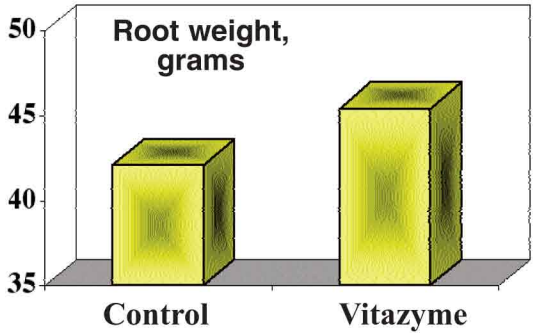
Increase in plant top weight with Vitazyme: 16%

Plant Root Weight

Treatment	Root weight*	Weight change
	grams	
Control	42.1 a	—
Vitazyme	45.4 a	3.3 (+8%)

*Means followed by the same letter are not significantly different according to the LSD. $LSD_{0.10}$=9.3 grams.

Increase in plant root weight with Vitazyme: 8%



Conclusions: This replicated strawberry trial in California proved that Vitazyme, applied to the leaves and soil, is capable of increasing the growth, yield, and quality of strawberries. In particular, the following points are emphasized:

- **Harvested berry weight was increased 16%. The report said, "While this difference is not significant at the 0.10 level of significance, it would be significant at approximately the 0.11 level."**
- **Fruit brix was elevated by 0.2 unit, meaning the fruit was somewhat sweeter.**
- **Top growth of the plants was increased by 16%.**
- **Root growth of the plants was increased by 8%.**

Vitazyme can assist strawberry growers to increase yields and quality to a substantial degree, and to increase income as well. According to the researcher, **"Even though the combined sample weights of the Vitazyme plots weren't statistically superior to those of the untreated control [though the trial was significant at P=0.11], farmers would use any product resulting in a 16% increase in yield."**

Income projections:

Typical returns in *California coastal areas*, assuming a 12 ton/acre crop, with the harvest spread evenly throughout the growing season

No Vitazyme

Season and market	Production*	Price**	Total income
	lb/acre	$/lb	$/acre
Early-season fresh	8,000	1.25	10,000
Mid-season fresh	8,000	0.84	6,720
Late-season fresh	8,000	0.28	~~2,240~~
		Total	18,960

*Assuming the production is relatively uniform throughout the year.
**Early-season fresh: $10.00/8 lb flat; mid-season fresh: $6.75/8 lb flat; Late-season fresh: $0.28/lb.

Plus Vitazyme

Season and market	Production*	Price**	Total income
	lb/acre	$/lb	$/acre
Early-season fresh	9,280	1.25	11,600.00
Mid-season fresh	9,280	0.84	7,795.20
Late-season fresh	9,280	0.28	2,598.40
		Total	21,993.60

*Assuming the production is relatively uniform throughout the year. Production is based on yields obtained by Hulst Research in 2003, which showed a 16% yield increase.
**Early-season fresh: $10.00/8 lb flat; mid-season fresh: $6.75/8 lb flat; Late-season fresh: $0.28/lb.

Increase with Vitazyme: $3,033.60/acre

Typical returns in the *northern San Joaquin Valley*, assuming a 4.5 ton/acre crop, with the harvest spread evenly over the growing season

No Vitazyme

Season and market	Production*	Price**	Total income
	lb/acre	$/lb	$/acre
Early-season fresh	3,000	1.25	3,750
Mid-season fresh	3,000	0.84	2,520
Late-season fresh	3,000	0.28	840
		Total	7,110

*Assuming the production is relatively uniform throughout the year.
**Early-season fresh: $10.00/8 lb flat; mid-season fresh: $6.75/8 lb flat; Late-season fresh: $0.28/lb.

Plus Vitazyme

Season and market	Production*	Price**	Total income
	lb/acre	$/lb	$/acre
Early-season fresh	3,480	1.25	4,350.00
Mid-season fresh	3,480	0.84	2,923.20
Late-season fresh	3,480	0.28	974.40
		Total	8,247.60

*Assuming the production is relatively uniform throughout the year. Production is based on yields obtained by Hulst Research in 2003, which showed a 16% yield increase.
**Early-season fresh: $10.00/8 lb flat; mid-season fresh: $6.75/8 lb flat; Late-season fresh: $0.28/lb.

Increase with Vitazyme: $1,137.60/acre

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2000 Crop Results

Vitazyme on Strawberries

Grower: Saechow *Researcher*: Kumen Meservy *Location*: Fairfield, California
Variety: unknown *Planting date*: fall of 1999

Experimental design: Two fields of 2 and 3 acres of a strawberry operation were used for this study. One was treated with Vitazyme and the other left untreated.

1. Control (Field A, 2 acres) **2. Vitazyme (Field C, 3 acres)**

Fertilization: the same for both fields
Irrigation: the same for both fields
Pesticides: the same for both fields
Vitazyme treatment: 13 oz/acre sprayed two times
Yield results: Actual yields are proprietary, though the increase with Vitazyme was allowed to be released.

Yield increase with Vitazyme: 140 cases/acre

Income results: Value per case of strawberries: $12.00

Income increase with Vitazyme: $1,680.00/acre

Plant growth observations:

Grower's comments:

"The plants of Field C [with Vitazyme] were **generally healthier**."

"The treated berries, even after chemical applications, were **much sweeter** than the controls."

Researcher's comments:

"The application of crop protection chemicals will usually reduce the Brix levels of most crops by 4 to 10 Brix points. **These Vitazyme treated strawberries were exceptionally sweet, even after the application of chemicals to control powdery mildew!** Other Vitazyme dealers who received Saechow berries felt that the quality and flower were outstanding, the best in Northern California.