2000 Crop Results

Vitazyme on Walnuts (New Planting)

A testimonial

Farmer: Cheryl Smith, Jack’s Orchard Supply
Location: Chico, California
Planting date: May 17, 2000

We planted 176 walnut trees in May of 2000. This is late by 45 to 60 days of normal planting. At planting we added 6 oz. of Vitazyme to the root dip water. All trees were dipped.

We have received many comments about the vitality, deep green color, and growth of these young walnuts. The most significant hardship with late planted walnuts is getting a good stand. Death losses can be fairly high, so we were very pleased to have lost less than 2% of the total planted trees.

We are a dealer for Vitazyme in the 530 telephone area code, and we are hearing a lot of comment on this product. Growers like how it works. So do we. Try it on strawberries: wow!!!

Death loss for a late planting: < 2%

Cheryl Smith
Jack’s Orchard Supply
2000 Crop Results

Vitazyme on Pistachios

A testimonial

Researcher: Al Simons

Location: Newberry Springs, California

Tree age: 10 years

Soil type: light blow sand with high levels of boron in subsoil

All areas of a 10-acre pistachio grove were treated with Vitazyme: (a) 13 oz/acre on the soil before bud initiation; (b) 13 oz/acre at bud breaks; (c) 13 oz/acre at early sizing; (d) 13 oz/acre at nut gel to white

Yield results: The crop produced the largest size nuts in the Newberry Springs Pistachio Association, and also the largest crop harvest in the Newberry Springs Pistachio Association.

Income results: Al Simons: “I estimate that this crop returned 250 times the cost of the Vitazyme. This is based on the data given by the grower when he reordered 4 gallons of Vitazyme for the year 2001.”
Grower: Tom, Dan, and Chip Rogers  
Varieties: Non Pareil, Carmel, Butte, and Padre  
Location: Madera, California  
Soil type: sandy loam

Tree age: blocks 1, 2, 3, and 4 – 20 years; blocks 5 and 6 – 8 years

Tree spacing: Blocks 1, 2, 3, and 4 – 22 ft x 22 ft; Blocks 5 and 6 – 22 ft x 18 ft

Experimental design: Six blocks of almond trees were selected for a comparative test, pitting three low yielding blocks against three higher-yielding blocks. The three low-yielding blocks were treated with Vitazyme, and the other three left untreated.

<table>
<thead>
<tr>
<th>Block</th>
<th>Acreage</th>
<th>Variety</th>
<th>Yield potential</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>Non Pareil/Carmel</td>
<td>higher</td>
<td>control</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>Non Pareil/Carmel</td>
<td>lower</td>
<td>Vitazyme</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>Non Pareil/Carmel</td>
<td>higher</td>
<td>control</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>Non Pareil/Carmel</td>
<td>lower</td>
<td>Vitazyme</td>
</tr>
<tr>
<td>5</td>
<td>11</td>
<td>Butte/Padre</td>
<td>higher</td>
<td>control</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>Butte/Padre</td>
<td>lower</td>
<td>Vitazyme</td>
</tr>
</tbody>
</table>

Fertility treatments: All areas of the grove were sprinkler irrigated beneath the leaf canopy with "REF water", an electronically treated water using a programmed electronic device that imprints the water with electrons. All areas received 75 lb/acre of N as "UN 32" in April, and again in June. An organism cocktail of "Ceres", plus "Liqui-Comp", a mixture of liquified compost plus microbes, was applied 2 to 3 weeks before both of the UN 32 applications through the sprinkler system. Two applications of 10 lb/acre K₂SO₄ were made in the spring to the leaves using an electrostatic sprayer.

Vitazyme treatments: Vitazyme at 6 oz/acre was sprayed to three blocks on the leaves in May, applied through the sprinkler system at 13 oz/acre in June, and sprayed on the leaves at 6 oz/acre in July.

Harvest date: Non Pareil – September 20; Padre – October 9; Butte – October 16; Carmel – October 30.

Harvest methods: The various blocks and varieties were not separated and weighed at harvest due to the threat of rain and the need to harvest quickly. A rain had fallen on the crop once, and the almonds had been lifted, cleaned, and dropped again for drying before another rainstorm arrived.

Yield results: During harvest (by the farmers themselves), Blocks 2, 4, and 6 produced as many or slightly more almonds than the untreated Blocks 1, 3, and 5, as determined by load counts for each area. This proved that Vitazyme increased almond yield significantly above the normal in these less productive blocks.

Yields for 2000:

- Non Pareil and Carmel – 2,875 lb/acre (normal bloom and pollination)
- Butte and Padre – 1,805 lb/acre (two week later bloom, and poor pollination due to very rainy weather)

State average yield – 1,292 lb/acre (based on 620,000,000 lb over 480,000 acres)

Quality results: Turnout (percent of meats of the entire crop hauled in) for the two major varieties raised was very...
high in spite of generally thicker hulls than in 1999. These turnout values were higher than for the usual turnout for 2000.

Non Pareil – 29.56 %
Carmel – 29.69 %

**Conclusions:** In spite of poor pollination of the 2000 crop and adversities during the growing season – and very low statewide average yields (1,292 lb/acre) – the Rogers’ yields were far above this average: 121% for Non Pareils and Carmels, and 40% for Buttes and Padres. *Vitazyme played a significant role in this high yield by boosting yields significantly in the three less productive blocks of the farm. Vitazyme also played a part in maintaining high quality and treatment of the nuts.*

Some comments of Tom Rogers regarding Vitazyme effects on his almonds are as follows:

- “I am very pleased with how Vitazyme performed on our almonds this year.”
- “Vitazyme caused Blocks 2, 4, and 6 to produce as well as – or a little better than – the higher producing Blocks 1, 3, and 5.”
- “The effects of Vitazyme caught our eye.”
- “We plan to use Vitazyme on all of our acres next year.”
Vital Earth Resources
706 East Broadway, Gladewater, Texas 75647
(903) 845-2163  FAX: (903) 845-2262

1997 Crop Results

Vitazyme on Almonds

Researcher: Chip Rogers
Variety: Non Pareil and Carmel
Soil type: sandy loam
Location: Madera, California
Tree age: mature
Tree spacing: 22 ft x 22 ft
Experimental design: Ten acres of a 45-acre mature almond grove were treated with Vitazyme, with all areas of the grove otherwise being treated the same. This ten acres constituted 15 rows of trees.

1. Control
2. Vitazyme, applied twice

Two varieties of almonds were present in both treated and untreated areas, and were harvested separately.

Fertility treatments: All areas of the grove were sprinkler irrigated with “REF water”. This water is directly from a deep well and run through a pipe fitting to which is attached a programmed electronic device that imprints the water with electrons. All areas received 50 lb of N/acre as “un 32” in April, and 50 lb of N/acre as “can 17” in early October. The same applications had been made the previous year. “Rhizone”, an organism cocktail, was applied foliar to all trees, as well as 10 lb/acre of K₂SO₄ using an electrostatic sprayer.

Vitazyme treatments: Vitazyme at 13 oz/acre was applied by injector through the sprinkler irrigation system for the treated area in mid-April, and again at 13 oz/acre in mid-July. Bloom was from late January through early March, an unusually long period.

Harvest date and method: August 20, 1997. For the treated and control areas a harvester loaded a full trailer, and the area for this harvest was calculated. Weights of these nuts were obtained, and quality evaluations of “turnout” (the percent of nut meat of the entire weight) and “rejects” (the percent of nuts damaged by worms) were determined for both trailer loads.

Yield and quality results: Non Pareil almonds:

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vitazyme</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area harvested for one trailer load</td>
<td>2.64 acre</td>
<td>1.98 acre</td>
<td>429.9 lb/acre (+15.5%)</td>
</tr>
<tr>
<td>Total nut production, less hulls</td>
<td>2,777.2 lb/acre</td>
<td>3,207.1 lb/acre</td>
<td></td>
</tr>
<tr>
<td>Turnout (nut meat percentage of nuts and hulls)</td>
<td>26.31%</td>
<td>28.68%</td>
<td>+2.37%</td>
</tr>
</tbody>
</table>

Increase in turnout: 2.37 percentage points
### Control vs. Vitazyme

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vitazyme</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rejects (worm damage)</td>
<td>5.2%</td>
<td>3.4%</td>
<td>-1.8 percentage points</td>
</tr>
</tbody>
</table>

#### Reduction in rejects: 1.8 percentage points

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vitazyme</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net nut production (total less rejects)</td>
<td>2,632.8 lb/acre</td>
<td>3,098.1 lb/acre</td>
<td>465.3 lb/acre (+17.7%)</td>
</tr>
</tbody>
</table>

#### Yield increase: 17.7%

**Income results:** The estimated price for the almonds is $1.50/lb.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vitazyme</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total income</td>
<td>$3,949.20/acre</td>
<td>$4,647.15/acre</td>
<td>$697.95/acre</td>
</tr>
</tbody>
</table>

### Comments:

1. The percent turnout was improved for Vitazyme due to fuller nut meats.
2. The percent rejects was reduced for Vitazyme due to less insect (worm) damage, even though a neighboring almond grove was not well tended and in past seasons would increase worm damage on this side of the grove. Thus, Vitazyme provided some insect protection.
3. In spite of a nitrogen application of only 100 lb of N/acre, versus the usual recommended 200 to 300 lb/acre, yields were maintained at high levels.
4. The Carmel variety, though not analyzed in this study, provided about the same yield increase as the Non Pareil variety.
**2010 Crop Results**

**Vitazyme on Peanuts**

*Researcher*: unknown  
*Location*: Phu Cat, Binh Dinh Province, Viet Nam  
*Variety*: local variety  
*Planting date*: December 20, 2009  
*Experimental design*: A trial was set up with peanuts using three treatments in separate areas of a field. The purpose of the study was to evaluate the effect of Vitazyme and Rhizobium bacteria on peanut growth and yield.

1. **Control**  
2. **Rhizobium**  
3. **Rhizobium + Vitazyme**

*Vitazyme application*: 5% seed treatment before planting  
*Vitazyme + Rhizobium applications*: 5% Vitazyme plus 1 kg/liter of water, on the seeds  
*Rhizobium application*: 1 kg/ha of inoculant in 1 liter of water, on the seeds  
*Germination results*: Vitazyme accelerated germination by 1 to 2 days.

**Improvement in time to germination with Vitazyme: 1 to 2 days**

**Yield results**:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield</th>
<th>Yield change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3.0</td>
<td>---</td>
</tr>
<tr>
<td>Rhizobium</td>
<td>3.4</td>
<td>0.4 (+13%)</td>
</tr>
<tr>
<td>Rhizobium + Vitazyme</td>
<td>3.6</td>
<td>0.6 (+20%)</td>
</tr>
</tbody>
</table>

**Increase in yield with Vitazyme + Rhizobium bacteria: 20%**

**Conclusion**: This peanut trial in Viet Nam, using Rhizobium bacterial inoculant with and without Vitazyme as a seed treatment, proved that Vitazyme + Rhizobium alone boosted yield by 13% above the control, while Vitazyme plus the Rhizobium increased yield by 20%, another 7% above the Rhizobium alone. These results prove not only the efficacy of Rhizobium bacteria to improve peanut yields, but of Vitazyme to further enhance Rhizobium activity. No treatment with Vitazyme alone was used in this study.
## Peanuts Crop Report Directory

### Recommended Application Rates For Peanuts

<table>
<thead>
<tr>
<th>Year</th>
<th>Variety</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>Unknown variety</td>
<td>Cuba</td>
</tr>
<tr>
<td>2005</td>
<td>TamSpan 90</td>
<td>Whitheral, Texas</td>
</tr>
<tr>
<td>2003</td>
<td>TamSpan 90</td>
<td>Whitheral, Texas</td>
</tr>
<tr>
<td>2002</td>
<td>Spanish, Tam-Span 90</td>
<td>Whitherral, Texas</td>
</tr>
<tr>
<td>1998</td>
<td>AK62</td>
<td>Ebini region, Guyana</td>
</tr>
<tr>
<td>1997</td>
<td>Valencia</td>
<td>Brownfield, Texas</td>
</tr>
</tbody>
</table>
Crop recommendations for Peanuts

Apply Vitazyme at planting with one of the following methods:

**Dry Planters:**

With herbicide either before or after planting (either before or shortly after emergence) at the rate of 1 liter/hectare (13-16 oz/acre).

**or**

**Liquid Planters:**

In furrow or 2x2 through liquid attachment on the planter. For small plots spray a 1% solution directly on the seeds in furrow before the row is closed at the rate of 1 liter/hectare (13-16 oz/acre).

Apply again at the rate of 1 liter/hectare (13-16 oz/acre) at early bloom or approximately 30 days after planting.

*Vitazyme can be tank mixed with all farm chemicals, including herbicides, insecticides, fungicides, and fertilizers.*

*Added benefit: when mixed with herbicide, Vitazyme will stimulate weed growth, thereby enhancing herbicide efficacy.*
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2006 Crop Results

Vitazyme on Peanuts
Ministry of Sugar, Cuban Ministry of Agriculture

Researchers: Wilberto G. Marrero and Jorge G. Acosta
Location: Pedro Gonzalez Credit and Service Cooperative, Havana Province, Cuba
Soil type: red ferralitic (Eutrustox) of low fertility  Variety: unknown
Planting rate: unknown  Row spacing: unknown
Planting date: June 6, 2006  Watering: rain-fed
Experimental design: A field was split with one part treated with Vitazyme and the other portion left untreated. The objective of the study was to discover the effect of Vitazyme on peanut yield.

1. Control  2. Vitazyme

Fertilization: unknown
Vitazyme application: 1 liter/ha on June 21, 15 days after planting; 1 liter/ha on July 17, 31 days after planting

Growth observations:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Control</th>
<th>Vitazyme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pod number</td>
<td>Fewer: 15 to 18/plant</td>
<td>Many more: 30 to 33/plant</td>
</tr>
<tr>
<td>Foliage development</td>
<td>Smaller leaves, slower growth</td>
<td>Larger leaves, faster growth</td>
</tr>
<tr>
<td>Flower development</td>
<td>Less</td>
<td>Greater</td>
</tr>
<tr>
<td>Canopy closure</td>
<td>Slower</td>
<td>Faster</td>
</tr>
<tr>
<td>Root growth</td>
<td>Smaller</td>
<td>Greater</td>
</tr>
</tbody>
</table>

Harvest date: September 20, 2006, after 104 days of growth

Yield results:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tons/ha</td>
<td>tons/ha</td>
</tr>
<tr>
<td>Control</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Vitazyme</td>
<td>1.93</td>
<td>0.93 (+93%)</td>
</tr>
<tr>
<td>Historical yield</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

Increase in peanut yield: 93%

Conclusions: In this Cuban peanut study conducted on red ferralitic soils, two applications of Vitazyme at 1 liter/ha each time greatly increased the yield of peanuts (+93%) above the control and also over the historical yield average.
2005 Crop Results

Vitazyme on Peanuts

**Researcher/Farmer:** George Nickelson  **Location:** Whitheral, Texas  **Variety:** TamSpan 90

**Row spacing:** 40 inches to middles, 8 inches on berm  **Population:** 100 lb/acre

**Soil type:** medium sandy loam  **Planting date:** May 15, 2004  **Previous crop:** cotton

**Experimental design:** A center-pivot field was divided into two 33.5-acre areas, with one part receiving Vitazyme and the other no product. All other treatments were the same for both areas.

1. Control  
2. Vitazyme

**Fertilizer:** 11-52-0% N-P₂O₅-K₂O applied pre-plant, with some liquid calcium and nitrogen applied through the irrigation system

**Vitazyme application:** 13 oz/acre at planting, sprayed on the soil in a 10-inch band behind the planter; 13 oz/acre sprayed on the leaves and soil at early bloom

**Irrigation:** about one inch per week during the primary growing period

**Weather:** a fairly cool summer with good rainfall all year

**Harvest date:** dug in early October, and picked up November 1 to 6

**Yield results:** Results were affected by excessive weed growth from considerable rainfall, the Vitazyme area more so because it was on the outside of the circle. The Vitazyme area was also lower, on part of an old lake bottom.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Peanut yield</th>
<th>Change</th>
<th>Yield increase: 6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3,329 lb/acre</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Vitazyme</td>
<td>3,521 lb/acre</td>
<td>192 (6%)</td>
<td></td>
</tr>
</tbody>
</table>

**Quality and income results:** Based on payment reports, the average prices for the peanuts were as follows:

- Control: $0.1861/lb, or $372.20/ton
- Vitazyme: $0.1869/lb, or $373.80/ton

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Peanut yield</th>
<th>Peanut value*</th>
<th>Value change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3,329 lb/acre</td>
<td>619.53 $/acre</td>
<td>—</td>
</tr>
<tr>
<td>Vitazyme*</td>
<td>3,521 lb/acre</td>
<td>658.07 $/acre</td>
<td>38.54 $/acre</td>
</tr>
</tbody>
</table>

*See the prices above.

**Conclusions:** This west Texas field-scale peanut study revealed that Vitazyme produced a small (6%) but highly profitable yield increase, which was of slightly higher quality and produced $38.54/acre more income. This increase came despite the Vitazyme treatment having a more serious weed problem than the control, and being located on an old lake bed which, during this wet year, hindered maximum yields.
2003 Crop Results

Vitazyme on Peanuts

Farmer: George Nickelson
Location: Whitheral, Texas

Variety: TamSpan 90
Row spacing: 40 inches to middles, 8 inches on berm

Soil type: medium sandy loam
Population: 100 lb/acre

Previous crop: cotton
Planting date: May 15, 2003

Experimental design: A center pivot field was divided into two 33.5-acre areas, one receiving Vitazyme and the other none. All other treatments were the same for both parcels.

1. Control
2. Vitazyme

Fertilizers: 11-52-0 fertilizer applied preplant

Vitazyme application: 13 oz/acre at planting, 13 oz/acre about July 20 on the leaves and soil

Irrigation: as needed, but one period of about 2 weeks received none due to the loss of the irrigation rig from a tornado.

Weather: a hot, extremely dry summer; 8.5 inches of rain for the year, with no rain for August and September

Harvest date: November 18, 2003 (dug several weeks earlier)

Yield results:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/acre</td>
<td>lb/acre</td>
</tr>
<tr>
<td>Control</td>
<td>3,515</td>
<td>–––</td>
</tr>
<tr>
<td>Vitazyme</td>
<td>3,582</td>
<td>67 (+2%)</td>
</tr>
</tbody>
</table>

Yield increase: 2%

Income results: The sale price of the peanuts was $370/ton, or $0.185/lb.

67 lb/acre x $0.185/lb = $12.40/acre more income from Vitazyme

Conclusions: This peanut trial in west Texas produced a small but profitable yield increase with Vitazyme application. The peanut grade was similar for both treatments (about 77). The yield difference would have been greater if the treated areas had not included low areas that produced less yield due to more weed competition and poorer water relations. In 2002, a similar test on this same farm with peanuts produced a 30% yield increase with Vitazyme.
2002 Crop Results

Vitazyme on Peanuts

**Farmer:** George Nickelson, Jr.  
**Location:** Whitherral, Texas  
**Row spacing:** 40 inches, double row with 8 in spacing  
**Variety:** Spanish, “Tam-Span 90”  
**Planting date:** May 18, 2002  
**Soil type:** fine sandy loam  
**Harvest date:** dug October 21, picked up about November 15

**Experimental design:** A center pivot area was divided into halves, one half treated with Vitazyme and the other half left untreated.

**Fertilization:** 20 lb/acre N preplant, 11-50-0 postplant

**Vitazyme application:** 13 oz/acre June 18, on the leaves and soil

**Seed inoculation:** all seeds inoculated with rhizobium bacteria at planting

**Yield results:**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total for 33 acres</th>
<th>Area yield</th>
<th>Yield change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>121,484 lb</td>
<td>3,681 lb/acre</td>
<td>—</td>
</tr>
<tr>
<td>Vitazyme</td>
<td>157,398 lb</td>
<td>4,770 lb/acre</td>
<td>+1,089 (+30%)</td>
</tr>
</tbody>
</table>

**Quality results:** All of the peanuts graded at 77, a very high grade.

**Income results:** A price of $382/ton was received for the peanuts.

**Increase in income with Vitazyme:** $208.00/acre

**Cost:Benefit ratio of Vitazyme:** 52:1

**Quality observations:** Peanuts that were collected from both treatments on August 21, and stored in plastic bags, revealed that the control peanuts developed a coating of white fungus over all pod surfaces; the Vitazyme treated peanuts developed very little fungus coating. This difference may imply the ability of Vitazyme to help the peanut plant deter fungal diseases.

**Conclusions:** One application of Vitazyme on the irrigated peanut field increased the yield by 30%, giving a very high return ratio of 52:1, which translated to an increase of $208/acre. This great increase in yield and return with Vitazyme is likely due in part to the synergism of Vitazyme’s active agents with the rhizobium bacteria in the rhizosphere to encourage natural symbiotic nitrogen fixation.
1998 Crop Results

**Vitazyme on Peanuts**

Caribbean Agricultural Research and Development Institute (CARDI)

**Researcher:** Leslie Simpson, Ph.D.  
**Location:** Ebini region, Guyana  
**Seeding date:** unknown  
**Variety:** AK62  
**Seeding rate:** unknown  
**Row spacing:** unknown  

**Experimental design:** A randomized complete block design with four replications was established on a uniform soil area. Each plot was 2.7X10.0 meters (0.0027 ha). Treatments were as follows:

1. Control (no Vitazyme)  
2. Vitazyme applied twice  
3. Vitazyme applied once  

**Fertility treatments:** unknown  

**Vitazyme applications:** For Treatment 2, Vitazyme was applied at 1 liter/ha (13 oz/acre) to the soil after planting but before emergence, and at the same rate at pegging. For Treatment 3, only the pegging treatment was applied.  

**Harvest date:** unknown  

**Yield results:** Several parameters were determined at harvest, as indicated below.

### PLANT HEIGHT

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Plant height, cm</th>
<th>Decrease, cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control</td>
<td>58.0</td>
<td>--</td>
</tr>
<tr>
<td>2. Vitazyme twice</td>
<td>56.5</td>
<td>1.5 (-3 %)</td>
</tr>
<tr>
<td>3. Vitazyme once</td>
<td>53.2</td>
<td>4.8 (-8 %)</td>
</tr>
</tbody>
</table>

**Dry weight decrease:**  
8% Vitazyme twice: + 8.5%

### PEG FRESH WEIGHT

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Peg Fresh weight, g</th>
<th>Increase, g</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control</td>
<td>571.8</td>
<td>--</td>
</tr>
<tr>
<td>2. Vitazyme twice</td>
<td>736.2 *</td>
<td>164.4 (+29 %)</td>
</tr>
<tr>
<td>3. Vitazyme once</td>
<td>664.8</td>
<td>93.0 (+16 %)</td>
</tr>
</tbody>
</table>

*Significantly greater than the control at P=0.06. LSD$_{0.05}$ =177.6.
**PEG DRY WEIGHT**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Peg dry weight, g</th>
<th>Increase, g</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control</td>
<td>432.2</td>
<td>--</td>
</tr>
<tr>
<td>2. Vitazyme twice</td>
<td>538.7 *</td>
<td>106.5 (+25 %)</td>
</tr>
<tr>
<td>3. Vitazyme once</td>
<td>497.2</td>
<td>65.0 (+15 %)</td>
</tr>
</tbody>
</table>

*Significantly greater than the control at P=0.07. LSD 0.05=113.6.

**PEG NUMBER**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Peg number</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control</td>
<td>15.1</td>
<td>--</td>
</tr>
<tr>
<td>2. Vitazyme twice</td>
<td>16.0</td>
<td>0.9 (+6 %)</td>
</tr>
<tr>
<td>3. Vitazyme once</td>
<td>16.7</td>
<td>1.6 (+11 %)</td>
</tr>
</tbody>
</table>

**PLOT YIELD**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Plot yield, kg</th>
<th>Increase, kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control</td>
<td>8.78</td>
<td>--</td>
</tr>
<tr>
<td>2. Vitazyme twice</td>
<td>9.33 *</td>
<td>0.55 (+6 %)</td>
</tr>
<tr>
<td>3. Vitazyme once</td>
<td>10.63 **</td>
<td>1.85 (+21 %)</td>
</tr>
</tbody>
</table>

*Significantly greater than the control at P=0.14; **significantly greater than the control at P=0.01. LSD 0.10 =0.74; LSD0.01=1.29.

**Comments:** Vitazyme applied to peanuts at the initiation of pegging greatly and significantly stimulated peanut growth and yield (by 21%). Peg fresh and dry weights were improved by two applications of Vitazyme, but the yield effect showed through primarily with a single 1 liter/ha (13 oz/acre) application at pegging. Plant height was negatively correlated with yield. It appears that one application of Vitazyme at pegging may be sufficient in this tropical environment to elicit the maximum yield potential of peanuts.
Vital Earth Resources  
706 East Broadway, Gladewater, Texas 75647  
(903) 845-2163     FAX: (903) 845-2262  

1997 Crop Results  

Vitazyme on Organic Peanuts  
— Irrigated —  

Researcher: Cliff Bingham  
Location: Brownfield, Texas  
Seeding rate: 57 lb/acre  
Variety: Valencia  

Experimental design: A production field was divided into two sections: an untreated control and a Vitazyme treated area. A live *Rhizobium* seed inoculant was added on the seed along with Vitazyme.  

1. Control (no Vitazyme)  
2. Vitazyme plus *Rhizobium*  

Fertility treatments: manure at 10 tons/acre, applied in February of 1996  
Vitazyme application: 13 oz/acre on the seed at planting, along with a live *Rhizobium* inoculant; 10 oz/acre sprayed on the foliage and soil at early bloom  
Soil: Brownfield sandy loam  
Weed control: cultivation  
Harvest date: Vitazyme treatment: dug on September 18 and 19, and threshed September 25. Control treatment: dug on September 30, and threshed October 5  

Yield results:  

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vitazyme</th>
<th>Increase with Vitazyme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peanut weights</td>
<td>2,981 lb/acre</td>
<td>3,155 lb/acre</td>
<td>174 lb/acre</td>
</tr>
</tbody>
</table>

*Note: This yield increase should have been higher due to a breakdown of the irrigation system, resulting in less water delivered to the Vitazyme rows later in the season.*  

Income results: The price paid for the Vitazyme-treated peanuts was $0.225/lb, and $0.219/lb for the control peanuts. The reduced price for the control was in part due to greater shelling caused by excessive drying of the peanuts before threshing.  

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Vitazyme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peanut income</td>
<td>$652.84/acre</td>
<td>$709.88/acre</td>
</tr>
</tbody>
</table>

Income Increase: $57.04/acre  

Comments: The Vitazyme treated peanuts had much better growth and a darker green color than the control throughout the season. The Vitazyme and *Rhizobium* effects are unable to be determined individually by this test.