**Blackberries with Vitazyme application**

**Researcher:** Agronomist Pedro Pablo Barrera Barrera  
**Grower:** Pedro Pablo Barrera Barrera  
**Location:** New Santa Rosa, Santa Rosa Department, Guatemala  
**Altitude:** 1,000 m  
**Variety:** Tupy  
**Blooms per year:** 2.5  
**Plant age:** 4 years  
**Experimental design:** A blackberry planting was treated three times with Vitazyme on 0.7 ha to determine the effect of the product on berry yield and plant parameters.

### Yield results:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield&lt;sup&gt;1&lt;/sup&gt; (boxes/ha)</th>
<th>Yield change&lt;sup&gt;2&lt;/sup&gt; (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1,214</td>
<td>—</td>
</tr>
<tr>
<td>Vitazyme</td>
<td>2,071</td>
<td>857 (+71%)</td>
</tr>
</tbody>
</table>

<sup>1</sup>Yield of the previous crop  
<sup>2</sup>Yield increase with Vitazyme: 71%

### Fertilization and Vitazyme application

**Application method:** 16-liter sprayer  
**Growth results:**
1. Vitazyme did not damage the fruit in any way.  
2. Chlorophyll levels were increased, and senescence delayed.  
3. Plants were more vigorous and less susceptible to disease.  
4. Flowering was stimulated and extended.  
5. Fruit set was improved, achieving 32 buds per rosette.  
6. Fruits were of greater size and weight.  
7. Fruit uniformity was improved.  
8. Non-productive male shoots were caused to differentiate into productive female shoots.

### Application of Vitazyme

<table>
<thead>
<tr>
<th>Application</th>
<th>DAD&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Growth stage</th>
<th>Application rates&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Purpose of application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>Vegetative</td>
<td>1 liter/ha</td>
<td>Stimulate elongation of shoots</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>Pre-flower and blossom</td>
<td>1 liter/ha</td>
<td>Stimulate flower buds; increase fruit set</td>
</tr>
<tr>
<td>3</td>
<td>75</td>
<td>Fruit-set</td>
<td>1 liter/ha</td>
<td>Increase size and consistency of fruit</td>
</tr>
</tbody>
</table>

<sup>1</sup>DAD = days after defoliation; <sup>2</sup>Application volume was 571 liters/ha of spray solution. The water was corrected to pH 4.5 to 5.5.

### Conclusions:

Three 1 liter/ha foliar Vitazyme applications increased blackberry production by 71% in this trial. Besides, the fruit was of superior quality in terms of size and weight. The treated plants were also healthier, and tended to differentiate into productive female shoots.
Researchers: Lucero Fernandez
Farmer: Odilon Barragan
Research organization: Quimica Lucava
Location: Cieneguita Farm, Los Reyes, Michoacan, Mexico
Variety: Tuppi
Experimental design: An area of 1 hectare in a blackberry field was treated with four Vitazyme applications to evaluate the effect of the product on berry yield.

Fertilization: Unknown
Vitazyme application: 1 liter/ha sprayed on the leaves about every 30 days, on September 3, October 10, November 11, and December 2, 2014.

### Growth observations:
Vitazyme produced the following:
- More flowers and fruit
- Higher quality fruit with a longer shelf life
- Greater uniformity in the crop
- Fewer rejects of fruit

### Harvest date:
December 13, 2014, after about 100 days from the first application

### Yield results:
The number of cases per hectare were counted for both areas.

### Conclusion:
A blackberry trial with Vitazyme in Mexico showed that four monthly applications at 1 liter/ha each time, produced 9% yield increase, along with few rejected fruit. The treated crop was also more uniform, had more flowers and fruit, and produced higher quality fruit with a longer shelf life. All of these results point towards the great efficiency of Vitazyme for use with blackberries in Mexico.

### Treatment Cases Total Yield Rejects
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Cases</th>
<th>Case weight</th>
<th>Total weight</th>
<th>Yield change</th>
<th>Rejects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>169</td>
<td>2.28</td>
<td>385,32</td>
<td>—</td>
<td>19.88</td>
</tr>
<tr>
<td>Vitazyme</td>
<td>185</td>
<td>2.28</td>
<td>421.80</td>
<td>36.48 (9%)</td>
<td>16.79</td>
</tr>
</tbody>
</table>

Blackberries treated with four Vitazyme applications yielded 9% more fruit than the control, which was of higher quality, more uniform, and which retained a longer shelf life.

### Berry Yield

<table>
<thead>
<tr>
<th>Berry yield, kg/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>385.32</td>
</tr>
<tr>
<td>421.80</td>
</tr>
</tbody>
</table>

### Rejects

<table>
<thead>
<tr>
<th>Rejects, yield, kg/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.88</td>
</tr>
<tr>
<td>16.79</td>
</tr>
</tbody>
</table>

Increase in berry yield with Vitazyme: 9%

Decrease in rejects with Vitazyme: 3.09 kg/ha (16%)