Researcher: Hygrotech, South Africa
Research Coordinator: Cornelius Oosthuizon, I.E. Organics, South Africa
Location of study: Sondveld Region, Western Cape Province, South Africa
Soil type: sand
Experimental design: On an organic farm, very sandy soil was collected, some of which was treated with Vitazyme at 1 liter/ha (13 oz/acre). The respiration of soil organisms was measured on three samples of the Vitazyme treated soil, and on three samples of untreated soil. The methodology of determining CO₂ evolution was not indicated in the report.

1. Control 2. Vitazyme

Vitazyme application: No details were given.

Respiration results:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Sample weight</th>
<th>Sampling time</th>
<th>CO₂ evolved</th>
<th>Change in CO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>grams, average</td>
<td>minutes</td>
<td>mg/kg of soil/hour</td>
<td>mg/kg of soil/hour</td>
</tr>
<tr>
<td>1. Control</td>
<td>20.004</td>
<td>30</td>
<td>9.15 b</td>
<td></td>
</tr>
<tr>
<td>2. Vitazyme</td>
<td>20.006</td>
<td>30</td>
<td>14.40 a</td>
<td>5.25 (+57%)</td>
</tr>
</tbody>
</table>

Block P 0.1577
Treatment P 0.0034**
Model P 0.0099**
CV₀.1₀ 3.20%
LSD₀.1₀ 1.33 mg/kg of soil/hour

A great burst of CO₂ evolution resulted from Vitazyme application to this very sandy soil, showing that the product’s active agents aggressively stimulate soil microbiota.

Conclusions: This South African study on soil respiration shows that Vitazyme greatly increased (+57%) CO₂ evolution in a very sandy organically treated soil in Western Cape Province. The product’s active agents interacted with these bacteria, fungi, and other microbes to stimulate metabolic activity quite profoundly. Average conventionally treated Sandvold soils release from 3 to 5 mg/kg of soil/hr of CO₂, while the non-Vitazyme treated soils of this organic farm released much more than that — 9.15 mg/kg of soil/hr — and Vitazyme treatment boosted CO₂ release far above this higher level.