

# Guarantee® Organic

## Seaweed Extract

## Increases Cucumber, Zucchini, & Squash Yields

Guarantee® increases yield in cucumber, zucchini, acorn and butternut squash.

### Cucumber Test: October 2010

#### LOCATION/SCIENTISTS

Lucedale, Mississippi

Farm Crop Advisor: Kerry Johnson, PhD

#### ECONOMIC IMPACT

At an average of \$15.00 per box, the projected increase in value is (44 x \$15 = \$660 per acre)

#### TEST DESCRIPTION

'Intimidator' cucumbers were planted in early September in a sandy loam soil near Lucedale, MS. Spraying began on September 18, 2010 and continued at weekly intervals for 6 weeks at 1 pint in 50 gallons of water



per acre @ 250 psi. Harvest began on October 8, 2010 and continued until October 28, 2010. Plots consisted of 10 sections of 10 row feet for a total of 100 row feet per treatment. Plants were grown on raised beds with drip irrigation and black plastic mulch for row cover.

### HARVEST DATA REPRESENTS TREATED VS. UNTREATED

Treatment is the addition of foliar seaweed extract @ 1 pint per acre

| Pick # | Treated         |                 | Untreated    |            |
|--------|-----------------|-----------------|--------------|------------|
|        | weight (lbs)    | # fruit         | weight (lbs) | # fruit    |
| 1      | 72              | 98              | 48           | 72         |
| 2      | 74              | 133             | 81           | 166        |
| 3      | 70              | 133             | 58           | 124        |
| 4      | 42              | 68              | 28           | 48         |
| 5      | 28              | 50              | 10           | 17         |
| 6      | 25              | 52              | 30           | 56         |
| 7      | 73              | 123             | 68           | 122        |
| 8      | 42              | 83              | 53           | 115        |
| 9      | 110             | 189             | 95           | 165        |
|        | <b>536 (65)</b> | <b>929 (44)</b> | <b>471</b>   | <b>885</b> |

Table 1: First harvest picked on October 8, 2010 and the last was October 28, 2010

Numbers in bold ( ) represent the following: Weight = 65 more pounds of cucumbers in the treated plots.

On a per acre basis, the difference is as follows: 65 x 72 = 4,680 lbs

# Fruit harvested = 44 more fruit harvested from treated vs. untreated plots.

On a per acre basis, the difference is as follows: 44 x 72 = 3168 additional fruit per acre. Since there are typically 72 cucumbers per box, this translates to 44 more boxes per acre.

### Zucchini Test:

This test was conducted using 10 plants in 10 locations for a total of 100 plants per treatment. The spray schedule followed the same as that for cucumbers, once nearly weekly for a total of 6 applications beginning September 18, 2010 and concluding October 27, 2010.

#### ECONOMIC IMPACT

Zucchini-filled boxes weigh approximately 20 lbs. The projected per acre weight differences between the Ocean Organics seaweed extract-treated and untreated was (25,812 – 23,256 = 2,446 lbs). This would equal about 127 more boxes of squash per acre or a projected increase of \$1143 (127 boxes x \$9.00/box).

#### TEST DESCRIPTION

'Envy' Zucchini was the cultivar used for this test. Harvest began October 4, 2010 and concluded on October 28, 2010. Altogether, the crop was harvested 13 times in a 3-week harvest interval. Photo 1 depicts the effect of just two seaweed extract applications to the zucchini plants prior to harvest. Total yield was 9.0% (Table 2)



First-harvest of zucchini plots

## Acorn/Butternut Squash Test:

In a test completed in early September, 2010 both butternut and acorn squash plants were treated with seaweed extract just prior to first anthesis (flowering). The rate of application was one pint per acre 5 times and one quart per acre at the 6th application. Seaweed extract sprays were applied at weekly intervals in 50 gallons of water per acre at 250 psi. O2YS adjuvant was used at each application. One gallon of Multi-bloom fish fertilizer was applied at one gallon per acre at the 6th spray application. Acorn squash yield increased by 42% (Photo 2) and butternut yield increased by 38%.

## ECONOMIC IMPACT

On a per acre basis, there was a projected increase of 4,036 additional pounds of acorn squash. At 40 lbs per box there would be an additional 100 boxes. The price for acorn squash at harvest was \$15.00 per box. The yield increase for the use of seaweed extract in butternut squash was almost identical to those for acorn squash.

## REMARKS

It is important to note that Ocean Organics seaweed extract applications likely improve fruit set. In each test, increased yield was apparently the result of an increase in number of fruit rather than in size of fruit. It follows, then, that the goal of the applicator should be to initiate foliar applications prior to the onset of flowering and continue at relatively low rates throughout the flowering interval.

All applications were made in addition to the routine application of fertilizer. The only differences were those as stated in treatment descriptions.

## Harvest Fruit Number Comparison (acre basis) = 6,696 more fruit in treated vs. untreated

| Treated (with seaweed extract) |               |                | Untreated         |                     |                |
|--------------------------------|---------------|----------------|-------------------|---------------------|----------------|
| weight                         | # fruit       | avg. size      | weight            | # fruit             | avg. size      |
| 23.5                           | 45            |                | 8.5               | 17                  |                |
| 11.5                           | 27            |                | 9.5               | 20                  |                |
| 22.5                           | 52            |                | 20                | 48                  |                |
| 30                             | 58            |                | 34                | 60                  |                |
| 37                             | 72            |                | 37                | 68                  |                |
| 24                             | 41            |                | 22                | 40                  |                |
| 25                             | 49            |                | 22                | 43                  |                |
| 28                             | 56            |                | 23                | 42                  |                |
| 22                             | 47            |                | 18                | 31                  |                |
| 25                             | 49            |                | 30                | 52                  |                |
| 53                             | 73            |                | 38                | 62                  |                |
| 43                             | 78            |                | 46                | 74                  |                |
| 14                             | 35            |                | 15                | 32                  |                |
| <b>358.5</b>                   | <b>682</b>    |                | <b>323</b>        | <b>589</b>          |                |
| <b>X 72 =</b>                  | <b>X72 =</b>  | <b>8.41 oz</b> | <b>X72 =</b>      | <b>X72 = 42,408</b> | <b>8.77 oz</b> |
| <b>25,812 lbs</b>              | <b>49,104</b> |                | <b>23,256 lbs</b> |                     |                |

Table 2: Harvest Weight Comparison (acre basis) = 25,812 – 23,256 = 2,556 lbs more in treated vs. untreated.



Untreated (left) and Treated (right)

Ocean Organics is a manufacturer of high performance, scientifically proven seaplant-extract based biostimulants, plant growth materials and granular fertilizers. Our state-of-the-art products contain unique and proprietary constituents. Founded in 1977, we are the developers and manufacturers of the Emerald Isle foliar fertilizers and biostimulants, now owned and distributed to professional turf and ornamental markets by Lebanon Turf Products. Our materials have been tested in over 25 universities and independent laboratories.