

## Detonation (RGA) Studies

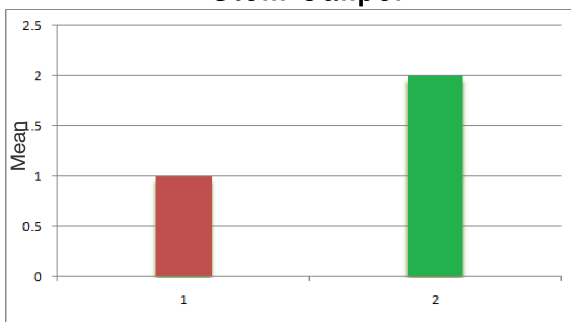
### Case History: Detonation on Tomato Crop Yield

#### South Carolina Tomato Farm



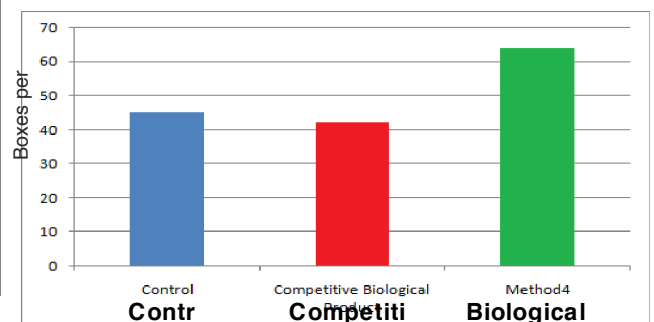
Tomatoes treated with **Detonation (RGA)** at a South Carolina Farm had significantly larger stem diameter and significant yield increases per acre over grower standard tomatoes. As can be seen below, the stem diameter was twice the size over control plants. Yield study results indicated a 36% increase over control and 50% increase over a competitive biological program.

**Stem Caliper**



Treatment 2 = RGA Treated

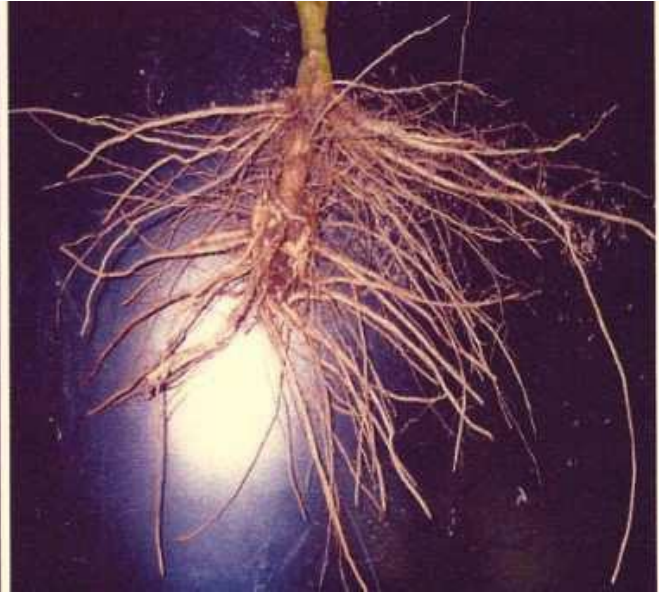
**Yield Data: Test Picking**



## Rapid Growth Activator



**RGA Treated Roots**



**Grower Control Roots**

**Analyses of the roots showed that Detonation (RGA) treated tomatoes had a much more fibrous root indicating active root growth and enhanced root hair development over the control tomatoes.**

# Tomato and Pepper Study on Florida Farm

## Summary

### Objective

To reduce or eliminate chemical disease control agents on a vegetable production farm. Crops studied included tomatoes, pepper, and pickles.

### Methods

Suspension of gram negative and gram positive antibiotic and or suppressive bacteria and fungal organisms were used as soil drenches, topical and foliar sprays at weekly intervals two (2) after planting. The bacteria, primarily *bacillus sp.*, the fungal organisms (combination of *trichoderma* and *endo mycorrhzae*) were applied at the rates of 6 oz vegetative, 6 oz spore form, and 6 oz nutrient per acre. The fungal organisms were applied once at a rate of 1lb per acre via hand inoculation. The bacteria were applied as topical sprays and root injections. Out of 2-1/2 acre grids that were selected at random, 3 plots were chosen. **Plot #1** (one half of growers standard rate and above inocula program). **Plot #2** (growers standard rate alternated at 7 day intervals with above inocula program). **Plot #3** (above inocula program-biological controls only).

### Results

Due to unseasonably dry weather conditions, soil disease pressure was low. However, because of very high winds (30-40 knots) over a 10-14 day period, conditions for foliar disease pressure in young plants were high. There were no significant disease control differences seen among the various plots. **Plot #3** did **EQUALLY** as well as **Plot #1** or **Plot #2**. This can be seen in *Exhibit A*. Biological controls suppressed disease as well as full rate chemicals

Exhibit A: Level of Disease Suppression in Tomatoes

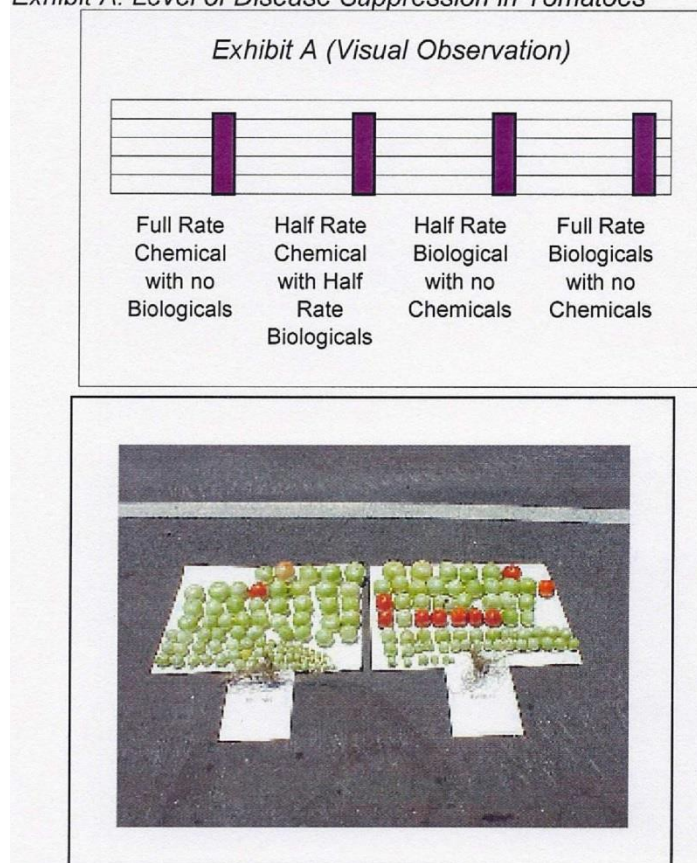
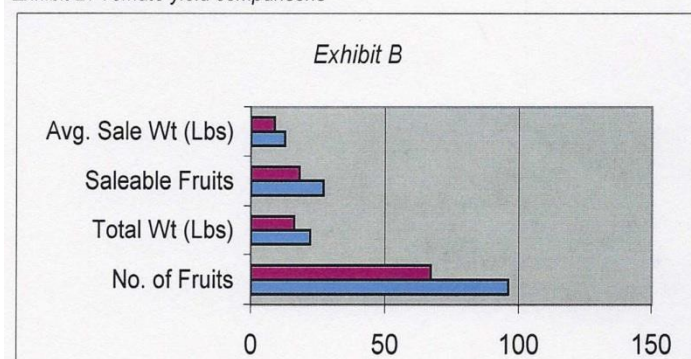


Exhibit B: Tomato yield comparisons



	No. of Fruits	Total Weight (lbs)	Saleable Fruits	Avg. Sale Weight (lbs)
<b>Control</b>	<b>67</b>	<b>16</b>	<b>18</b>	<b>8.7</b>





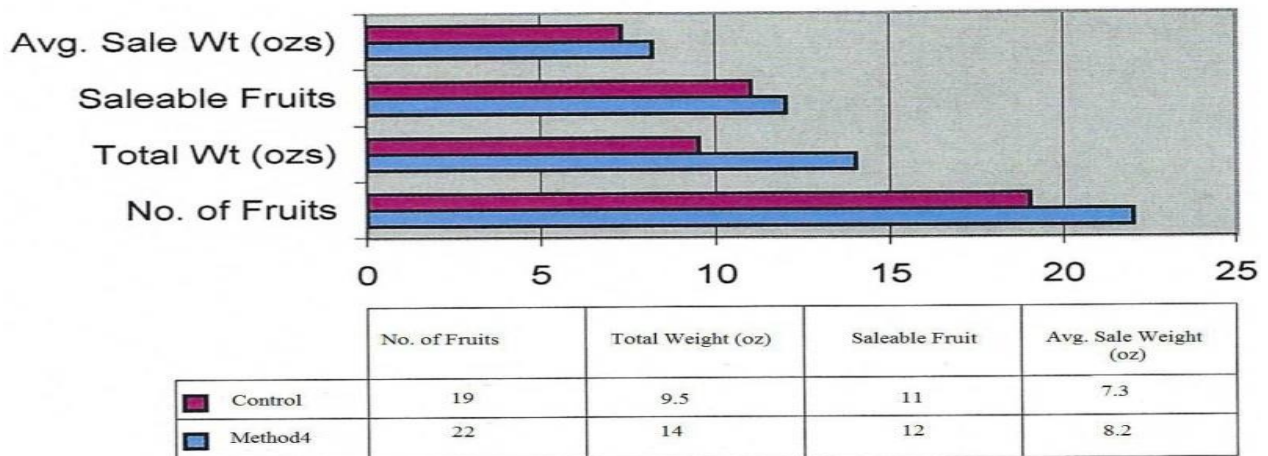
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and half rate chemicals  
with the inocula  
program.

## Tomato And Pepper Study On Florida Farm

The fungal organisms were applied once at the rate of 1 lb. per acre via hand inoculation. The bacteria were applied as topical sprays and root injections. Three (3) rows were selected at random – 2 grower standard rows, and 1 inoculated row. Ten (10) grower standard plants were randomly selected from each of the grower standard rows (2 & 3). The inoculated rows were between the control rows.

Exhibit C



### Conclusion

Detonation treated tomato plants showed an increase in fruit per set of 44% over grower standard and a 40% increase in weight of Detonation treated vs. grower standard. Marketable fruit increased by 54% with a marketable weight increase of 44%. (Refer to Exhibit B for tomato yield comparisons.) Detonation treated pepper plants showed 16% increase with a 50% increase in weight of Detonation treated over grower's standard. The Marketable fruit increase was a 10% increase with a marketable increase of 13%. Refer to Exhibit C for pepper yield comparison.

### Observations

Inoculated plants demonstrated greater mass branching and density in both crown and root. Senescence appeared to be delayed with smaller fruit in the control turning color earlier. Inoculated fruit were more uniform than grower standard. Although soil borne disease pressure was low that year, Detonation had 2.5 acre plots where chemical



controls were reduced by half or eliminated completely with minimal visible difference in disease.

**CitroBio, Inc.**

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