

## BiOWiSH® Crop Technology

### Tomatoes Grown in Commercial Nursery Center for Applied Horticultural Research California, USA

#### Background

The Center for Applied Horticultural Research (CfAHR) undertook a research project to look at the impact of BiOWiSH® Crop on tomato plants grown in a commercial nursery.

The CfAHR is a non-profit organization that researches issues facing the nursery and floriculture industries. Based in Vista, California, the CfAHR aims to answer problems commercial growers and the green industry deal with on a daily basis.

#### Objectives

The CfAHR evaluated the ability of BiOWiSH® Crop to improve plant growth and shorten the time it takes for 'Beefsteak' tomato plants to mature under commercial nursery conditions.

#### Solution

BiOWiSH® Crop was chosen because of its proven ability to increase micronutrient uptake in plants, improve plant vigor, and stimulate microbial activity in the soil. Growers, distributors, and institutions have reported that using BiOWiSH® Crop improves yields and fruit quality, adding directly to the farmer's bottom line

#### Implementation Program

The independent study was conducted at the CfAHR's climate controlled greenhouse in California. Three groups of tomato 'Beefsteak' seeds were planted. The control group received a traditional fertilizer combination. The second group received the traditional fertilizer combination along with BiOWiSH® Crop. The third group received 80% of the traditional fertilizer combination along with BiOWiSH® Crop.

### BiOWiSH® Crop



- Improves crop yields
- Increases nutrient availability
- Enhances root development
- Improves plant vigor
- Stimulates microbial activity in the soil
- Improves soil productivity

#### Available Sizes

- 100g/3.5oz
- 1kg/2.2lbs
- 5kg/11lbs
- 10kg/22lbs

## Results

After five weeks, 94% of the plants receiving BiOWiSH® Crop plus 100% fertilizer and more than 83% of the plants receiving BiOWiSH® Crop plus 80% fertilizer were ready for transplant. In the control group, just 66% of the plants were ready for transplanting.



Control

80% Fertilizer +  
BiOWiSH® Crop

100% Fertilizer +  
BiOWiSH® Crop

In addition to the shorter growing times, plants treated with BiOWiSH® Crop were taller, wider and had higher growth index and stem diameter than plants receiving fertilizer only; they also had higher shoot fresh weight than plants receiving fertilizer only.

Treatment	Height (cm)	D1 (cm)	D2 (cm)	Growth Index	Stem Diameter (cm)
Control	12.4	23.2	19.0	16.8	4.6
80% Fertilizer + BiOWiSH® Crop	15.3	25.0	19.3	18.7	4.9
100% Fertilizer + BiOWiSH® Crop	15.5	26.8	22.3	20.0	5.0

## Conclusion

The CfAHR study proves that BiOWiSH® Crop increases growers' profits and that the cost of implementing BiOWiSH® Crop is offset by the high return on investment. The group receiving 100% fertilizer plus BiOWiSH® Crop proved to be the best program overall with an additional annual gross profit of \$49,121 per acre over the control group. On the other hand, the group receiving 80% fertilizer plus BiOWiSH® Crop had the same cost as the control group but generated an additional gross profit of \$35,640 per acre.

Treatment	% Ready to Transplant	Estimated Rotations per year	Annual gross profit per acre over Control*
Control	66.7	8.5	\$0.00
80% Fertilizer + BiOWiSH® Crop	83.3	9.5	\$35,640
100% Fertilizer + BiOWiSH® Crop	94.4	10.5	\$49,121

\*Annual gross profit based on California price per plant, average plant population per acre, and percent ready to transplant. Note: The number of rotations is for tomato plants evaluated for transplant maturity, not for retail shipping size which requires less maturity.



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