

Hydroponics

Tomato Trial, CropKing, USA

Background

BiOWiSH Technologies partnered with distributor CropKing Inc to demonstrate the benefits of BiOWiSH™-Hydroponic on tomato crops. Testing was done over 22 weeks at CropKing's research greenhouse in Lodi, Ohio. Previous testing by CropKing has shown successes using BiOWiSH™-Hydroponic in lettuce, cucumber and pepper production. CropKing has been in the controlled environment agriculture and hydroponics businesses for 30 years. They have clients in North America, Europe, Asia, and the Caribbean.



Hydroponic tomato production is a growing industry in the U.S and around the world as the demand for year-round freshly grown tomatoes increases. Greenhouse tomatoes are a multi-million dollar industry in the U.S, and account for about 40 percent of fresh tomatoes sold in grocery stores each year.

With the increasing demand growers are looking for ways to expand their production. Typically this would require a large investment in additional growing space. BiOWiSH™ Hydroponic offers a low cost alternative to increase production without increasing square footage.



BiOWiSH™ Hydroponic

- Improves yield
- Reduces growth time
- Improves nutrient availability
- Improves consistency across harvest
- Improves root development
- Better plant health (vigor)
- Improves budding
- Longevity of flowering
- Storage stability

Available Sizes

- 100g/3.5oz
- 1kg/2.2lb



Objectives

The main goal of this case study was to determine the effectiveness of BiOWiSH™ Hydroponic and its ability to increase yields and fruit quality in hydroponically grown tomatoes.

Solution

BiOWiSH™ Hydroponic was chosen for the trials because of demonstrated efficacy in CropKing's greenhouse environment.

Developed for the hydroponics industry, BiOWiSH™ Hydroponic is a revolutionary water treatment solution that enhances microbial activity in crop production, helping to increase nutrient availability and improve plant vigor. It also prevents sludge build-up and problematic scaling in dripper lines, and Nutrient Film Technique (NFT) channel. 100% natural and non-toxic, BiOWiSH™ Hydroponic is safe for everyday use in a very diverse range of hydroponic applications.

Implementation Program

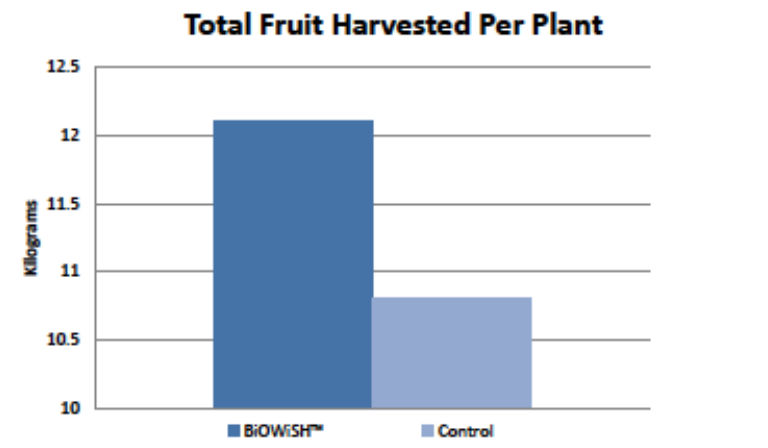
BiOWiSH™ Hydroponic was applied with each irrigation event at 10 mg/L for 22 weeks. Every 20 minutes, the plants were irrigated for 2:15 minutes. The irrigation cycle starts 30 minutes after sunrise and stops at sunset.

BiOWiSH™ Hydroponic can be activated in water or nutrient solution allowing for easy delivery with your current system and fertility program.

CropKing uses a hydroponic Dutch Bucket system with a perlite media. BiOWiSH™ Hydroponic can be used with all types of growing media.

Results

BiOWiSH™ treated plants set fruit earlier, appeared healthier and produced higher yields than plants in the control group. After the 22 weeks, plants treated with BiOWiSH™-Hydroponic, on average, had produced more than 12 kg of fruit. The control plants had produced less than 11 kg of fruit. Resulting in an average increase in the production weight for the BiOWiSH™ treated plants of more than 10%.



Additionally, the brix measurements in the BiOWiSH™ group were 7.5% higher than the traditional management practice group. Brix is a measurement of sugar content and tied to improved taste in fruits and vegetables.

BiOWiSH™ Hydroponic Tomato Program Advantages			
Yield Increase	Brix Increase	Non-BiOWiSH™ nutrient increase per kg of fruit	Water increase per kg of fruit
10.3%	7.5%	0%	0%

Since the same nutrients and water are used, the only additional cost associated with implementing BiOWiSH™ Hydroponic is the cost of the actual product, which is about \$0.42 per plant. The increase in labor costs is negligible because BiOWiSH™ is added straight to the system. Using BiOWiSH™ doesn't require special equipment and it is compatible with all Hydroponic systems.

On average BiOWiSH™ increased the amount of fruit each plant produced by 1.24kg. Using an average selling price of \$3.22/kg of tomatoes, BiOWiSH™ increased the revenue per plant by \$3.99. With an increase in net profit of \$3.57 per plant or a return on investment of 852% on the addition of BiOWiSH™ Hydroponic.

Economics	
Cost of BiOWiSH™ Hydroponic per plant	\$0.42
Value per kg of tomato	\$3.22
Amount of fruit increase per plant (kg)	+ 1.24
Net profit per plant	\$3.57
Return on Investment	+ 852%

Conclusion

BiOWiSH™ Hydroponic offers tomato growers the opportunity to produce more high quality fruit, allowing growers to meet growing demand and increase profitability without expanding infrastructures. The low input cost, increased production with current water usage, compatibility with current systems and fertility programs, and extraordinary return on investment are reasons why nearly 100% of growers who have tried BiOWiSH™ Hydroponic continue to use the product as part of their daily management practices.

Recent testing using BiOWiSH™ on broad acre tomato plants also had impressive results. An independent third party research trial in California performed on irrigated tomatoes compared plants grown with BiOWiSH™ verses the most common best management practice. The plants treated with BiOWiSH™ showed a yield increase of more than 10%, as well as increased levels of key nutrients and increased brix levels.

Contact

BiOWiSH Technologies

Tel: +1 312 572 6700

Email: agronomy@biowishtech.com

Biological help for the human race



www.biowishtech.com

BiOWiSH™ is a registered trademark of BiOWiSH Technologies Inc

CS40AGJA12US

Biological Help for the Human Race™