

BiOWiSH® Crop Technology

Improving Hydroponic Lettuce Production at Glenorie Hydroponics farm in Australia

Background

BiOWiSH® was tested by Joe D'anastasi at his Glenorie Hydroponics lettuce farm in Australia.

The farm consists of seven greenhouses, 246 ft by 65 ft. Many varieties of lettuce, including Green and Red Butter, are grown on 59 ft long Nutrient Film Technique (NFT) tables. Each greenhouse has up to 30 NFT tables which in total can produce up to 27,000 heads of lettuce.

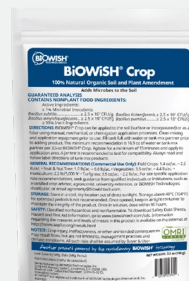
A lettuce growing cycle takes up to 6 weeks, depending on season and weather conditions. Minimum lettuce weight to market is 6 oz.

The NFT systems are irrigated with water circulated through a 1 x 1056 gal tank per greenhouse.



Green butter lettuce on Nutrient Film Technique (NFT) growing system

BiOWiSH® Crop



- Optimizes yield potential
- Increases nutrient availability
- Enhances root development
- Improves plant vigor
- Enhances native microbial activity in the soil
- Improves soil productivity

Available Sizes

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

Existing Hydroponic Nutrient System

The following batches of stock solution are mixed daily and separately with 52 gal of water on site:

Batch 1

- Pot Nitrate
- Magnesium
- MKP
- Trace

Batch 2

- Calcium Nitrate
- Iron Chelate

Then, around 3 gal of each batch is added daily to each of the 7 x 1056 gal irrigation tanks to maintain an electrical conductivity (EC) of approximately 1.0.

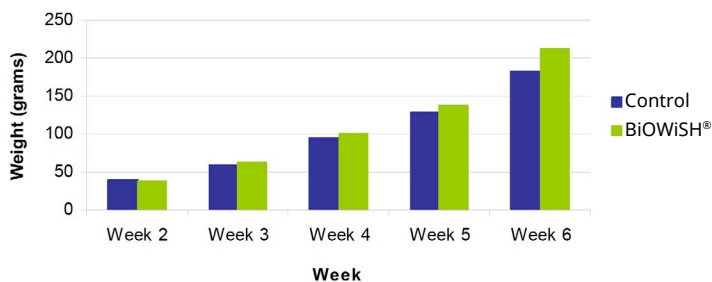
Implementation Program

For six weeks, BiOWiSH® was added directly into each irrigation tank at 5 ppm, or 0.7 oz per day/per greenhouse. Total product required per day is 4 oz. The total cost of each fully grown lettuce is approximately \$0.004.

Growth Observations

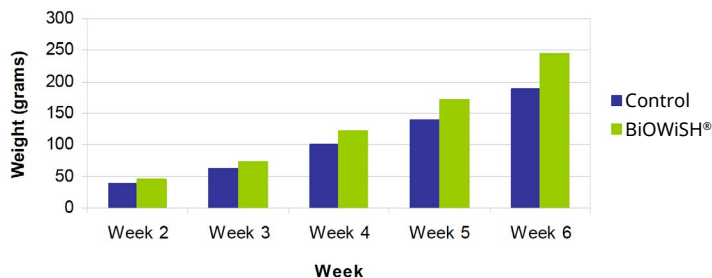
Lettuce in four greenhouses (two Treated and two Control greenhouses) were weighed on a regular basis throughout their growth cycle, in samples of 10 with the average weight shown on the graphs below.

Red Butter Lettuce



BiOWiSH® treated lettuce was 30% heavier at harvest

Green Butter Lettuce



BiOWiSH® treated lettuce was 17% heavier at harvest

Implementation Outcomes

BiOWiSH® treated lettuces were:

- Heavier
- Healthier with lower mortality
- More vibrant
- Higher in sugar content
- Thicker and more consistent
- Harvested more regularly



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Contact us:
agronomy@biowishtech.com
+1 312 572 6700
biowishtech.com

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