

# WHIPPLE

## EFFECT

Jack Whipple

Whipple Effect - Founder, CEO



# Water = Plant Essential



## ENERGY BALANCE

Energy is required for a plant to grow strong and healthy. The 5 essential controls to create this energy balance are **light, water, temperature, humidity, and CO<sub>2</sub>**. The result of these 5 factors being in harmony is a healthy plant that will produce maximized levels of fruits or flowers.

The chemical equation for photosynthesis shows you just how simple this is on a fundamental level.

## CHEMICAL EQUATION FOR PHOTOSYNTHESIS

(page 52 Plant Empowerment)

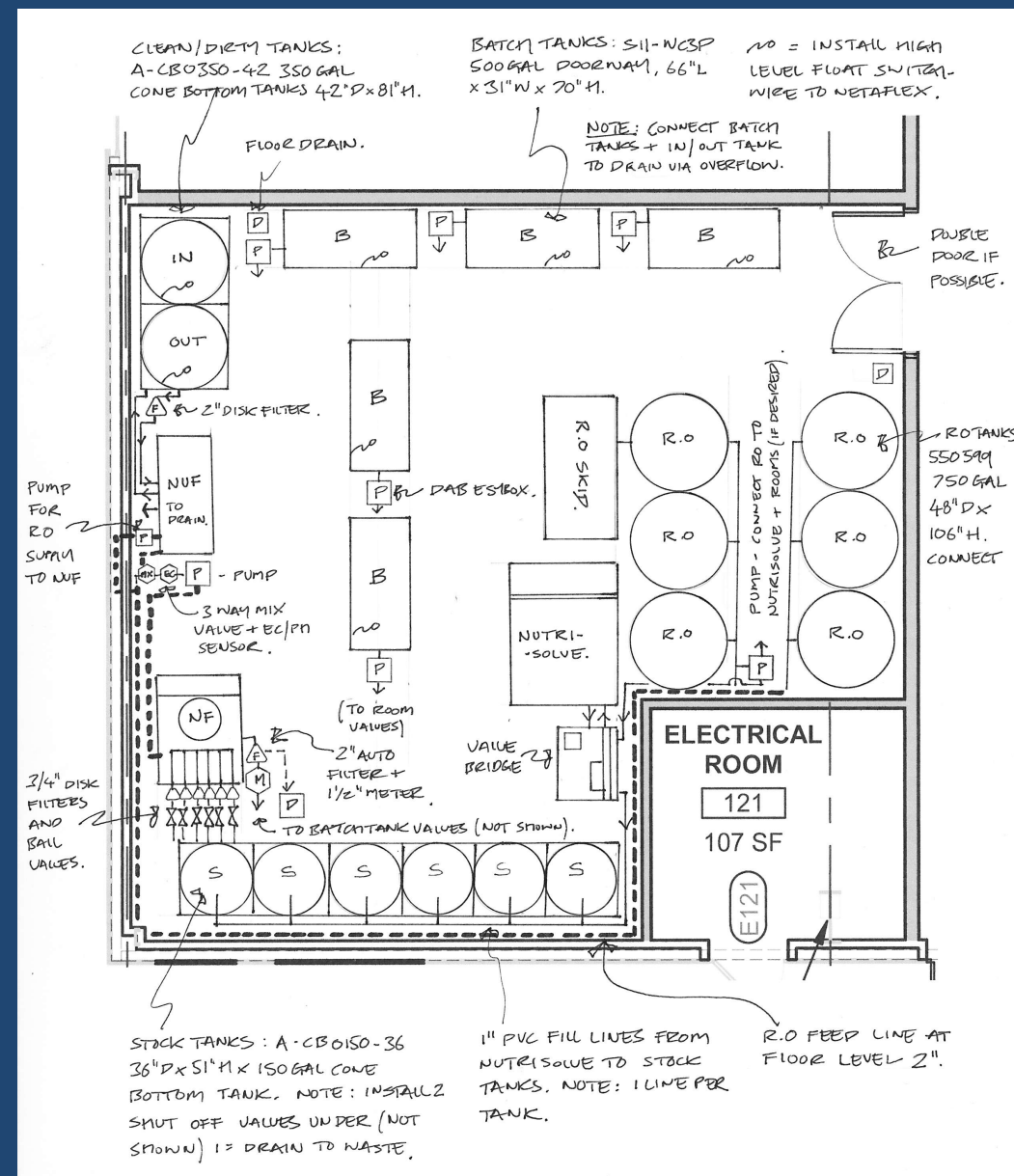


(Carbon dioxide + water + photon energy → oxygen + sugars)



# Irrigation Design

- Backbone of facility
- Filter water
- Inject nutrients
- Capture runoff
- Prevent disease
- Clean system



# Water Filtration



**Reverse Osmosis (R/O)**

- 0-10 PPM, 40-60% runoff



**Deionized Filtration**

- 40-50 PPM, no runoff



**Carbon Filtration**

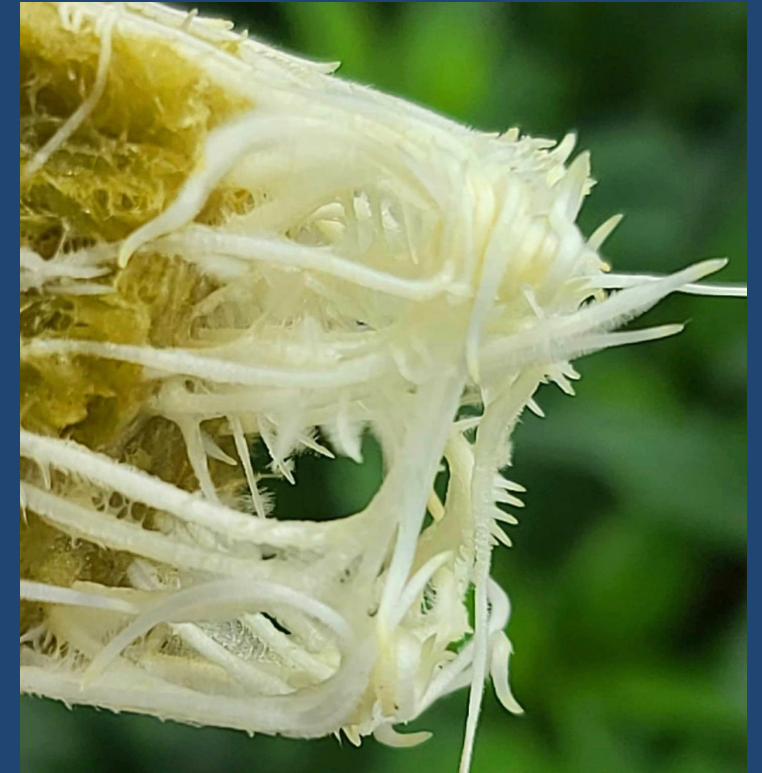
- Little change in PPM, no runoff



# Dissolved Oxygen

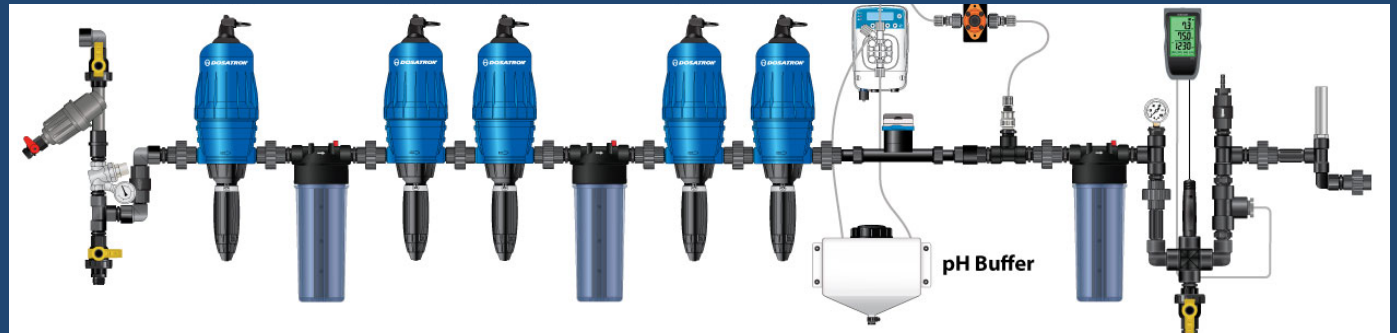


- **O2 Toob from Biotherm**
- **Increased root mass**
- **Promotes aerobic bacteria**
- **Prevents disease**
- **Healthy vigorous growth**



# Fertigation Systems

- **Automated**
- **Accurate: removes human error**
- **Redundancy: batch tanks**
- **Cleaning and maintenance**
- **Nutrient selection**





# Drip Irrigation

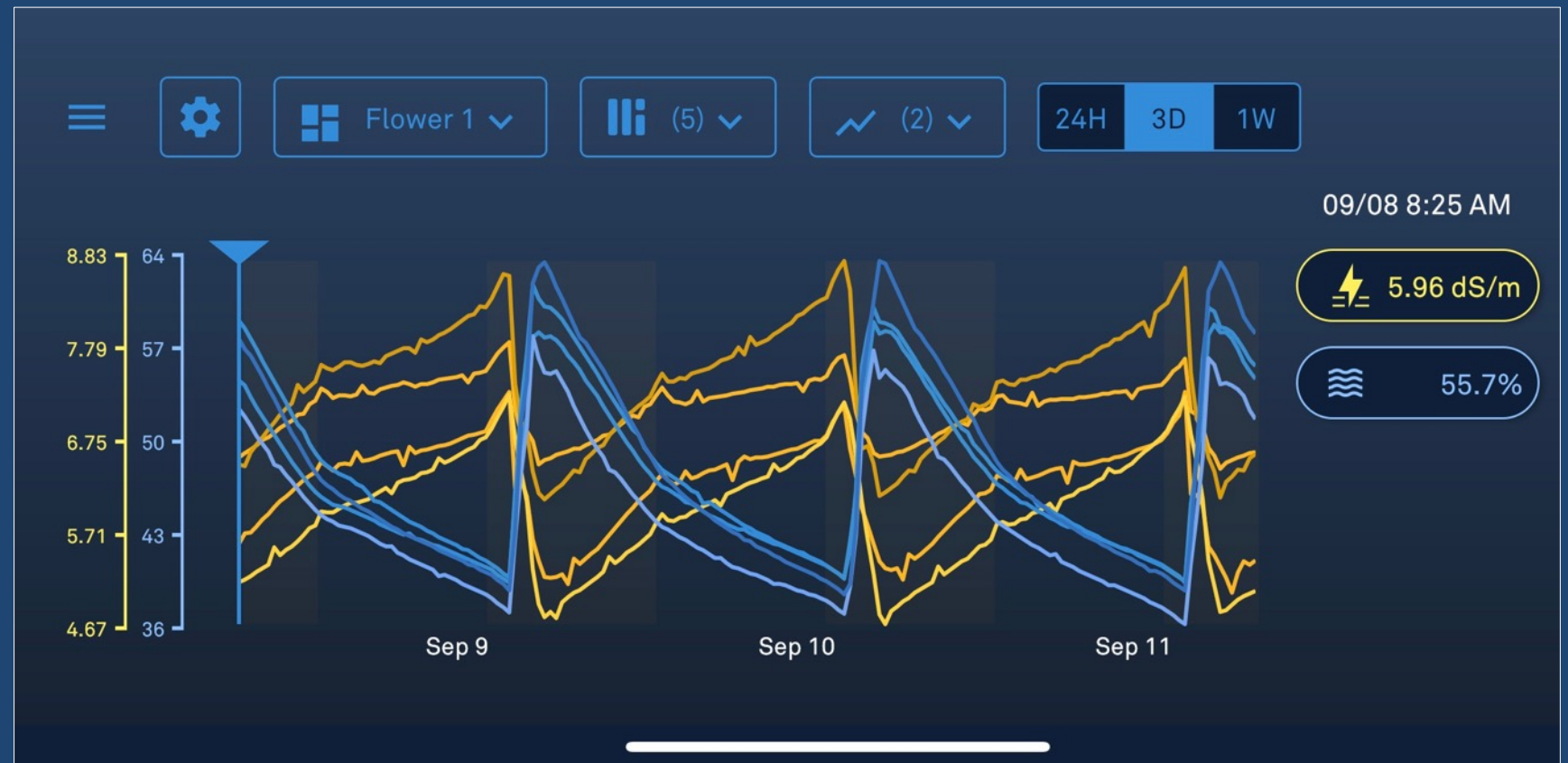


- Pressure regulated emitters
- .3-.5 GPH
- 100 micron filters
- Even water distribution
- Controlled irrigation strategy



# Crop Steering - AROYA

- EC
- Water Content
- Temperature
- Humidity
- VPD





# Runoff Water



**Nutrient Ultra Filtration (NUF)**

- Recycle nutrients



**Commercial Evaporator**

- Evaporate runoff water



**Vacuum Truck**

- Send runoff to treatment plant

# Contact Information

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Instagram: [@whipple.effect](#)

Website: [whippleeffect.com](#)

Email: [jack@whippleeffect.com](mailto:jack@whippleeffect.com)



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