Nanobubbles for Crop Irrigation

PRODUCT OVERVIEW

Nanobubbles—For Enhanced Growth and Yields

Oxygen plays a vital role in plant respiration—a process used to generate energy and growth. Maximizing the oxygen saturation in water helps improve (feeder) root structure and activate beneficial microbes in the rhizosphere. More feeder roots result in better nutrition uptake, increased growth and overall improvement in plant health.

In nature, a raindrop accumulates oxygen from the air as it travels downwards. As it penetrates the soil, it delivers a healthy dose of growth-promoting oxygen to a plant’s root system. Groundwater, by comparison, has very low levels of oxygen and when used for irrigation, does not vigorously enhance plant growth in the same way as rainwater.

An effective and practical delivery system of increasing the oxygen saturation in irrigation water naturally enhances plant growth. Adding dissolve oxygen alone is not an effective approach because it can be quickly consumed by the biofilm in piping. However, the addition of oxygen nanobubbles overcomes the wasting of dissolved oxygen in the distribution system, and because nanobubbles have no buoyancy, they can remain stable and suspended in the water for prolonged periods of time even in high temperatures. The nanobubbles transfer their oxygen to the water when the dissolve oxygen drops below an optimum level.

BENEFITS

- 20x Higher Oxygen Transfer/Foot of Water
- Super Saturation Oxygen Enrichment
- Stable Dissolve Oxygen Levels
- Warm Water Growth Enhancement
- Improved Root Development
- Reduced Fungal Infections
- Increased Plant Vigor & Growth
- Increased Yields & Profits

FEATURES

- Superior Oxygen Transfer Efficiency
- No Moving Parts
- Passes Solids up to 12 mm
- Self-Cleaning
- Flexible Air Input
- Adjustable Air-to-Water Ratios
- Models from 10 to 1000 gpm
- Low Energy Usage
- Pre-Packaged & Easy to Install
- Quiet Operation
- Optional In-Line Installation
- Optional Ozone Integration

TECHNOLOGY

The Patent-pending nanobubble generator is an essential compliment to any irrigation system. Nanobubbles alter the composition of the irrigation water in a two-phase oxygen transfer process to enhance the growth-promotion properties of water. The generators are typically installed in-line, allowing the system to infuse trillions of oxygen nanobubbles into the passing steam. This mechanism rapidly shears off dissolve oxygen into the water and saturates it with oxygen in both nanobubble and dissolved form. This combination is highly effective at delivering oxygen through long distances in irrigation lines. Finally, the nanobubble system can also be equipped with ozone to help treat biofilm build-up in piping thus eliminating the need for additional chemicals.