

NANOBUBBLE TECHNOLOGY HELPS BIG TEX URBAN FARMS DONATE MORE TO LOCAL COMMUNITY WITH OXYGEN NANOBUBBLES

Since its establishment in 1886, the State Fair of Texas has promoted Texas agriculture, education, and community involvement through quality entertainment in a family-friendly environment. In 2016, the State Fair of Texas introduced Big Tex Urban Farms, a revolutionary, mobile agriculture system in the heart of Fair Park. As a testing ground for the project, the Fair used an 80 x 80' area in a parking lot and set up 500 wooden raised dirt beds on slotted construction pallets. Today, the project has evolved into a hydroponic-based greenhouse, with a deep-water culture system that produces almost 15,000 lbs of fresh produce that is donated to local Dallas area organizations.

Despite its rapid growth, Big Tex Urban Farms was looking for ways to grow more high-quality produce all year round and to showcase effective new technologies in an open forum for the public. Hot Texas summer months and the resulting warm waters created the biggest growing challenges for Big Tex. After evaluating several options, they chose Moleaer's nanobubble generator as the preferred technology to grow in high-temperature environment and take their greenhouse to the next level. The nanobubble generator boosts the dissolved oxygen (DO) content of deep-water culture through the hyper-efficient injection of oxygen nanobubbles. When plant roots are exposed to oxygen-enriched nanobubbles combined with elevated dissolved oxygen content, they can absorb nutrients more effectively, translating into higher yields and ultimately, more food for the local community.

Client:

Big Tex Urban Farms

Type:

Deep Water Culture

Unit Type:

25 XTB

Installed:

June 21, 2018

Benefits:

325% Dissolved Oxygen Increase

24%% Faster Cultivation Time

Tank Size:

10,000 gallons



Drew Demler of Big Tex Urban Farms showing off the white, nanobubble-infused roots of his latest batch of butter lettuce.



Big Tex Urban Farms grows a variety of produce and donates it all to the local South Dallas community.

When Big Tex Urban Farms lost power, temperatures in the greenhouse soared above 110 degrees Fahrenheit. The nanobubble-infused water was able to mitigate the effects. Nanobubbles are unique because they are neutrally buoyant and remain suspended in water for long periods of time. In this capacity, they act like a battery, maintaining dissolved oxygen in the water beyond the point of aeration. When the farm lost power, the nanobubbles saved the crop by keeping the plants healthy until power was restored. The tank that did not incorporate a nanobubble generator experienced significant losses, demonstrating a unique benefit of nanobubbles in high-temperature applications.

"Big Tex Urban Farms State Fair Project is all about growing, harvesting, and donating produce. We give everything that we grow away to the local community," said Drew Demler, Director of Horticulture at the State Fair of Texas. "We are trying to feed people and we think that the Moleaer nanobubble system is going to be a big part of how we can get more fresh produce to South Dallas."

After installing the Moleaer nanobubble generator, Big Tex Urban Farms saw 30ppm of DO in their water, resulting in a 24% faster cultivation time to reach their market weight of 6 ounces.

A video about the project is also available on Moleaer's website and the YouTube channel.

www.moleaer.com

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