

GEBROEDERS KOOT IMPLEMENTS INNOVATIVE NANOBUBBLE SOLUTION AT HYDROPONIC TOMATO FACILITY

Gebroeders Koot, a member of the Prominent Group, is a hydroponic tomato grower located in Poeldijk, in the Westland region of the Netherlands known for the Briosio variety. They own a five-hectare glass greenhouse with two hectares under lighting. Owner Geert Koot grew up in the greenhouse industry and has built up his knowledge through decades of growing. A passionate grower dedicated to producing the highest quality tomatoes, he continues to seek out new and innovative technology. Geert turned to Moleaer's nanobubble systems after hearing about their successful projects from fellow growers.

The key to Moleaer's technology lies in the bubble itself. A nanobubble is less than 200nm in diameter. At this size, the bubbles exhibit extraordinary properties including neutral buoyancy, a high negative surface charge and a strong oxidation potential. As water passes through Moleaer's nanobubble technology, the generator injects two forms of oxygen: dissolved oxygen (DO) to elevate the water DO levels with over 90% transfer efficiency and oxygen nanobubbles. In combination, these two forms are perfect for rapidly elevating and maintaining dissolved oxygen in a body of water. This means that growers can use less oxygen to rapidly increase the DO in the irrigation water to achieve superior root zone oxygenation. Furthermore, the oxidation properties of oxygen nanobubbles are proving to be an effective, natural defence against outbreaks of pathogens and algae.

Client:

Gebroeders Koot

Location:

Poeldijk, Netherlands

Type:

Tomato Grower
Drip Irrigation

Unit Type:

Bloom 50 IQ
Bloom 150 IQ

Benefits:

Increased DO 250%
Pathogen Control of Drain Water
Maintain healthy roots in summer



The Bloom nanobubble generator quietly and efficiently supersaturates irrigation water with dissolved oxygen.



The Bloom is compact and easily integrates with the existing irrigation tank.



The plant root systems at Gebr. Koot are healthy and strong due to the elevated dissolved oxygen levels.

"Consistently growing good quality tomatoes means playing a top sporting match every day," says Koot. "Like great athletes, the plants must be in excellent condition in order to deliver the best possible quality tomatoes with the highest possible yields. We already know many of the ingredients required for optimal growing. I have always considered oxygen to be a key ingredient for success. Good oxygen levels in the substrate leads to healthy roots which leads to healthy plants and strong yields. When Moleaer explained to me the unique properties of oxygen nanobubbles and showed me what they had achieved in many different crops, I was very enthusiastic to start a pilot."

Royal Brinkman, Moleaer's partner, installed two Moleaer Bloom nanobubble generators in the greenhouse. One of the units recirculates the water in the clean water tank and the other unit is installed on the drain tank. The nanobubble generators enrich the water from the tank with billions of oxygen nanobubbles. The moment the units were switched on, Gebroeders Koot saw the DO level of both tanks climb rapidly, achieving levels they had never seen in decades of growing.

Michiel de Jong from Moleaer states, "Installing the nanobubble generators next to the water tanks at Gebr. Koot is a perfect example of how best to install our technology for almost any hydroponic greenhouse. Our nanobubble generators recirculate water from a tank and inject oxygen nanobubbles based on the oxygen requirements of the crop."

Geert adds, "My EC values have been very stable throughout the entire summer which hasn't always been possible. That stability and consistency is very important. Peaks and valleys in your EC can lead to growth losses which can reduce your yield by a few percentage points. For the last couple of years, I have also been adding beneficial bacteria and fungi to improve the biology inside the substrate and treat against crazy roots. However, since adding the Moleaer systems, I have also stopped applying the bacteria and fungi since the higher oxygen levels inside the substrate are naturally promoting that biology by itself."

Geert's crop has stayed healthy through the summer and is thrilled with the results so far. Before the pilot, the DO levels in the water varied anywhere between 20 and 75% saturation. With Moleaer's nanobubble generators, the DO always exceeds 200% saturation.

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