



Improving Rose Cultivation with Nanobubbles

Meewisse Roses

Meewisse Roses is a greenhouse based in the Netherlands, specializing in growing premium roses in their state-of-the-art growing facility. With 37 years of experience, they produce up to 13 million roses per year.

The Challenge

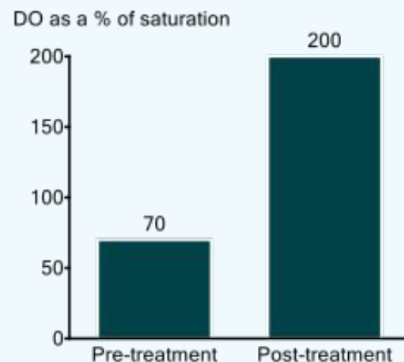
Cultivating roses in rockwool is especially difficult due to the rose being a perennial shrub. The rockwool mat will often be completely encased and compacted in roots preventing oxygen from spreading to the lower parts of the mat. Improving aeration throughout the rockwool mats could lead to improved plant and root health.

Our Solution

Meewisse Roses installed Moleaer's Neo 150 nanobubble generator to increase and maintain the dissolved oxygen levels throughout their drip irrigation system. The Neo is capable of cost-effectively injecting oxygen into their irrigation water while retaining precise control of the dissolved oxygen levels. Throughout their tests, the Neo maintained up to 35 to 40 mg/l dissolved oxygen levels (DO).

Results

- Notable reductions in Fusarium and Pythium levels
- Improved calcium uptake



Key Findings

Oxygen nanobubbles contributed to better water quality, suppression of plant pathogens, and better nutrient absorption. Measurements showed that the water from the drippers contained more than 200% dissolved oxygen (100% above saturation), up from 70% of saturation without nanobubbles.

From Our Customers

"The oxygen level in the water was much higher when the nanobubbles generator was turned on, and pathogen analyses of the water showed increasingly lower amounts of Fusarium and Pythium. Not that those values were high to begin with, since we also use a UV disinfectant, but the nanobubbles still made quite a big difference. Moleaer also had weekly plant sap analysis carried out, which showed that calcium uptake was higher in the weeks that we applied oxygen enrichment, and lower when the nanobubble generator was switched off."

"The cultivation of a rose crop on rockwool is special in a way, because the rose is a perennial shrub. That means the slab will often get completely covered with roots and become more compacted, causing less aeration into the lower parts of the mat. The amount of oxygen that can be delivered through the irrigation water thus becomes particularly important. I was rather curious to see if we could improve this with the Moleaer Nanobubble Generator. For me, it's about the complete picture that I get from all this data: that nanobubbles contribute to healthier water and a root zone that's richer in dissolved oxygen, which contributes positively to cultivation. It's difficult to see it in the crop directly, but overall, higher oxygen levels, cleaner irrigation lines and better calcium uptake, convinced me to continue with the Moleaer unit."

- Tom Meewisse, Owner