



CHERRIES: NANOBUBBLES IMPROVE SOIL TO COMBAT DROUGHT CONDITIONS

Client Case Study: Noble Fruit

Crop:	Unit Type:	Flow:	Results:
Cherries	NEO with oxygen generation	250 GPM	<ul style="list-style-type: none"> • Improved soil structure • New root development • Better water infiltration and retention • Improved caliber distribution of fruit



In recent years, Chilean cherries have seen a significant boost in demand, particularly from Asia.¹ More than 200,000 tons of cherries are shipped from Chile across the Pacific each year, and the market shows no signs of slowing down.²

Noble Fruit is one company that's been active in this market: 80 percent of the company's volume is exported throughout the Asian region.³

Drought challenges in the orchard

One of Noble Fruit's cherry growers was experiencing problems in his orchard related to drought. Production manager Juan Pino explains: "Our orchard was sick, devastated by diseases, which were even worse with the drought conditions that we were facing. We had 30% of our plants die. We asked many crop advisors, and they concluded the soil rhizosphere was lacking."

Like most crops, cherry trees develop best when the soil they grow in is healthy. Organic matter in the soil, such as mycorrhizal fungi, and low soil compaction, all contribute to the plant's ability to absorb nutrients. In short, healthy soil leads to healthy cherries.⁴

¹ <https://www.globaltimes.cn/page/202112/1243809.shtml>

² <https://www.fruitnet.com/eurofruit/asia-briefing-kicks-off-with-cherry-boom/183145.article>

³ <https://noblefruit.cl/homepage/>

⁴ <https://www.horticulture.com.au/globalassets/laserfiche/assets/project-reports/cy12002/cy12002-final-report-554.pdf>

⁵ <https://www.sciencedirect.com/science/article/abs/pii/S0959652621042165?via%3DIhuh>

Nanobubbles improve soil health and structure

It has been demonstrated in multiple farms that nanobubble enriched irrigation water contributes positively to soil health and structure.

University research published in the Journal of Cleaner Production showed that oxygen nanobubble enriched irrigation water improved the soil bacterial communities.⁵ Thanks to a highly efficient increase in dissolved oxygen (DO) concentrations in the soil from nanobubble technology, the rhizosphere develops into a healthy ecosystem, and crops enjoy optimal growing conditions.

Nanobubbles also increase soil flocculation, pulling together individual clay particles into larger aggregates, which reduces soil compaction and improves soil structure. Better soil structure increases root development and contributes to healthier trees and crops.

This is also something that Juan Pino noticed. The cherry grower installed a Moleaer Neo 250 O₂ with a 200 m³ reservoir. Juan shares his experiences: "We strongly believe that nanobubbles, in combination with soil amendments and microbes, such as mycorrhiza, have improved the soil structure, which can be seen in improved and new root development, better water infiltration and water retention."

An exponential increase in caliber distribution

In their first season using nanobubbles, the grower's caliber distribution improved exponentially, with only 10% in the XL caliber (medium-small size) and without decreasing production. "We expect to continue our orchard improvement through irrigation efficiency in order to face these drought conditions," Juan concludes.



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