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Enhancing Water Quality and Blueberry Yield with Agrona Nanobubble Technology

LOCATION
Morocco

INSTALLATION
October 2024

AREA
26 hectares,
15,000 m^3 irrigation pond

UNIT TYPE
Nanobubble Generator
40 m^3/h + DO sensor

CROP
Blueberries

AGROVISION

RESULTS

- Dissolved oxygen **increased from 6.2 to 15 mg/L**
- Algae eliminated **after 2 weeks**
- **15%** yield improvement
- Reduced chemical use by **75%**
- Stable irrigation flow, **no clogging**
- Improved fruit **quality** and plant vigor

Agrovision Morocco, a global leader in premium superfruits partnered with Agrona to enhance water quality, optimize irrigation efficiency, and support sustainable blueberry production. In October 2024, Agrona installed a 40 m^3/h Nanobubble Generator connected to Agrovision's 15,000 m^3 irrigation pond.

Within weeks, the system significantly increased dissolved oxygen from 6.2 mg/L to 15 mg/L, eliminated algae buildup, and stabilized irrigation flow. After seven months of continuous operation, Agrovision reported cleaner water, healthier root zones, and a 15% increase in blueberry yield and fruit quality, with significantly reduced need for chemical cleaning and maintenance.

Challenges:

- Low dissolved oxygen in irrigation ponds (6.2 mg/L)
- Algae growth and organic buildup
- Frequent use of cleaning chemicals (weekly dosing)
- Clogging and reduced efficiency of drip irrigation
- Need for higher yield and improved fruit quality

Solution

In October 2024, Agrona installed a Nanobubble Generator 40 m^3/h connected directly to Agrovision's 15,000 m^3 irrigation pond. The system continuously infuses oxygen nanobubbles (~75 nm) into the water, creating a highly stable, oxygen-rich environment that inhibits algae and biofilm formation.

Product Description

The Agrona Nanobubble Generator is a plug-and-play solution that super-saturates water with oxygen. These ultra-fine nanobubbles deliver long-lasting oxygenation, improve microbial balance, and enhance water quality, key factors for root health and crop vigor in blueberry cultivation.

Operational Integration

The Nanobubble system was seamlessly integrated into the existing irrigation infrastructure. Operation required no downtime and minimal maintenance. Dissolved oxygen levels remained consistently high throughout the 7-month trial, even at stable water temperatures of 24°C.

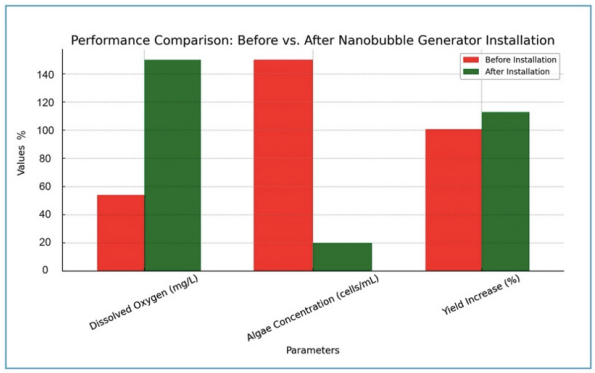
Maintenance and Operation

The system requires only basic maintenance. The installation included a DO sensor for real-time monitoring of dissolved oxygen, achieving stable, high oxygen levels across all irrigation cycles.

Methodology and Data

Parameter	Before Installation	After 2 Weeks	After 7 Months
Dissolved Oxygen (DO)	6.2 mg/L	14.5 mg/L	15 mg/L
Algae Presence	High	Reduced by 80%	Eliminated
Chemical Cleaning	Weekly	Once per month	Minimal
Irrigation Flow Stability	Variable	Stable	Stable
Crop Yield	Baseline	+10%	+15%
Water Temp	24°C	24°C	24°C

Performance Comparison Chart



BEFORE

AFTER

All readings were taken using standard DO meters during comparable temperature and growth stages.

RESULTS

BEFORE

AFTER

- **Dissolved oxygen increased from 6.2 mg/L to 15 mg/L**
  Consistent oxygen levels even under high temperatures
- **Algae eliminated within 2 weeks**
  Reduced chemical cleaning frequency from weekly to once per month
- **Improved irrigation performance**
  No clogging observed, cleaner drippers and stable water flow
- **Higher blueberry yield and quality**
  +15% yield improvement with stronger, more uniform plants and better fruit size, taste and quality
- **Reduced chemical usage and maintenance costs**
  Sustainable cleaning through nanobubble oxidation, reducing hydrogen peroxide dependency

Qualified Results

The Agrona Nanobubble system proved to be a sustainable and structural solution for Agrovision Morocco's irrigation water challenges. Higher oxygen levels enhanced aerobic microbial activity, prevented algae and biofilm buildup, and improved the overall performance of the irrigation network. As a result, blueberry plants showed stronger root zones, improved vigor, and higher yields, supporting Agrovision's commitment to premium fruit quality and sustainable production.

Nanobubble installed at Agrovision Morocco.

Grower's Perspective:

"The nanobubble installation in Morocco helped us achieve cleaner water, stronger crops, and higher yields, all with reduced chemical use. It's a sustainable solution that aligns perfectly with Agrovision's mission of innovation and excellence."

Agrovision Morocco Team

Best Practices

- Monitor DO levels regularly during operation
- Keep consistent nanobubble dosing for uniform oxygenation
- Inspect pond and irrigation endpoints monthly to confirm algae-free flow
- Avoid unnecessary chemical additives let nanobubbles maintain system hygiene
- Record yield and quality data seasonally to track long-term improvement

Agrovision Morocco's successful implementation of Agrona Nanobubble Technology showcases how advanced oxygenation can transform irrigation water into a living, self-cleaning medium. By improving dissolved oxygen, eliminating algae, and strengthening plant health, Agrona helps superfruit producers like Agrovision achieve premium quality, sustainability, and profitability.

Ready to experience the Agrona difference?

Contact us today for a trial installation or join our Nanobubble Rental Program to see real results before purchase.

Experience measurable improvement within the first growth cycle with no operational downtime.

- Free on-site water analysis and consultation
- Trial systems for short-term validation
- Flexible Rental Program for seasonal or pilot use

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Visit our website for more information about Nanobubbles.