

Cleaner water through ionization

"Just throw it in..." said eggplant grower Rob van der Knaap when he first encountered the FreshWater circulation pump. And he immediately pointed to the wastewater silo at the PandA nursery in Honselersdijk. 'If it doesn't help, it doesn't hurt', he immediately thought, because he initially didn't have much confidence in the ionization technique. The results prove the opposite.

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An energy-efficient circulation pump that continuously pumps water through a special 'device' and uses ionisation to ensure clean water with less algae, fewer bacteria and fewer micro-organisms? Rob van der Knaap initially didn't think much of it. "I was told that 'this device ionises and structures your water, which resets the memory of the water and returns it to its original form.' I didn't fully understand it, I find it difficult material, but the promise that I could get cleaner water with this and use less hydrogen peroxide appealed to me." So he first took some samples in the wastewater silo, threw the device in and took some more samples after ten days. "And then we saw that it worked."

The device was then moved to the day supply silo and then to the basin, and each time the samples left no doubt: the water had become drinkable. But much more happened, because one day Van der Knaap became slightly concerned when a large layer of foam suddenly appeared in the mixing tank. What was the case? The canvas in the basin was already somewhat old, and over time a large layer of algae had settled on it. And that came loose due to the ionization process. Hans Smaal, consultant at FreshWater B.V., is also familiar with the phenomenon from other pilot projects. "A grower called me worried because there was half a meter of foam in his day supply silo. A layer of slime with all kinds of organisms had settled in the pipes between his basin and the silo. And yes, that suddenly came loose because our system is bio-organic. The pipes are a lot cleaner."



WHAT IS IONIZATION?

By continuously releasing ionization on the water, nano bubbles are created that provide an O₂ connection with pathogens. In this way, ionization kills microorganisms in the water and ensures that the biofilm disappears and does not return.

Less hydrogen peroxide

It is a natural process and no reason to panic. Van der Knaap was concerned that all the loose algae could lead to blockages in his water delivery system, and installed an extra fine filter (25 microns) to prevent these problems. He is so pleased with the trial with the water ionizer, which lasted almost a year, that he has now purchased two new devices. This means he can also use this technology in a second basin and in the day supply silo. "Up until now, we have disinfected the water with stabilized hydrogen peroxide and silver pens (silver ionization). But ultimately you want to move towards 'chemical-free' cultivation. Using less silver also saves money."

Reducing the use of chemical cleaning agents is an important consideration for growers to switch to ionization, as Hans Smaal has noticed in practice. "Do the math, if you spend 60 cents per square meter on hydrogen peroxide, that's thirty thousand euros per year for a 5-hectare greenhouse. One device costs around five thousand

euros and with that you can clean between two and three thousand m³ of water. A few devices in the basin and in the main silos – it is also possible to connect a device directly to the main pipe to the garden – will cost you around twenty thousand euros. You will have earned that back within a year."

More vitality

With Rob van der Knaap, there are currently around fifty other growers who use FreshWater water ionizers. The installation at the PandA nursery cost Van der Knaap no effort at all. "An extra long extension cord, that was all I needed to install the pump in the basin." He has now let go of his initial hesitations about the technology: "Vital water in your system reduces the chance of contamination. We have carried out various analyses and see that things are getting better and better. We no longer have problems with crazy roots. The plants have a stronger texture and we see fewer viruses. I think we can make even bigger steps to further increase the nutritional value of our eggplants. After all, a vital plant also produces vital vegetables."