

Letter of endorsement



Date: 07 November 2024

To whom it may concern:

This letter serves as endorsement by Practical Aquaponics SA (PTY) Ltd of the specific Oxygen enhancing technology supplied by Heindre Rademan of SoldevCo and UltraOxygen that we have been testing and using over the last 3 years.

Prior to our connection with Heindre, we were working with tech supplied by OxyGenesis with Japanese and Israeli connections, and due to limitations, we started testing the equipment from UltraOxygen and have been collaborating with them to build specialized solutions for the Aquaponics and Aquaculture Industries in Southern Africa. The results have been nothing short of groundbreaking.

I have no hesitation in recommending Heindre, his patented technology and his team.

I enclose below, some of the research conducted with results achieved.

Martin Fick

+27832784201

www.practicalaquaponics.co.za

Interpretation of data:

The Graph on the page below revealed some extremely important breakthroughs relevant to Optimized Aquaponics as a natural food production ecosystem that need to be verified by repetition and empirical re-testing, but in order to repeat the exercise, a **mature** system that is already running as a naturally aspirated PASA module, where macro and microbiology is already at optimal plateau, would need to be upgraded with the incorporation of the 1N-Viper UO² hardware in order to fully measure the impact of the technology again. It will not do to simply install the technology from the beginning in an infant or adolescent system. This is an acknowledged challenge.

Having said that, we are satisfied that the results achieved in the trial conducted at the PA SA HQ and Research Centre are accurate, and would be very similar to those of a repeat experiment.

Some outcomes were unexpected:

1. The increased residual DO levels in the water of the system: Bio Oxygen Demand in relation to Bio Oxygen Availability (BOA) at the start of the exercise were such that the system was teetering on collapse, with DO levels near 2mg/L where water temperatures were also elevated as a result of a recent heatwave which is a common pre-cursor to the arrival of a cold-front in our Research site climatic area. After the UO² 1N-Viper was fitted, an immediate increase of Dissolved Oxygen to a fairly stable 7,5mg/L was evident in the system.
 - a. This represented a 4mg/L or 200% increase in residual DO which has remained stable over the experimental period as well as subsequently.
 - b. The increased O² immediately caused improved Oxidation of Ammonia and Nitrite NO²⁻, which led to lower levels of these compounds in the water, but we had expected to see the resultant NO³ Increase which should naturally have followed, **but did not!**
2. The NH³ and NITRITE NO²⁻ levels dropped as anticipated as the increased Dissolved Oxygen levels facilitated the first stage of Nitrification, but as mentioned in the previous point, we did NOT see resultant NO³⁻ levels increase as expected.
3. The pH fell drastically, as anticipated, as the greater quantity of available NH^{3/4} was oxidized into NITRITE NO²⁻ and Hydronium ions were freed in solution requiring frequent aggressive upward pH adjustment using hydroxides. This manual pH management caused the pH to push upwards to a more basic state aggressively, and fluctuate rapidly resulting in catastrophic negative impact on the first stage of autotrophic bacterial nitrification. This was NOT expected, and forced us to push the technology to the next level where the automated pH-upward management was incorporated into the unit.
4. Approximately 10 days after the 1N-Viper was introduced to our trial system and almost immediately after we initiated the more deliberate, gradual and continuous pH management which was now possible using the upgraded unit, we witnessed the rapid increase in NO³⁻ in solution and what followed was RAMPANT plant growth and performance at both vegetative and Reproductive levels. We are still in the process of collating data on improved revenue, but this exercise will take another year of research.
5. What is more than obvious from the data on the chart, is that the facilitation of increased O² in solution along with improved atomization of solid organic material MUST necessarily be accompanied by automated pH management in order to get the full benefit of the technology.



DWC 1 EXT IMPACT OF INCREASED O2 TRIAL

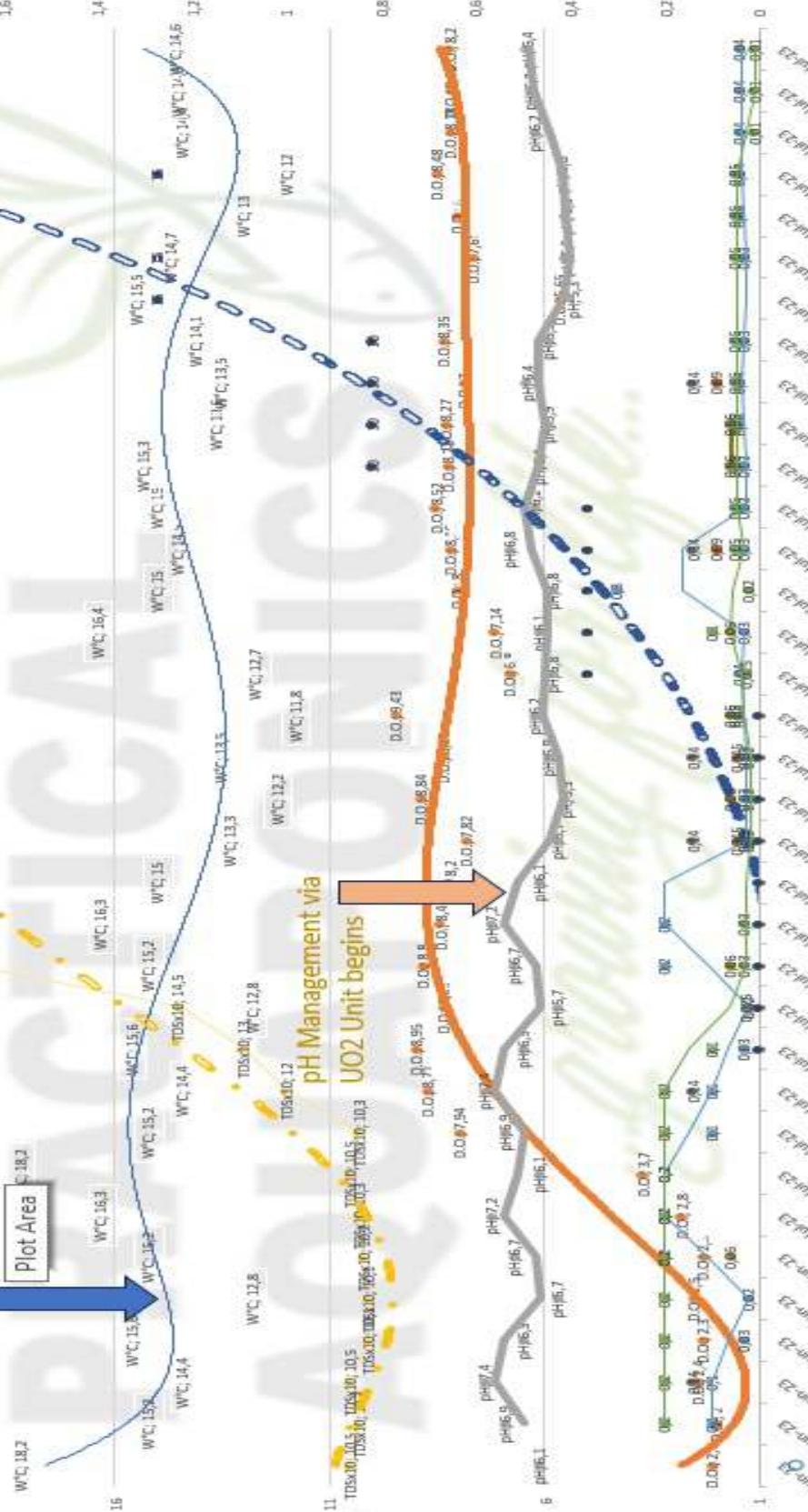
UO2 1N-Viper trial begins

540L ambient Air/Hr injection

Recirculating 7980L/Hr @ 0,8Bar

Treating all DWC water in 1hr 35 min

Plot Area



Martin Fick
 Business Owner
 Director
 Practical Aquaponics (Pty) Ltd
 Company Reg. No: 2017/070637/07