

July 27, 2023

Attention: Mr. Emil Isaac
Technology Communication Manager
River Stone Fish Farm and Laboratory

Subject: Test Results for Swift Grow Liquid Fertilizer

Dear Mr. Isaac,

Greetings from the International Center for Biosaline Agriculture (ICBA).

The purpose of this letter is to summarize the test results for Swift Grow liquid fertilizer, a product of River Stone Fish Farm and Laboratory, Australia. The test on this product was conducted at ICBA's research facility in Dubai, the United Arab Emirates, during the period June – September 2021 based on the agreement between the two parties signed on 9 June 2021.

The objective of the test was to evaluate the efficacy of Swift Grow liquid fertilizer on cucumber crop yield and quality within greenhouse production under the UAE agro-climatic conditions. The efficacy of this product was assessed against the results obtained for a synthetic mineral fertilizer that was used as a control under the same conditions. Both Swift Grow and the control were tested using two substrate types – sand mixed with compost and peatmoss.

The results obtained showed the following:

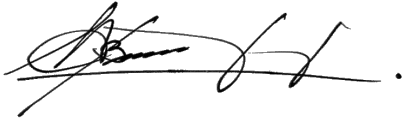
- **CROP YIELD:** Swift Grow Liquid Fertilizer increased the number of fruits harvested in both substrates. For the sand-compost substrate, the yield from Swift Grow was 20% higher than the yield from the control mineral fertilizer. For peatmoss substrate, the Swift Grow yield was 6% higher than the control mineral fertilizer.
- **HARVEST PICKS:** Swift Grow liquid fertilizer increased the total number of vegetable pieces picked in both substrates. For the sand-compost substrate, the number of picks was 30% higher for Swift Grow than for the control. For peatmoss substrate, the number of picks was only 2% higher for Swift Grow than for the control.
- **TASTE:** A taste panel of 10 people assessed the quality of the cucumbers based on color, taste, smell and firmness. Their subjective evaluation determined that there was no statistically significant difference in quality between cucumbers grown using Swift Grow liquid fertilizer and the control mineral fertilizer.
- **SUGAR:** Degrees Brix, the sugar level measurement of fruits and vegetables, was statistically similar for cucumbers grown using Swift Grow liquid fertilizer and those grown using the control mineral fertilizer.
- **PLANT GROWTH:** The growth speed of plants in terms of height and internode development was statistically similar for Swift Grow liquid fertilizer and the control mineral fertilizer. However, plant height was greater by 14% for plants grown in peatmoss substrate than in sand-compost substrate.

- **LEAF COLOUR:** Chlorophyll content of the leaves, which indicates the leaf N level, was not affected by fertilizer type. However, it was affected by substrate type, being 10% higher for the peatmoss substrate than for the sand-compost substrate.
- **SOIL MOISTURE:** Swiss Grow increased soil moisture by 14-20% in the sand-compost substrate as compared to the control mineral fertilizer. Soil moisture in the peatmoss substrate was 11-14% higher for Swiss Grow as compared to the control mineral fertilizer. The higher soil moisture level and the lower drainage runoff indicate that Swiss Grow has a higher soil water holding capacity than the mineral fertilizer used as control.
- **NUTRIENT LEVEL:** The soil analysis result generally showed that the two fertilizer types provided a comparable nutrient level to the plants with no statistically significant difference in ECe level (a measure of overall nutrient level).
- **ENVIRONMENTAL HEALTH:** Swift Grow is a more environmentally friendly and sustainable alternative to mineral fertilizers. The latter result in a relatively higher nutrient runoff, which is harmful to the natural microorganisms within the soil and may also adversely impact waterways through leaching.

The ICBA trial focused on cucumber plants, highlighting the advantages of microorganisms in Swift Grow fertilizer for the soil and host plants. Future research could explore how these microorganisms benefit other plants, such as vegetables, fruit trees, and ornamentals. Given the consistent operation of soil microorganisms in nature, similar benefits may apply to untried plants, such as flowers, turf, palms, and more.

This summary of test results, prepared upon the request of River Stone Fish Farm and Laboratory, is drawn from the final report that was prepared and submitted by ICBA to the latter upon the completion of the Swift Grow testing in September 2021.

Sincerely,



Dr Luis Augusto Becerra Lopez-Lavalle
Chief Scientist






2023-07-27-Letter-Swift Grow-TTP results-Additional details

Final Audit Report

2023-07-27

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