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Root's RTZO technology substantially increases yield of asparagus in successful R&D pilot

- Significantly increased yield of marketable asparagus plants evident from R&D Proof of Concept conducted at ROO facility during winter (February to April) – further strong validation of Root Zone Temperature Optimization - RTZO technology
- Unlocks significant market opportunity – global fresh asparagus market is valued at over US\$20Bn¹
- RTZO is the only technology that can be deployed economically in open fields, the most common (90%) growing method among Asparagus growers
- ROO pursuing a number of opportunities with commercial Asparagus growers in a number of markets

Roots Sustainable Agricultural Technologies Limited (ASX: ROO, Roots or Company) is pleased to report very encouraging results from a Proof of Concept (POC) trial undertaken at its R&D facility in Israel on the effects of root zone heating of Asparagus using the Company's proprietary Root Zone Temperature Optimisation (RTZO) technology.

The Asparagus fruits were heated in two heating levels: heating to around 22c° to 24 c° using an hybrid system, a fusion of a ground source heat exchange (GSHE) and a heat pump and heating to around 26 c° to 28 c° using GSHE only.



Image 1: Heated asparagus on the left with the control crop shown right



ROOTS

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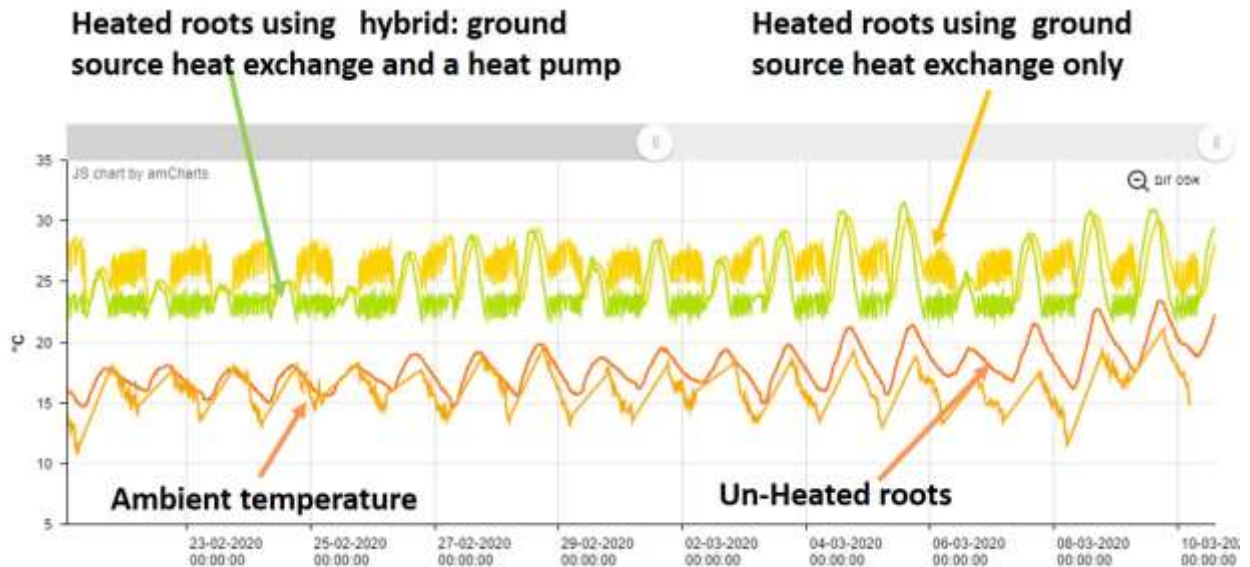


Image 2: Heating roots zone using two technologies: GSHE and Hybrid system

Results from 7 harvest cycles show that Asparagus heated at the root zone level using Roots' RTZO GSHE solution showed a mean increase of yield by 90% of all marketable Asparagus compared with the control plot. While the hybrid GSH and heat pump system resulted in 15% increase only compared with control group (possibly due to lower temperatures) the GSHE with coils and circulation pump only resulted in the impressive yield increase of 165%. It is concluded that the higher roots zone temperature of the GSHE (as seen in image # 2) resulted in significant yield increase.

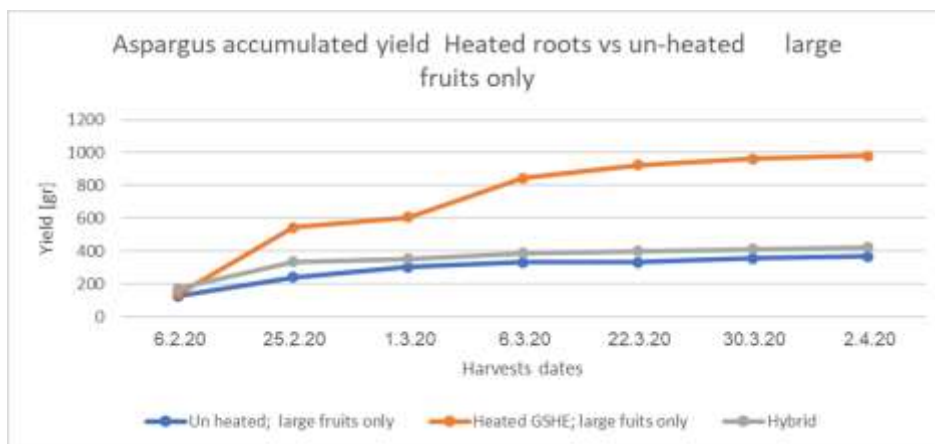


Image 3: Asparagus cumulative yield marketable plants only (GSHE heated)

These results provide ROOTS with considerable validation of its RTZO technology and presents a significant commercial opportunity for ROO.

RTZO technology optimises plant physiology for increased growth, productivity and quality by stabilising the plant's root zone temperature year round. Optimal root zone temperature is commonly known to be the most influential parameter in a plant's physiology besides water.



Asparagus is a unique and high-end perennial crop, producing multiple crop harvests and a very long growing cycle of up to 15 years. Asparagus is susceptible to cold and growth can be diminished due to cold stress.

As part of the study, the POC crop was heated between 6 February 2020 and 4 April 2020. During that time, the number of marketable size fruits increased by 95% in the root zone heated crop. Heated Asparagus resulted in 46% more marketable yield over all fruits sizes compared with unheated Asparagus.

This development provides a significant opportunity for ROO as the global market for fresh asparagus is valued at over US\$20Bn. The canned and frozen market segment for the plant is also expected to grow rapidly in the coming years.

Roots will now begin aggressively marketing its RTZO technology to asparagus growers. The RTZO system can reduce the use of un-environmentally friendly plastics used to heat the plant during growth periods and is only required to be embedded into soil every six to eight years, leaving the plants growing cycle uninterrupted. RTZO is also the only technology that can economically heat crops in open fields, which is the most common growing method.

Roots Chairman and CEO, Mr. Boaz Wachtel, said: *"Results from this early study are very encouraging for Roots and further validate of our RTZO technology and its applicability to a large number of commercial crops. Discussions with commercial asparagus growers are advancing favourably. Heating Asparagus roots using the energy efficient and environmentally sustainable GSHE as compared with traditional heating system, opens for roots new horizons."*

"We continue to witness an increased interest in our RTZO solutions as more countries and producers tackle the issue of food security and increase local cultivation to decrease reliance on imports."

"Our new business pipeline is building favourably despite the slowdown in the sales cycle that COVID-19 has caused, and we look forward to delivering more updates on R&D and our commercial progress."

-ENDS-

About Roots Sustainable Agricultural Technologies Ltd

Israeli-based, Roots Sustainable Agricultural Technologies Ltd. is developing and commercialising disruptive, modular, cutting-edge technologies to address critical problems being faced by agriculture today, including plant climate management and the shortage of water for irrigation. Roots has developed proprietary know-how and patents to optimise performance, lower installation costs, and reduce energy consumption to bring maximum benefit to farmers through their two-in-one root zone heating and cooling technology and off the grid irrigation by condensation technology. Roots is a graduate company of the Office of the Israeli Chief Scientist Technological Incubator program. More information www.Rootssat.com

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¹ <https://www.futuremarketinsights.com/reports/asparagus-extract-market>