



**ASX and MEDIA RELEASE**  
**16 August 2022**

## **ROOTS secures new sales contracts worth \$190,000 in UAE, Israel**

### **Highlights:**

- **Contract wins include a \$151,350 deal for the supply of Roots' HEPS (Heat Exchange Probes) cooling solution, as part of a large-scale coffee production project in the United Arab Emirates (UAE)**
- **Follows the recent signing of a free trade agreement between Israel and the UAE, which aims to lift bilateral trade to more than \$10bn**
- **Two additional contracts secured in the Israel market, demonstrating the multi-use application of Roots' technology for an array of commercial agriculture operations**

**Roots Sustainable Agricultural Technologies Limited (ASX: ROO, "Roots" or "the Company")** is pleased to advise that it has secured additional contract wins in the UAE and Israel for the use of its commercial agriculture technology.

The sales results demonstrate that Roots, which is headquartered in Israel, is finding traction across its product suite in both domestic and international markets.

### **UAE Sales**

Highlighting the Company's latest update was confirmation of a new sales agreement with EliteAgro – a leading agricultural company headquartered in the UAE with operations in several regional jurisdictions.

Under the terms of the sales agreement, Roots will facilitate the supply of HEPS (Heat Exchange Probes), as part of a root-zone cooling solution for EliteAgro's 'Coffee House Murmum' project.

The HEPS are designed to cool the root zone temperature of the coffee plants at scale, and keep them at an optimal range year-round.

The total consideration payable to Roots for the HEPS solution was agreed at US\$105,000 (~\$151,350).

Payment terms were finalised via a Letter of Credit (LC), which was formally agreed to by both parties. Under the terms of the LC agreement, Roots has received an initial funds transfer amounting to 15% of the total sum. The remaining 85% will be paid as follows:

- 55% upon shipment;
- 20% upon installation; and
- 10% after one year against the final acceptance certificate

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The Coffee House Murmum project is part of a multiple commercial initiatives in the region, which incorporate cutting edge agricultures technologies that offset the harsh climate environment in the UAE.

Roots' technology is designed to support and facilitate the growth of 9,000 coffee plants in pots, under very hot weather conditions near Dubai.

Coffee plants have a shallow root system and most roots concentrate around the drip irrigation area. The Roots system is designed to cool the root-zone area with the insertion of two HEPS per pot, maintaining an optimum temperature range under 30 degrees celsius.

The system is controlled by a unique monitor, which operates as a centralised data collection and data sharing system to control the heat pump operation.

Coffee plantations are usually grown in tropical regions, however, in the UAE the canopy will be exposed to air temperatures that could reach 50 degrees celsius during daytime hours.

Based on the application of its technology and direct experience from previous commercial sales, Roots has observed that a significant delta exists between cooled roots and the hot canopy, which will accelerate growth and boost the plant's overall performance.

In a recent study led by Brazil-based researcher Raquel Schmidt', and published in the Agronomist Scientific Magazine, the researchers stated:

*"It was observed that the highest concentration of roots occurred in the distances close to the irrigation drippers. There was variation in the distribution of the root system among the genotypes. However, in general, the root system is concentrated at a depth of 0 to 20 cm in the soil, at distances up to 50 cm in the planting row and up to 60 cm in inter-rows. Therefore, the greatest efficiency in nutritional management can be achieved by applying fertilizers within a radius of 50 cm around the plant."*

Those study results support the application of Roots' Heat Exchange Probes to provide an effective cooling mechanism to the cool root zone area of plants, due to the shallowness of the root zone area and its concentration around the drip Irrigation nozzle.

In that context, Roots has established its technology as a market leader among existing air management and cooling technologies, by providing a platform which is focused specifically on the cooling of the roots zone area, which is the most critical variable to plant health.

Compared with existing technologies, the Roots platform also operates without the negative by-product of increased humidity levels in the greenhouse. Operating costs are significantly lower compared with existing solutions for cooling the air, such as wet-pad and fogging systems.

#### **Israel sales:**

*Hydroponic fluid temperature stabilisation project in Kibutz Pelech, Western Galilee*

<sup>1</sup>Article title: 'Variability of Root System Size and Distribution among *Coffea canephora* Genotypes'

Raquel Schmidt, Larícia Olária Emerick Silva, Adesio Ferreira, Ivoney Gontijo, Rubens José Guimarães, José C. Ramalho and Fábio Luiz Partelli.

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The project involves commercial plant operation, located in a quarter acre greenhouse using the NFT (Nutrient Film Technique) method.

ROOTSSAT will supply and install a heating and cooling system that will connect to the growing fluid and provide the ideal temperature for the plant year-round.

Under the terms of the sales agreement, consideration paid to Roots will be \$12,600 with 60% payable immediately, 39% on installation date and 10% payable upon completion of installation.

With this system, the customer will be able to add growing cycles and grow all year round regardless of the temperature outside.

*Gobari Farm, Moshav Azriel*

Roots has also been commissioned to install a Root Zone Temperature (RZT) system comprising pipes in the beds of Ornithogalum flowers.

The technology will be deployed for a farming client that grows flowers, peppers and cucumbers for sale in domestic markets.

Under the terms of the sales agreement, consideration paid to Roots will be \$25,974 with 40% payable immediately and the remaining 60% payable upon completion of installation and governmental subsidy payment (already approved by the Israeli Agricultural Ministry).

Typically, during the summer period, the client removes the hatches from the ground and transfers them to a refrigerator. Applying the RZT technology system, it will be possible to leave the hatches in the growing bed until the next growth cycle.

This saves considerable labor and supports the profitability of the entire growing operation. In addition, during the cultivation, the client will be able to set the optimal temperature point for the plant, accelerating the flowering process and resulting in an earlier 'go to market' to obtain premium prices.

The current growing method is labour intensive and requires moving the growing pots to a freezer to induce dormancy and then re-plant them back in the soil or pots.

This growing protocol requires a narrowly defined temperature range, whereby during certain periods the soil needs to be cooled significantly to below 10 degrees Celsius.

With Roots' system the farmer will be able to cool the soil to similar temperatures in the freezer and save moving the pots in and out of a freezer. This will allow the farmer to leave the hatches in the growing bed until the next growth cycle and save considerable labor.

The system will also cool the soil during hot nights In Israel a more frequent occurrence due to climate warming.

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In addition, during the cultivation, the farmer will be able to give the optimal temperature to the plant and thus also advance the flowering stage and initiate their go-to-market strategy earlier, in order to fetch prime prices to support the profitability of the entire growing operation.

**Management commentary:**

**Boaz Wachtel, ROOTS' CEO and Chairman said:** *"This trading update highlights the ongoing application of Roots' sustainable agriculture technology across a diversified client base. In particular, the sale agreement with EliteAgro marks an exciting step forward for the business, demonstrating both the effectiveness of Roots' agricultural technology to improve production outcomes in harsh weather conditions, as well as the broader commercial opportunities underpinned by the recent Israel-UAE free trade agreement. We look forward to providing further sales updates for investors, as the Company continues to gain traction across global markets for its leading multi-channel product suite.*

**-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 faced by agriculture today, including management of plant's root zone temperatures 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. For more information visit [www.Rootssat.com](http://www.Rootssat.com)

**About Root Zone Temperature Optimization (RZTO)**

Root Zone Temperature Optimization (RZTO) optimises plant physiology for increased growth, productivity and quality by stabilising the plant's root zone temperature. Using Ground source heat exchange (GSHE) installations either alone, or in combination with heat pumps, or with heat pumps alone, ROOTS is able to provide accurate range of root zone temperatures for farmer and the plants to obtain the multiple benefits.

This significantly increases yields, increases growing cycle planting options, improves quality, mitigates extreme heat and cold stress while significantly reducing energy consumption by stabilising and optimising the ROOTS zone temperature.

*This announcement was authorised to be given to the ASX by the Roots Executive Directors, Mr Boaz Wachtel and Mr Sharon Devir.*

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<sup>1</sup>Article title: 'Variability of Root System Size and Distribution among *Coffea canephora* Genotypes'

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### Forward looking statements

This announcement contains forward-looking statements with respect to ROOTS and its respective operations, strategy, investments, financial performance and condition. These statements generally can be identified by use of forward-looking words such as "may", "will", "expect", "estimate", "anticipate", "intends", "believe" or "continue" or the negative thereof or similar variations.

The actual results and performance of ROOTS could differ materially from those expressed or implied by such statements. Such statements are qualified in their entirety by the inherent risks and uncertainties surrounding future expectations. Some important factors that could cause actual results to differ materially from expectations include, among other things, general economic and market factors, competition and government regulation.

The cautionary statements qualify all forward-looking statements attributable to ROOTS and persons acting on its behalf. Unless otherwise stated, all forward-looking statements speak only as of the date of this announcement and ROOTS has no obligation to up-date such statements, except to the extent required by applicable laws.

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