

29 October 2020

Roots introduces revolutionary heat exchange probe integrated with plant irrigation and fertigation functions

- **First of its kind offering combines root heating and cooling with irrigation and fertilisation through a single system**
- **Solution will considerably decrease costs for farmers and growers through one system installation – ongoing labour costs also expected to reduce considerably**
- **Technology is supported by strong intellectual property portfolio – protected by existing design and utility patents**
- **Roots expects solid uptake from customers – first purchases orders anticipated near-term**

Roots Sustainable Agricultural Technologies Limited (ASX: ROO, Roots or Company) is pleased to advise that it has developed a next generation agricultural solution that combines plant irrigation and fertigation functions with the Company's revolutionary heat exchange probe technology, combining a number of systems into one complete offering.

The Roots heat exchange probe is designed to be inserted into the tops of plant's pots and grow bags to significantly simplify working procedures and lower the installation cost associated with Roots' Root Zone Temperature Optimisation (RTZO) technology.

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

The Company's new, multipurpose solution will now allow growers to couple various irrigation emitters including drip, nozzle and sprayers to its probe technology, as well as combine liquid fertilisers with the irrigation function also allowing for plant fertigation through a single piping system.

This is a breakthrough in agricultural technology and Roots is confident that the new solution will significantly reduce costs for farmers, as they will now be able to use the one solution infrastructure for two functions. The Company also anticipates that installation of the multipurpose solution will drastically reduce labour costs.



Images: Heat exchange probe coupled with irrigation and fertigation functionality



Unlike existing solutions, the Company's new offering will rely on energy efficient heat pumps and ground source heat exchange to optimise root zone temperature year round. This will be pivotal as Roots targets customers in the covered cultivation space.

The new solution is protected under existing design and utility patents. Roots has identified a number of potential customers in Israel and more broadly and is confident that it will secure first purchase orders shortly.

Roots Executive Chairman and CEO, Boaz Wachtel said: *"Introducing this multipurpose, next generation solution to our customer base is a major milestone for the company and we are confident that it will be very well received."*

"By combining irrigation and fertigation solutions with our revolutionary heat probe, we offer farmers and growers a way to considerably reduce their capital expenditure. The new, multipurpose solution is easy to use and install and will considerably reduce ongoing labour costs, leaving growers to benefit."

"We will make the solution available to our customer base in Israel and internationally in the coming weeks and we anticipate first purchase orders shortly thereafter. Interest from our retail partners and existing customer base has been very promising."

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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 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

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. Leveraging the principle of Ground Source Heat Exchange (GSHE), ROOTS installs a closed-loop system of pipes. The lower part is installed at a depth where soil temperature is stable and not affected by weather extremes, and the upper part in the target crop's root zone just below the soil surface. Water flowing through the lower pipes is charged by the soil's stable temperature. The heated (or cooled) water is pumped through the pipes installed in the root zone, where the heat (or cold) is discharged.

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.

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



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.