

19 April 2023

New Design Patent Granted in Canada; provisional patent filed in US for upgraded Irrigation-by-Condensation Technology Suite

Highlights:

- **Newly granted design patent in Canada which opens up a broader addressable market for ROOTS products in Canada, which has one of the most sophisticated greenhouse and temperature-controlled agriculture industries globally**
- **Successfully filed new patent application in the US market for Roots' irrigation-by-condensation (IBC) technology, coupled with rain collection and drip irrigation functionality**
- **New application provides a strong IP foundation to further commercialise roots' IBC program internationally in the face of increased aridity and adverse weather events globally**
- **Expanded global sales footprint, with first purchase order for the Mini-Roots system in the Philippines market**

Roots Sustainable Agricultural Technologies Limited (ASX: ROO, "Roots" or "the Company") is pleased to provide an update on its global patent development strategy and international sales footprint, including its first product sale in the Philippines market.

Patent updates

The company confirms that the Canadian Patent office has granted design patent No. 209610 for Roots' Heat Exchange probe technology.

In accordance with the patent approval, the technology will be designated in Canada as 'Adapter for Pipe Joints', and represents an important development for the intellectual property (IP) protection of Roots' technology in the Canadian market.

Due to its climate, greenhouse operations play a major role in Canada's agricultural sector¹. The Canadian greenhouse agricultural market consists of more than 2,000 vegetable/mushroom producers and cannabis greenhouse operations, with a total greenhouse area of more than 33.2m km².

For greenhouse operations, Roots' patented Heat Exchange probe offers several advantages such as increased yield, early maturity and energy savings for air heating / cooling and the Canada patent strengthens the Company's position for what is a major addressable market opportunity.

Separately in the US, Roots has filed another IP application with the United States patent office, in line with the Company's strategy to broaden its patent portfolio in the US market.

The provisional patent application encompasses irrigation-by-condensation – a long-standing ROOTS technology now in the early commercialisation stage – with new product upgrades including rain collection and a drip irrigation option.

The newly filed patent offers a system and method to produce irrigation water from the humidity in the air, augmented with an ability to capture rain water and metered and timely distribution of both sources of water from the air to designated plants. A comprehensive PCT patent will be filed in the coming months.



The application marks another important step to protect the Company's IP in the US market, and follows on from two separate patent applications lodged in 2022 (refer ASX Announcement 23 August 2022).

International Sales

Roots recently expanded the global market footprint for its irrigation technology with the first sale of its Mini-Roots system the Philippines. The US\$6,500 purchase order (PO) was made by an agriculture business which will deploy the technology for the root zone cooling of strawberries.

The sale was procured through the first Philippines-based ROOTS dealer, and sets an important precedent for the application of the Company's technology in a country that experiences extreme tropical weather events and excessive heatwaves.

Management Commentary:

Boaz Wachtel, ROOTS's CEO and Chairman and the inventor of the Irrigation by condensation system said: *"These developments mark the continuation of Roots' strategy to pursue a global sales network backed by a strong IP portfolio in key markets. Our new patent in Canada is an important validation of the Company's technology in a key market, with extensive greenhouse agricultural networks that are ideally suited to Roots' IDC technology. Additionally, the US patent application reflects the ongoing strength of Roots' R&D program, with expanded rain collection and drip irrigation functionality added to the core technology offering. Lastly, we are pleased to confirm the first sale of ROOTS products in the Philippines – a key market with unpredictable weather events where Roots' technology can directly assist with improved agricultural production. We look forward to providing more sales updates through our on-ground dealer network in the Philippines and other global markets."*

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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.

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This announcement was authorised by the Board of Directors of Roots Sustainable Agricultural Technologies Limited.

¹ <https://agriculture.canada.ca/en/sector/horticulture/reports/statistical-overview-canadian-greenhouse-vegetable-mushroom-industry-2021>