

30 July 2020

June 2020 Quarterly Activity Report and Appendix 4C

Highlights:

- 25-year pan EU design patent protection secured for heat exchange probe across 28 countries
- China patent for heat exchange technology well progressed – allowance notice received with full design patent grant expected near term
- R&D proof of concept trial shows significant yield increase of marketable asparagus plants – another strong validation of Root Zone Temperature Optimisation (RZTO) technology
- Third order for RZTO from existing customer in Israel highlights market traction
- RZTO sales pipeline continues to build momentum – multiple revenue generating opportunities currently pursued across key markets globally

Roots Sustainable Agricultural Technologies Limited (ASX: ROO, “Roots” or “the Company”) is pleased to provide this update to shareholders for the period ended 30 June 2020 (‘the quarter’).

Operational Overview

Significant progress made on China and EU design patents for revolutionary heat exchange probe technology

Roots made considerable progress during the quarter following the receipt of a pan EU registration notice and an ‘allowance’ notice from the People’s Republic of China’s patent office for the Company’s unique heat exchange probe for use in any substrate.

Registration in Europe is valid in 28 countries (including the UK) for 25 years from filing (25 November 2019) and ten years in China. The Company expects to receive the official grant of the design patent from China’s patent office in the coming weeks.

Roots’ revolutionary 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 installation costs associated with the Company’s Root Zone Temperature Optimisation (RZTO) heat exchange probe technology.

The heat exchange probe enables greater mobility of pots and grow bags during the growing cycle. Chains of probes with insulated pipes in-between can be used for row installations. The solution caters well for nurseries and greenhouses and has been successfully tested (refer ASX announcement: 27 September 2019).



Both the China and the EU greenhouse markets represent a significant opportunity for Roots. China's market was valued at ~US\$2.4Bn in 2017 and is expected to reach over US\$4Bn by the end of 2024, growing at a CAGR of 7.60% between 2017 and 2024ⁱ.

RZTO technology substantially increase asparagus yield in R&D pilot

Roots completed a successful proof of concept (POC) trial at its R&D facility in Israel, which showed the very positive effects that its RZTO technology had on asparagus crop yield.

The Company heated asparagus fruits at two different levels: heating to around 22°C 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.

Results from 7 harvest cycles highlighted that asparagus heated at the root zone level using the Company's RZTO GSHE solution showed a mean increase yield of 90% of all marketable asparagus when compared with the control pilot.

While the hybrid GSHE coils 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 using GSHE alone, with extremely low energy input (for circulation pump only) could be used to heat Asparagus and increase yield significant.

These results provide the Company with significant validation of its TZTO solution and a significant commercial opportunity. The global fresh asparagus market is estimated to be valued at ~US\$20Bnⁱⁱ, with the canned and frozen market expected to grow rapidly in the coming years.

The Company is confident of commercial uptake, as the solution may reduce the use of un-environmentally friendly plastics which are used to heat the plant during growth periods. Further, the system only needs to be embedded into soil every six to eight years, leaving grow cycles uninterrupted. RZTO remains the only technology that can economically heat crops in open fields, which is the most common growing method for asparagus.

Roots continues to aggressively market its RZTO solution to asparagus growers and looks forward to updating shareholder on progress when appropriate.

Third RZTO order secured from existing customer in Israel

Uptake of the Company's RZTO solution in Israel continued during the period, following the receipt of a third order of GSHE system from leading hydroponic vegetable grower, HYDRO GROW Farm, located in Bnei Atarot in Israel.

The order is valued at ~A\$17,000 and marks the third consecutive order from HYDRO GROW. The order highlights the commercial benefits the customer is experiencing from the RZTO technology, including enhanced production security, and lower operating expenses.



HYDRO GROW is a long-standing supplier of fresh vegetables to Israel's hospitality sector and the country's top restaurants. Demand for HYDRO GROW's produce is now ramping up as restaurants reopen following the ease in COVID-19 restrictions.

Subsequent to the end of the quarter, Roots' team completed the installation of the RZTO solution with HYDRO GROW which will allow the full production of crops, enabling protection from heatwaves during Israel's summer period.

Corporate Overview:

In May, Roots received firm commitments to raise A\$280,000, before expenses, by way of a placement of CDIs to sophisticated and professional investors.

The funds raised from the placement will be used for sales, marketing and business development opportunities, installation and engineering costs, paying out existing debt, placement costs, and for working capital.

Everblu Capital Pty Ltd, (an entity controlled by Roots Director, Mr Adam Blumenthal) acted as Lead Manager to the Placement and received a capital raising fee of 6% of funds raised and will be issued 1,000,000 CDIs, subject to shareholder approval to be sought at the next General Meeting.

In addition, the Company advises that the convertible securities agreement between the Company and CST Capital as trustee for The CST Investment Fund (**CST Capital**), as announced to the market on 8th February 2019 has concluded.

As part of the redemption and termination arrangements between the Company and CST Capital and the outstanding 98,000 Convertible Securities on issue, the following was agreed:

1. cash payment of A\$100,000;
2. issue of 3,582,385 conversion CDIs to CST Capital (issued on 27 May 2020); and
3. forgiving 1,650,000 Collateral CDIs previously issued to CST Capital.

In addition, the Company paid EverBlu Capital a fee of \$80,000 for out-of-scope work (specifically, negotiating the settlement of the funding facility with CST Capital Pty Ltd, negotiating several funding arrangements on behalf of the Company that were presented to the board but did not eventuate, ongoing services related to seeking large funding arrangements for the Company) which was deducted from the total funds raised under the May 2020 Placement.

Subsequent to the end of the quarter, the Company lodged a Notice of Meeting with ASX for its Annual General Meeting to be held on 23 July 2020.

Outlook

Roots has continued to operate under reduced OPEX scheme (due to Covid-19) and adapt its business development and sales initiatives to current conditions. Nevertheless, Roots is witnessing considerable growth in its new business pipeline, mostly due to the introduction of the Heat Exchange probe.



Demand for the Company’s solutions is being witnessed across Israel, as well as other international markets, particularly as food security becomes a primary concern.

Roots’ strong supply chain is solid despite restrictions put in place by COVID-19 and the Company is confident that it can continue to bring products to market and ensure successful installation and ongoing monitoring.

Roots has a number of commercial outcomes pending and looks forward to providing ongoing updates on RZTO sales and R&D initiatives in the coming months.

Management commentary:

Roots Executive Chairman and CEO, Boaz Wachtel said: *“Roots has made solid progress on a number of fronts during the quarter, highlighted by efforts to strengthen our patent position, successful R&D initiatives and securing more orders for our RZTO technology to existing customers.*

“As food security becomes a primary concern in many economies, demand for our RZTO technology continues to grow. Despite restrictions put in place due to the outbreak of COVID-19, Roots’ supply chain and manufacturing facilities have remained uninterrupted and we are confident that the Company can continue to deliver solutions to customers quickly and efficiently.

“The Company has a number of live orders in train, which look set to convert to binding sales in the coming months.”

-ENDS-

The following table sets out the information as required by ASX Listing Rule 4.7C.3 regarding payments to related parties of the entity and their associates:

Related Party	Amount	Description
Directors (Executive)	US\$37,023	Periodical Director Fees in accordance with Director Agreements
Directors (Non-Executive)	A\$26,900	Periodical Director Fees in accordance with Director Agreements
Everblu Capital Pty Ltd	-	Capital Raising Fees
Everblu Capital Pty Ltd	A\$100,000	Corporate Advisory Fees

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.

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. 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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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.

ⁱ <https://www.marketresearch.com/QYResearch-Group-v3531/China-Greenhouse-Horticulture-Research-Report2018-11506937/>

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

Appendix 4C

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Name of entity

Roots Sustainable Agricultural Technologies Ltd

ARBN

619 754 540

Quarter ended ("current quarter")

30 June 2020

Consolidated statement of cash flows	Current quarter US\$'000	Year to date (6 months) US\$'000
1. Cash flows from operating activities		
1.1 Receipts from customers	4	51
1.2 Payments for		
(a) research and development	29	12
(b) product manufacturing and operating costs	(3)	(14)
(c) advertising and marketing	(142)	(370)
(d) leased assets	-	-
(e) staff costs	(68)	(233)
(f) administration and corporate costs	(109)	(209)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	-	-
1.5 Interest and other costs of finance paid	15	14
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (institutes)	(6)	9
1.9 Net cash from / (used in) operating activities	(280)	(740)
2. Cash flows from investing activities		
2.1 Payments to acquire:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	-	3
(d) investments	-	-
(e) intellectual property	-	-
(f) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter US\$'000	Year to date (6 months) US\$'000
2.2	Proceeds from disposal of:		
	(a) entities	-	-
	(b) businesses	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) intellectual property	-	-
	(f) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	(45)	(43)
2.6	Net cash from / (used in) investing activities	(45)	(40)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of shares	161	515
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	243	243
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	17	(48)
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	421	710

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	169	341
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(280)	(740)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(45)	(40)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	421	710

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Consolidated statement of cash flows		Current quarter US\$'000	Year to date (6 months) US\$'000
4.5	Effect of movement in exchange rates on cash held	4	(2)
4.6	Cash and cash equivalents at end of period	269	269

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter US\$'000	Previous quarter US\$'000
5.1	Bank balances	269	169
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	269	169

6.	Payments to related parties of the entity and their associates	Current quarter US\$'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	(84)
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-
Payments in Item 6.1		
	Salaries and wages paid to Directors and/or Director related entities	\$65k
	Corporate advisory fees paid to a Director related entity	\$19k

7. Financing facilities

Note: the term "facility" includes all forms of financing arrangements available to the entity.

Add notes as necessary for an understanding of the sources of finance available to the entity.

	Total facility amount at quarter end US\$'000	Amount drawn at quarter end US\$'000
7.1 Loan facilities	243	243
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 Total financing facilities	243	243

7.5 Unused financing facilities available at quarter end

-

7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

Loan Facility 1

Lender: Chifley Portfolios Pty Ltd

Interest rate: Fixed sum of A\$35,000

Maturity: 90 days after the Execution Date unless otherwise extended by mutual agreement.

Security: Unsecured

Loan Facility 2

Lender: Aldo Sacco

Interest: Fixed sum of A\$50,000

Establishment Fee: Fixed sum of A\$50,000

Maturity: 60 days after the Execution Date unless otherwise extended by mutual agreement.

Security: Unsecured

8.	Estimated cash available for future operating activities	US\$'000
8.1	Net cash from / (used in) operating activities (Item 1.9)	(280)
8.2	Cash and cash equivalents at quarter end (Item 4.6)	269
8.3	Unused finance facilities available at quarter end (Item 7.5)	-
8.4	Total available funding (Item 8.2 + Item 8.3)	269
8.5	Estimated quarters of funding available (Item 8.4 divided by Item 8.1)	0.96

8.6 If Item 8.5 is less than 2 quarters, please provide answers to the following questions:

- Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: Yes.

- Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: Yes, the Company is planning to raise additional capital in the next quarter to enable the Company to continue to fund its operations. This has previously proven to be successful. The Directors are in discussions to optimize funding options available.

3. Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Yes, the Company expects to be able to continue its operations and meet its business objectives based on the current cashflow forecast prepared for internal purposes.

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 30 July 2020

Authorised by: The Board of Roots Sustainable Agricultural Technologies Limited
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.