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Roots' RZTO two in one cooling and heating technology increases harvest yield of cannabis by 40%

- **Roots proprietary Root Zone Temperature Optimisation (RZTO) heating and cooling technology has increased the harvest yield of cannabis flowers by 40 percent**
- **RZTO heating system reduced typical cannabis plant growing cycle by 30 percent**
- **Results were achieved at cannabis producer in Northern California following a commercial sale and installation in April 2019**

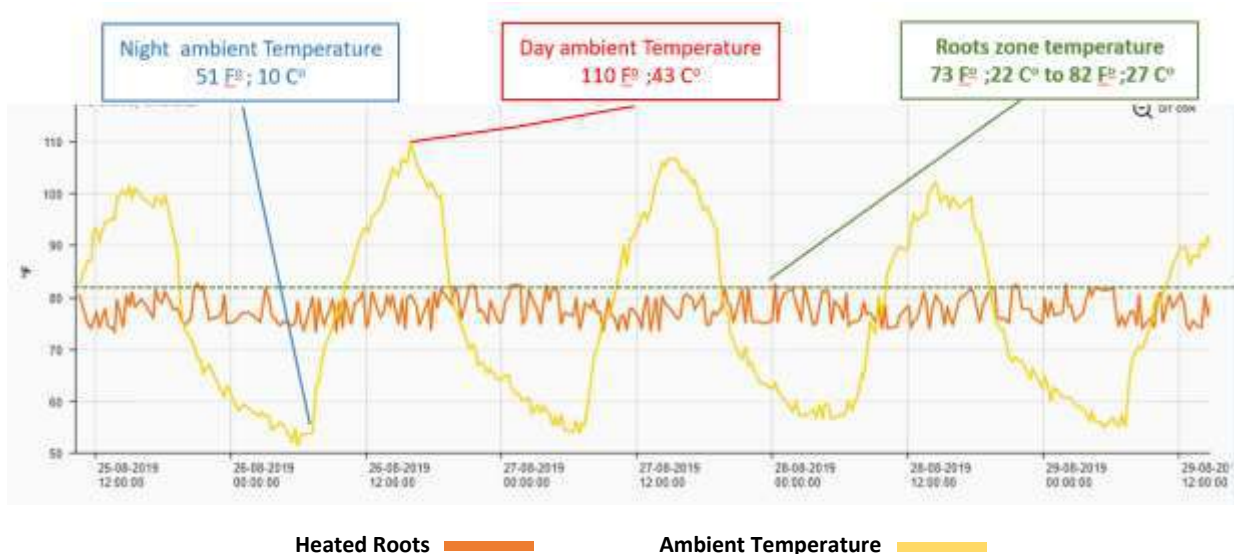
Roots Sustainable Agricultural Technologies Limited (ASX:ROO, Roots or Company) has used its Root Zone Temperature Optimization (RZTO) technology to increase the harvest yield of cannabis by 40 per cent compared to previous years at the growing facilities of Ivo Lopez of Mendocino Natural Farms in Northern California.

In addition to increased yield, the projected number of harvests per year at the facility is predicted to double through a 30 percent reduction in annual growth cycles.

Following the initial sale in April 2019, the installation was completed during early spring with growing taking place throughout summer amid severe temperature fluctuations. Extreme temperatures significantly impact cannabis harvest production and crop quality.

Using Roots' upgraded RZTO system, the roots of the cannabis crops were heated at night to remain at a stable range of approximately 23 degrees centigrade, despite air temperatures in the hoop house frequently dropping below 10 degrees centigrade.

Root zone temperature comparison during summer



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Ivo Lopez, the Head Grower at Mendocino Natural Farms in Northern California, stated that "Root Zone Temperature Optimisation (RZTO) technology increased the harvest yield of cannabis by 40 per cent compared to previous years."

Roots' CEO, Dr. Sharon Devir said, "We are extremely satisfied with the harvest results seen on cannabis. The results have validated the multiple benefits our two-in-one heating and cooling technology can provide to high worth crops by rapidly improving growing cycles and increasing resistance to extreme weather conditions.

"Based on increased production and quality, RZTO technology will allow cannabis growers to generate an attractive and expeditious return on investment compared to similar cooling and heating technologies. The results will allow Roots to build tangible case studies which can be leveraged to secure further sales and complement the company's sales efforts in the North American cannabis market."

The results are consistent with similar results from other North American and Israeli cannabis growers who bought the RZTO system and reaffirm Roots' sales approach into North America.

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About Root Zone Temperature Optimization (RZTO):

Root Zone Temperature Optimisation (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.

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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