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Roots' RZTO cooling technology increases cannabis yield in high-tech greenhouse by up to 118%

- Roots' proprietary Root Zone Temperature Optimisation (RZTO) cooling technology has increased the yield of cannabis dry flowers by up to 118 percent.
- Results were achieved at the US growing facilities of premium cannabis producer CannDESCENT and follow a commercial sale and installation in May 2019.
- It is the first time Roots' cooling technology has been used in a climate-controlled greenhouse facility.

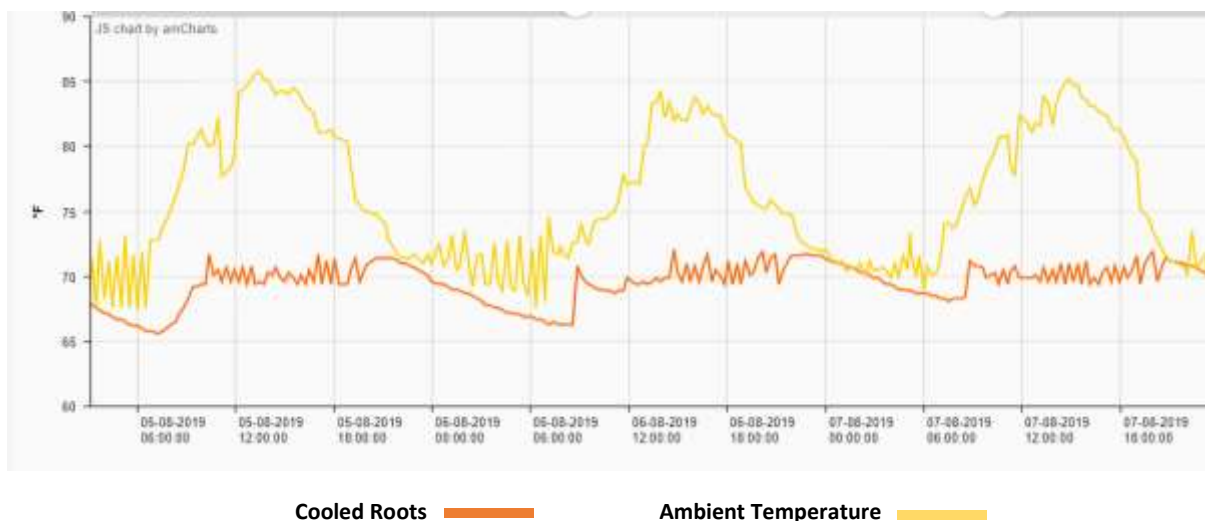
Roots Sustainable Agricultural Technologies Limited (ASX:ROO, Roots or Company) has increased the yield of dry cannabis flowers by up to 118 per cent compared to uncooled crops from various strains within a climate-controlled greenhouse at CannDESCENT's facilities in Southern California.

Roots' upgraded Root Zone Temperature Optimisation (RZTO) cooling system was used to stabilise the roots of cannabis plants at an optimal temperature of 21 degrees Celsius (70F), despite ambient air temperatures within the greenhouse reaching 30°C (85F) and outside temperatures topping 43°C (120F).

Increases of 30 and 118 per cent were achieved during the US summer on two cannabis strains of 400 and 200 cooled plants respectively within a climate-controlled greenhouse utilising wet mattresses and fans.

These results follow an initial sale to premium cannabis producer CannDESCENT in May with the installation completed in early June 2019.

Root zone temperature comparison during summer



Roots' CEO, Dr. Sharon Devir said, "These impressive results demonstrate the effectiveness of our root zone cooling technology when used in conjunction with traditional air-cooling systems. Southern California's dry desert climate varies considerably during the summer months, with temperatures fluctuating between 20 and 40 degrees Celsius. Extreme heat has a detrimental impact on cannabis production and crop quality.

"These results verify the effectiveness of our root zone technology on greenhouse-grown cannabis, more than doubling dry flower yield in certain strains to quickly generate a return on investment for growers while also lowering energy costs associated with traditional heating and cooling systems."

"The results also reinforce the uniqueness of our offering within the highly competitive cannabis market and are consistent with those achieved by cannabis growers in both North America and Israel.

Daniel McClure, Cannadescent's VP Agronomist, added, "Roots' RZTO technology complemented our existing cooling methods to significantly increase the yield of our unique cannabis strains. In addition to increased yield, Roots' technology also increased the quality of the crops."

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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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