ASX and MEDIA RELEASE

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Roots' RZTO heating technology boosts yield of Yardlong Beans by 40 percent

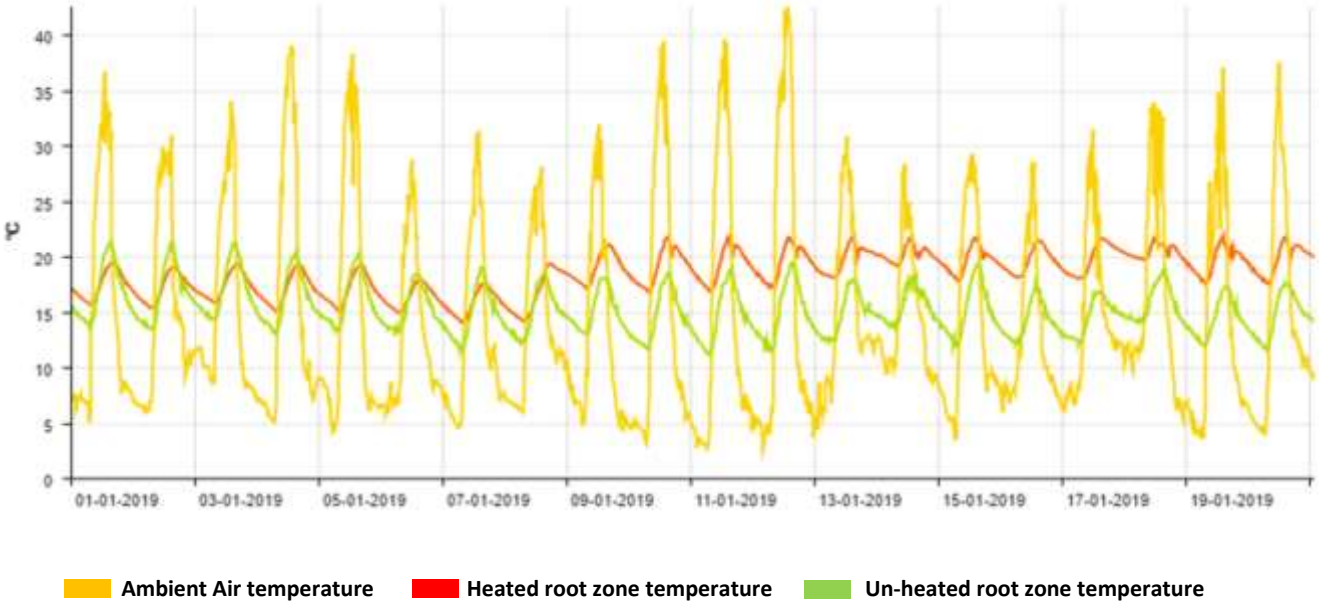
- **Heated plants increased yield of Yardlong Beans by 40 percent compared to unheated control crop.**
- **Root Zone Temperature Optimisation (RZTO) heating system stabilised crop roots at optimal 20 degrees, despite ambient air temperatures frequently dropping to five degrees.**
- **Follows successful RZTO heating and cooling on multiple crops including basil, lettuce, chives and cucumber.**
- **Roots is the only company with commercial two-in-one root zone heating and cooling technology.**

Roots Sustainable Agricultural Technologies Limited (ASX: ROO, Roots or **Company**) Root Zone Temperature Optimisation (RZTO) heating technology has increased the yield of Yardlong Beans, by 40 percent more than unheated control crops.

Yardlong Beans (Vigna unguiculata sesquipedalis), are a staple crop in most Asian cuisines as well as equatorial Africa and South America.

The results came from a grower in Southern Israel who had purchased a Roots RZTO system and conducted the growing in hoop houses during the Israeli winter from November 2018 to March 2019. The region is arid and known for severe temperature fluctuations between day and night. Using the hybrid coil-based ground source heat exchange and heat pump version of the Roots RZTO system, the roots of Yardlong Beans plants were heated at night to around 20 degrees. This stabilised the plants despite air temperatures in the hoop house frequently dropping to five degrees while roots of control plantings fluctuated between 13 and 18 degrees.

Yardlong Beans root zone temperaratures with RZTO



A traditional warm-climate crop, the heated Yardlong Beans plants continued to grow throughout the winter months, whereas the control crop without the benefit of Roots RZTO technology virtually stopped growing from December onwards.

Roots CEO, Dr Sharon Devir said, "The Yardlong Beans family is cultivated for human food throughout Asia, northern Africa and Southern America and is a staple of most Asian cuisines. However, a challenge for these crops that are generally grown around the tropics and temperate areas is that cool temperatures significantly impact the production and quality of the harvest. So they're typically only grown in summer months. Our RZTO heating and cooling technology has mitigated external weather conditions, allowing the farmer to grow Yardlong Beans year-round and benefit from premium prices in the off-season."

The farmer who grew the crops, Sharon Cheri, said ,"Roots' heating technology has lengthened our growing cycle, increased crop yield and reduced incidences of plant disease. In addition, root zone heating uses significantly less energy than air heating systems."

To view a video explaining the difference in yields go to https://rootssat.com/press/

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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 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

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.

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