Root Zone Heating & Cooling of Protein based plants
Roots - Sustainable Agricultural Technologies

- Israeli-based and publicly traded on the Australian Stock Exchange (ASX: ROO), Roots Sustainable Agricultural Technologies Ltd. is developing and commercializing disruptive, modular, cutting-edge technologies to address critical problems in agriculture today, including plant climate management and the shortage of water for irrigation.

- ROOTS developed proprietary know-how and registered patents to optimize performance, lower installation costs, and reduce energy consumption.
Root temperature is the most influential factor in plant physiology for growth, productivity and quality. An optimum temperature range is essential to productivity, health and output quality.

ROOTS’ technology cools and heats root zone temperatures to maintain the optimum temperature range all year round.
ROOTS’ RZTO technology performance

+Cooled
+Cooled
+25%

Un-Cooled
Un-Cooled

+253%

+66%

Heated
Heated

Un-Heated
Un-Heated

>100%

*Extending growing cycle

*Cooling roots over 100%*  
*Extending growing cycle*

*Cooling roots over 25%*  
*Extending growing cycle*

*Cooling roots over 253%*  
*Shortening growing cycle*

*Cooling roots over 66%*  
*Shortening growing cycle*
Growing interest in meat replacement crops has accelerated the search for high protein vegetables and technologies that can increase the protein content in any given crop. Reasons include health benefits of plant-based proteins over meat sources, ethics around livestock management, and environmental issues.

Roots has tested the effects of its RZTO technology on several protein-laden crops to increase the content of leghemoglobin.

Leghaemoglobin is a form of protein in plants and contains Heme. Heme is the key ingredient in plant-based meats (similar in look, preparation style and flavor as beef, but without the environmental impact and negative health effects of real beef). Beans and peas are examples of crops from which Heme can be extracted.
RZTO technology’ results on Snow Peas
Sun-grown, open field in Beit Halevy

**Cooled** plants increased by 140% compared to un-cooled control crop + 140%
RZTO technology’ results on Green Beans
Sun-grown, open field in Beit Halevy

**Cooled** plants increased yield by 167% compare to un-cooled control crop

+ 167%
RZTO technology’ results on Protein plants

Up to 5°C difference between cooled roots and uncooled roots. Stable & optimal temp. range
Growing Mediums
Pots | Growbags | Soil

Pot (vertical solution)

Soil (Horizontal solution)

Stub (vertical solution)

Growbag (Horizontal solution)
Thank you

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