Innovating the Climate Control Landscape

Root-Zone Temperature Optimization Technology
What is RZTO technology?

Root temperatures influence all parameters of the plant's physiology and an optimum RZT range is essential for a plant's robust growth, productivity and quality.

The RZTO technology is a closed loop system exchanging heat in water flowing between underground inserted coils and root zone area.

Leveraging the principle of Ground Source Heat Exchange (GSHE), up to 10 degrees Celsius heating and cooling of root zone is achieved by the system in a very cost-effective and environmental friendly ways.

The results of RZT optimization: significant yield increase (10-60% in most cases), better quality, shorter growing cycles, off season planting, reduction in air climate control expenditures, low environmental signature.

NOTE: At times, a hybrid system with GSHE coils and efficient heat pump is used in conjunction.
Temp. comparison: Heated vs. Untreated

Up to 5 degrees deference between heated roots and unheated roots.
Energy Saving

Cost of heating [NIS/quarter of an Acre/day]

- roots zone with ROOTS system 18.8 \(^1\)
- Traditional air heating systems of the canopy 233 \(^2\)

Saving 90% of heating energy costs

\(^1\) using 1.5 kw circulation pump only  \(^2\) Traditional air heating versus ROOTS is 233 and 18.8 NIS respectively (the Israeli extension service)
Roots size comparison: 3 days from planting
Plant size comparison: 10 days from planting

Untreated  Heated
Plant Height comparison: 30 days from planting

Untreated vs Heated
Harvest results comparison: 39 days from planting

Untreated vs Heated
Plant shelf life comparison: 8 days from harvest
Herbs | heating Basil roots

- 66% additional yield
- 35% size increase
- Increased profitability due to premium prices
- Very low energy consumption

Return on investment
in US prices - 18 months | Spanish prices - 2 years | Israeli prices - 2-3 years
Governmental granting *

Israeli farmers are eligible to have up to 30% subsidy for any Basil Roots based system