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.
Cooling NFT lettuce during the summer

Ground source heat exchange installation without heat pump. Operates only with a closed cycle circulation pump

(*)Israeli NFT lettuce, Hybrid system, Center of Israel
Temp. comparison: prior and post system activation

Up to 11 degrees difference between air Temp. and nutrient Temp.
Farmer’s testimonial video

Cooling Hydroponic NFT (Nutrient Film Technique)

the outdoor temperature of the greenhouse,
Economic benefits

Based on economic analysis produces by the Israeli ministry of Agriculture - ROOTS system provided the following benefits:

• **10% yield increase**

• **80% energy savings compared with conventional existing cooling NFT technologies** (right picture)

• **Substantial air pollution reduction**