

Reverse Osmosis-Capable Subsurface Drip Irrigation

Business Opportunity

An opportunity exists for interested parties to invest in the development of a new sub-surface drip irrigation technology.

The technology enables crop producers to use brackish (with a high salt content) water as a source of irrigation for high value crops, where other sources of water are unavailable.

The Market

The overall need for irrigation systems is increasing worldwide due to a number of driving factors including water and rainfall shortages, increased water usage trends, as well as continued pressure on farmers to obtain higher crop yields by industry and greater water usage efficiency by governments.

In many agricultural precincts there are large numbers of existing groundwater bores that access aquifers containing brackish water.

There are three traditional approaches to using brackish water for irrigation:

- The water itself may be directly used. This suffers from the obvious problems of sensitivity of the plants to salt, which leads to drainage issues and ultimately damage to the soil and loss of yield.
- Mixing or alternating brackish water irrigations with fresh water irrigations. This requires exacting management, does not eliminate all the problems of yield loss and requires leaching to remove salts from the root zone.
- Desalination using a semi-permeable reverse osmosis (RO) membrane has been explored but high operating costs make this too expensive to use long term.

This technology will be comparatively cheap to purchase and will have operating costs comparable to conventional sub-surface irrigation systems.

The Technology

The inventors of this technology have used plants themselves to create the pressure gradients required to draw water through reverse osmosis membranes.

They use a salt selective semi-permeable barrier (similar to a reverse osmosis or RO membrane) in the lumen of the drip line, to supply purified crop water from brackish water.

A patent application for this has been submitted.

The Team

This technology was developed by Associate Professor Greg Leslie (UNSW, Centre for Membrane Science and Technology) and Professor Bruce Sutton (University of Sydney, Faculty of Agriculture, Food and Natural Resources).

Investment Opportunity

NewSouth Innovations is seeking investment partners to establish a global business opportunity specifically targeting sub-surface drip irrigation markets for farming regions which only have access to brackish water.

Further Information:

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