Moistube

MOISTUBE SUB-SURFACE SLOW RELEASE IRRIGATION PRODUCTS

Plants absorb moisture by a cycle of transpiration (the loss of water) and absorption of moisture through the roots by osmosis. Osmosis is the movement of water molecules through a selectively-permeable membrane.

At the core of the technology in the Moistube family of products is an inner membrane that simulates the properties of plant tissue and feeding roots. This membrane releases water at a rate consistent with a plants’ ability to ingest it in a manner very similar to osmosis.

The inner layer is a polymeric semi-permeable membrane. The outer layer is a protective permeable material. There are many invisible nano-pores in the semi-permeable membrane. In fact, there are approximately 100,000 holes (pores) per square centimetre and the diameters of the holes range from 10~900 NM.

Moistube’s membrane has been applied into 3 different applications for irrigation namely Moistube, Micro Reservoir and Smart Irrigator.

For all 3 types, the system is composed of 3 main parts, the water supply, the pipes delivering the water, and the Moistube delivery product. All offer full time, continuous and dynamic irrigation.
Moistube, Micro Reservoir and Smart Irrigator all work with relatively low pressures and operate as gravity fed systems when connected to a water tank. Irrigation networks are simple to install, very cost effective, and extremely low water use when compared to any other existing irrigation system currently available.

### Moistube Irrigation System

- ![Moistube Diagram](image1)

### Micro Reservoir Irrigation System

- ![Micro Reservoir Diagram](image2)

### Smart Irrigator

- ![Smart Irrigator Diagram](image3)

The membrane in all of the Moistube range functions as follows:

Due to the effect of potential energy (that can be in various forms), the water will pass through the membrane directly to the area with low potential energy. This potential energy may be solute potential, soil water potential, atmospheric water potential, root water potential, pressure potential etc. This is also exactly how water passes through roots and plants.
Moistube consists of tubes available in lengths from 10m to 200m connected to a network of pipes and a water supply.

The Water Supply can be either a water tank (the gravity of the head in the tank provides sufficient pressure) or mains water (with a pressure reducing valve).

Moistube works best on level land or when following the contours of the land. Moistube requires a continuous water source to work effectively.

Applications:
- Lawn and turf
- Crop irrigation (small to large scale)
- Fruit trees growing on level land
- Domestic gardens
- Vegetable growing
- Major landscape Projects

Micro Reservoir (MR) is a 3 litre bag using the same inner membrane as Moistube. It is designed to water plants and trees that are in sloping and steep sites.

Micro Reservoir does not require a continuous water supply. Instead it needs refilling approximately every 15 days.

Applications:
- Fruit Trees on sloping and steep sites
- Desert Forestation
- Locations with only mobile water supply
- Major landscape projects

Smart Irrigator consists of a spike using the same inner membrane as Moistube. The top of smart irrigator comprises a thread compatible with large plastic soft drink bottles, allowing low cost and recycled use of water storage containers. 2 litres of water will last 15-30 days depending on soil type.

Applications:
- Pot Plants
- Retrofitting in domestic gardens or commercial landscape projects
- Small gardens at either home or the office
- Anywhere that installing an irrigation network is impractical
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| Moistube Irrigation System | Micro Reservoir Irrigation System |

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