

advaitaTM
green energy

IRRIGATION
TECH



About Us

At Advaitaa Green Energy we combine technology and heart to create sources that fuel progress in a green way. The steady growth, coupled with a rise in urbanization has led to a sudden decrease in the availability; along with an exponential rise in the demand of fresh water. Advaitaa Green Energy leverages on both these trends toward the development of a more sustainable economy by conserving fresh water - turning challenges into opportunities. Advaitaa Green Energy designs, integrates and engineers elements of mechanical biological treatment plants, renewable energy generation, wastewater recycling, greening technologies and sustainable living.



Our Presence

Advaitaa Green Energy (AGE) was formed to leverage on the emerging trends in the dynamic renewable energies industry of the Asian Pacific region. AGE, an India based engineering company has a presence through our partners in Australia and the South Asian region, with offices in Goa, New Delhi and Melbourne. It provides complete tailor made solutions to clients, depending on their needs and some of the technologies adopted are automated irrigation systems, automated municipal solid waste treatment plants, wastewater recycling plants and micro systems targeted towards irrigation, solid waste management and wastewater treatment. AGE has a vision to become the forerunner in irrigation & waste management industry in India and contributing to community empowerment through green energy.



Services Offered

The company's members and partners bring with them a wealth of experience spanning diverse segments of the industry in which they have been engaged. They offer:

- Irrigation technologies that save large amount of water for all types of lawns, vegetables, fruits, trees, etc.
- Engineering expertise and execution of Solid Waste Treatment Plants, Dry Anaerobic Digestion Plants, Wet Anaerobic Digestion Plants and Wastewater Recycling Plants.
- Project design engineering, financial modelling, consultation.
- Expertise and implementation of other green technologies.
- Access to a network of engineers, architects, landscape artists and consultants in associated fields.
- Modelling of Eco Villages and Eco City Concepts.
- In the process, AGE aims at providing job generation, R&D of innovative technologies and social empowerment programs for communities in need.

AGE is well positioned to build synergies and leverage on their combined expertise to develop a more sustainable and prosperous future.

MOISTUBE TECHNOLOGY

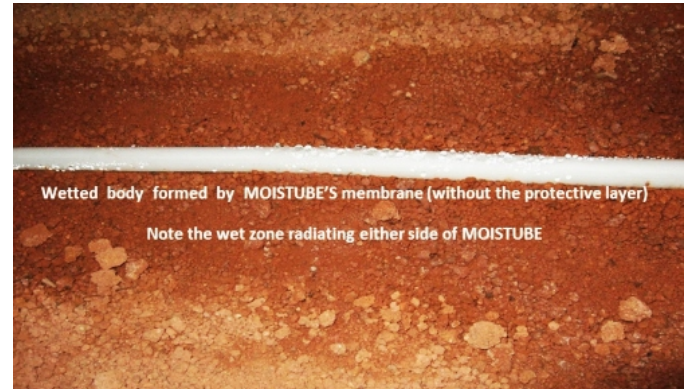
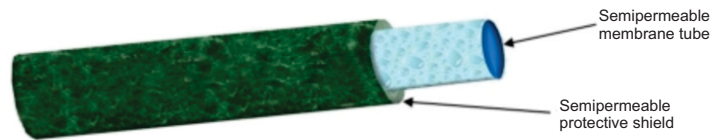
MOISTUBE SUB-SURFACE SLOW RELEASE IRRIGATION PRODUCTS

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 2 different applications for irrigation namely *Mositube*, & *Micro Reservoir*. For both 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

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



Moistube works 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.

Comparison Between Conventional Method & Moistube

Savings in a 100 sq.mtr area	Conventional Method (Sprinklers)	Moistube
Water Savings	Uses minimum 3000 Litres per day for small plants/lawn.	Uses just 200 Litres per day for small plants/lawn.
Energy Usage	High	Low (Gravity Fed)
Labour Usage	High	Low (Automated System with 1 time installation)
Water Supplied	Few Hours per day	24 Hours per day
Installation	Complex installation with need of professional installation team	Easy Installation with no need of any professional knowledge
Increase in yield	Average	Upto 50%

Comparison Between Conventional Method & Moistube Ring

Savings per tree	Conventional Method (Drip)	Moistube Ring
Water Savings	Uses minimum 36 Litres per day per tree (1x1m).	Uses just 5 Litres per day per tree (1x1m).
Energy Usage	High	Low (Gravity Fed)
Labour Usage	High	Low (Automated Installation)
Water Supplied	Few Hours per day	24 Hours per day
Installation	Complex installation with need of professional installation team	Easy Installation with no need of any professional knowledge.
Increase in yield	Average	Upto 50%



TRIAL INSTALLATION OF MOISTUBE AT A SITE IN GOA VELHA



Installation of Moistube at a gap of 2 feet each, in a 4 inch deep trench in an area of 180 sq. ft



The sweating of water through its micro pores.



Water being absorbed by the soils capillary action



A Before & After Image (gap of 1 month).



The Area where trial was conducted is clearly visible due to the quality & colour of lawn.

KEY OBSERVATIONS OF THE TRIAL

Water Savings - Saving around 450 litres of water per day as compared to the conventional method (around 13500 litres in 4 weeks).

Power Savings - Saving around 22 KW of energy per day as compared to using a sprinkler in the same area (around 600KW in 4 weeks).

Significant Growth - As per the landscape designer at site, the lawn in the trial seemed to have grown at a rapid speed. According to her observation, the patches in the trial are now of the same size as that of the area around, which took only 4 weeks to grow as compared to the normal 4 months. Also the patches are of a darker green shade suggesting that the lawn in the trial is fresher and healthier due to the continuous water supply.

36 HECTARE TRIAL IRRIGATION PROJECT BARQA AL SUQOR, WESTERN REGION, ABU DHABI

Summary Of Final Report - Visual Format

Week 1- First Seed Germination 6 Days After Planting



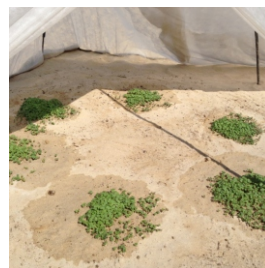
Moistube



Leaky Pipe



Key Clip Drip



Australian
In-line Drip



Rainbird
In-Line Drip

Week 2- Plant Photos



Moistube



Leaky Pipe



Key Clip Drip



Australian
In-line Drip



Rainbird
In-Line Drip

Week 6- Plant Growth Comparison



Moistube (34cm)



Leaky Pipe(23cm)



Key Clip Drip (24cm)



Australian
In-line Drip (23cm)



Rainbird
In-Line Drip (24cm)

Plant Growth Test Result Summary

TECHNOLOGY	SIZE NO. 1	SIZE NO. 2	AVERAGE	PERCENT	% GROWTH IMPROVEMENT OF MOISTUBE
MOISTUBE	34	33	33.5	100.00%	N/A
LEAKY PIPE	23	25	24	71.64%	28.36%
KEY CLIP	23	24	23.5	70.15%	29.85%
IN LINE DRIP	23	20	21.5	64.18%	35.82%
RAINBIRD	24	19	21.5	64.18%	35.82%
					32.46% (AVERAGE)

Plants irrigated by moistube are on an average 32.46% taller than the plants irrigated by the other four conventional irrigation systems. Bio mass results are expected to be very consistent with these ratios.

The Water Savings Test Result Summary

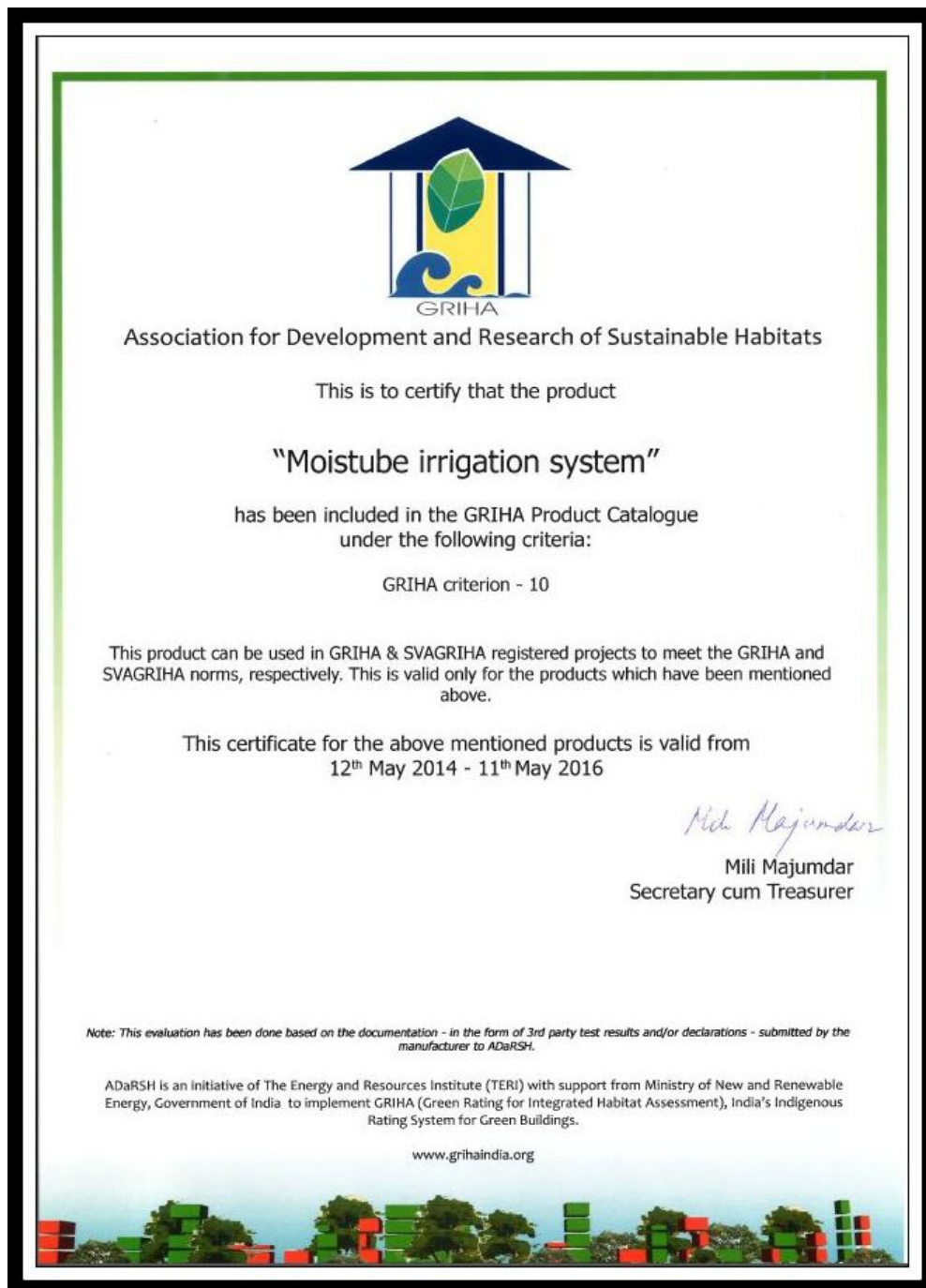
08.11.2013	WATER USE	PERCENT	% WATER SAVING BY MOISTUBE
MOISTUBE	20191	22.20%	N/A
LEAKY PIPE	90960	100.00%	77.80%
KEY CLIP	53482	58.80%	36.60%
IN LINE DRIP	77286	84.97%	62.77%
RAINBIRD	59864	65.81%	43.62%
			55.20% (AVERAGE)

The trial was designed to provide a direct comparison of the water use between the 5 selected different irrigation systems. The results provide clear and conclusive evidence of the water savings achieved by the use of Moistube. The resultant plant growth and water saved while maintaining healthy vibrant plants in the high temperatures experienced in the western region supports this conclusion.

Moistube Technology Is Certified By GRIHA

(An Initiative By TERI For Sustainable Habitat)

And Currently Is The Only Approved Irrigation Technology
Applicable For "Green Rating" For Landscaping



DID YOU KNOW?

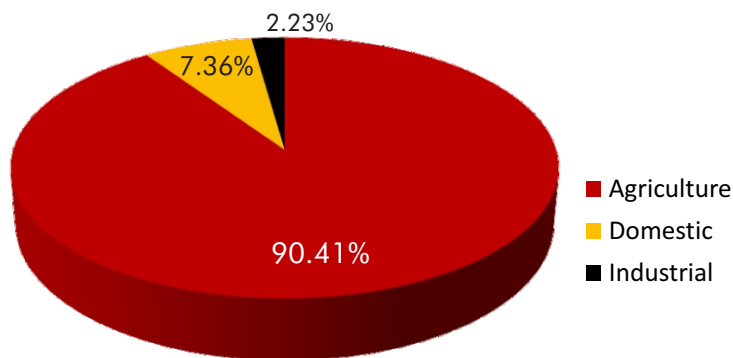
MORE THAN 70% OF
THE EARTH'S SURFACE
IS COVERED BY WATER

- Only 2.5% Of This Supply Is Considered Fresh Water.
- The Rest Is Found In The Form Of Salt Water In The Oceans.
- Of The Fresh Water That Exists, Most Is Locked Up In Glaciers And Ice Caps.
- Water Can Also Be Found In The Form Of Clouds And Humidity In The Soil.



Why Moistube?

ANNUAL FRESH WATER WITHDRAWALS IN INDIA (761 Billion Cubic Meters as of 2011)



COMPARISON WITH CONVENTIONAL METHOD

Conventional Method				Moistube Irrigation			
Area (in sq. mtrs)	Water used (ltrs per sq.mtr)	Total/Day	Per Annum	Area (in sq. mtrs)	Water used (ltrs per sq.mtr)	Total/Day	Per Annum
4000	30	120000	4,38,00,000	4000	2	8000	29,20,000

Total Saving Per Annum in 1 Acre
4,08,80,000 Litres