Magnetic Water Myth or Magic?

47. Aquinas

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Introduction:

This project is all about how saltwater can be treated and be used for irrigation purpose. We have chosen this project so as to find solution to a problem which faces most farmers who use saltwater for irrigation example in regions such as Mtwara. Farmers have been harvesting lower than average yields because salt affects plant growth, and this was proved in an experiment we conducted. By introducing this project, the solution we have come up with to solve the problem of saltwater is by designing simple machine made up of simple material such as empty tins, magnets and elastic material, which is responsible for treatment of saltwater making it useful for irrigation and this will help most farmers or gardeners to have good harvest and also the method is cheap and environmental friendly.

Magnetism is a mysterious phenomenon to most people, and even many of us who have taken a few courses in college physics often don't feel we really "understand" it.

Method:

Although magnetic water treatment (MWT) products have been promoted since the 1930's, they have not received very wide acceptance within the engineering community, and the question of whether or not they are effective is still very much open

Our research was based on observation and reviewing different books and articles. Through observation we came across the repeatedly view of poor and few crops in farms due to saltwater, example in Chipuputa, Msijute and Ufukoni areas all in Mtwara region.

The effects of saltwater in plants was clear. Salt is a compound and can be broken using different methods and one way to solve this problem is by treating saltwater. Using the knowledge of breaking compounds using magnets, we came up with a design of a machine which can be used to treat salt water making it suitable for irrigation.

The machine is made up of tins, magnets and elastic material. It is designed in a way such that it has magnetic effect on the inside hence when the saltwater pass through it, the salt compound is broken into its elements which has no effect as long as irrigation is involved

Saltwater treatment machine

WATER USED	TREATED WATER	SALT WATER	RAIN WATER
5 DAYS	No germination	No germination	The vegetables started germinating
10 DAYS	The vegetables stated germinating	No germination	The vegetables were growing well
17 DAYS	The vegetables were growing well	The seeds started germinating	The vegetables were growing well
21 DAYS	The vegetables were growing well and ready for being consumed	The vegetables were not growing well compared to other heaps	The vegetables were growing well and ready for being consumed

TREATED WATER	SALT WATER	RAIN WATER
4 cm	0	6 cm
2 cm	0	6 cm
1 cm	0	9 cm
3 cm	0	2 cm,
6 cm	0	6 cm
5 cm	0	7 cm
2 cm	0	5 cm
5 cm	0	4 cm
3 cm	0	8 cm
4 cm	0	5 cm

Table showing comparison between measurements of vegetables from treated water, saltwater and control after fourteen days

Control (Rain Water)

Treated

Untreated

Control (+ 9 days)

Treated (+9 days)

Untreated (+9 days)

The saltwater which clearly leads to poor development of plant, when treated can lead to nearly as good results as that brought by rain water. Hence, treated water can bring about good results when used for irrigation.

We did some experiments to show how salt affects the plants and the effectiveness of our machine which was used to treat water. We used the machine we made to treat water and used the treated water to irrigate a seedbed on which we planted vegetables. We also prepared two more seedbeds and planted the same vegetable but used different water to irrigate, one we used salt water while the other we used rain water.

From the results it clearly shows the effectiveness of the machine. When saltwater is treated by this machine, the treated water can be used as an alternative to rain water for irrigation. Meaning, farmers can be sure to get more than average yields and may cultivate any time in the year by just using the treated water.

Conclusions

People in regions accessing saltwater don't engage themselves much in agriculture and for those who do, get low and poor results and regions like Mtwara food costs are too much money.

This is because of saltiness of water they use for irrigation are affecting growth of crops or plants grown, But the use of simple machine that we have designed, when tested, brought about good results of plant growth. When used by farmers will increase the productivity of crops which will lead to increase of food products and this will lead reduce high costs of food available in coastal regions especially our region.

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