



Bamboo Irrigation System as a Solution To Irrigation Problems

41. Mzumbe



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Introduction:

Our project thus aims at solving the problem by constructing bamboo irrigation system. The farmers claimed on the effects of the available methods for irrigation such as the furrow and gravity irrigation which may lead to soil erosion and the high cost of pipes and machines in pipe and drip irrigation. Through data collection, the idea of using bamboo for irrigation enlightened our minds. Bamboo has a hollow stem which can be used for irrigation. Its ability to grow on different lands and its durability makes it a perfect means for irrigation.



Method:

Basing on two experiments, in which experiment number one was to show the bamboo system on the places with good supply of water such as homes and experiment number two was to show the efficiency of bamboo system on the places with poor supply of water. In the experiment 2, bamboo water wheel was constructed and set in the river around mongwe area in Mzumbe village, around Mzumbe village. The wheel pumped water and sent water to the tank with high pressure .water was then allowed to flow freely \through the bamboo water schemes constructed. The type of irrigation that we aimed at was drip irrigation therefore a used bubble gum was attached at the hole to work as an emitter.

Experiment 1

Small scale farmers and gardens in Mzumbe use can and plastic pipes as a means of home –based irrigation. Construction of these irrigation system is based on little knowledge and local methods of farming.

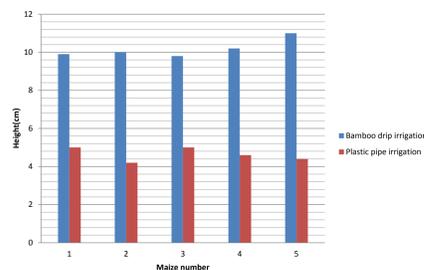
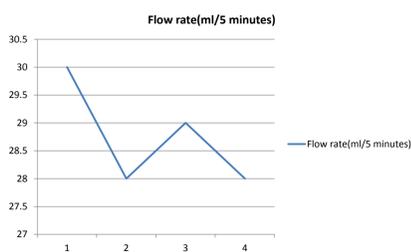
AIM: the aim of this experiment was to construct a home based bamboo irrigation system to show its effectiveness as compared to the local methods of irrigation.



Results:

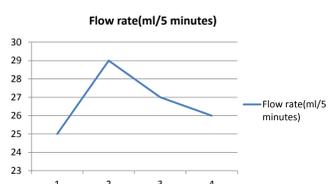
BAMBOO DRIP LINE 1

Emitter number	1	2	3	4
Flow rate(ml/5 minutes)	30	28	29	28



TAMATO PLANT NUMBER	1	2	3	4	5	6	7	8	9
EFFECT	absent								

BAMBOO DRIP LINE 2



BAMBOO DRIP LINE 3

Emitter number	1	2	3
Flow rate(ml/15 minutes)	152	150	148

From experimental data obtained, it can be concluded that a home based bamboo irrigation system can be appropriate solution for gardeners and small farmers around home place or in a stagnant water source. This is because you just need to put the water into the tank and leave it there for irrigation.



Conclusions

By comparing the drip line emitters flow rate, there is small difference in emitter flow rate. This suggests that there is uniformity in flow rate and the plant in the rows get almost the same amount of water at a given time. Moreover, the maize growth rate in bamboo irrigation system was high compared to those in plastic pipe irrigation. Therefore, bamboo irrigation system resulted into good maize growth as compared to irrigation by plastic pipe.

From the data recorded in experiment 2, it is can be concluded that 70% of farmers apply irrigation in farming and 30% of the interviewed farmers don't apply irrigation methods. 57.1% of farmers use river as a water source for irrigation and 42.9% use well as a water source.

References

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- <http://www.newnationsouthsudan.com/agriculture/bamboo-drip-irrigation-an-affordable-solution-for-s-sudan.html>

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