

Water Hyacinth - A Curse or Economic Asset



in Lake Victoria Zone

Mzumbe Secondary School

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Introduction

Lake Victoria is the second largest fresh water lake in the world located in the eastern part of Africa. The lake covers three countries which are Tanzania, Uganda and Kenya where the percentage coverage is 49% in Tanzania followed by Uganda where it covers 45% lastly Kenya 6%

Currently, lake Victoria zone faces a challenge of a wide spreading species known as water hyacinth (weed).

Water hyacinth is a plant that grows and multiplies rapidly covering the surface of water in lake, dam or a pond. Its scientific name is Eichhornia crassipes and it's native of south America.

Through different human activities, it may be a reason for invasion of water hyacinth in the lake. Water hyacinth flowers are beauty and have sweet smell hence used as ornaments in garden ponds.

The hyacinth is said to have entered the lake from Rwanda via river Kagera in 1980's and spread over the wide area of the lake..

Method

The activity was conducted in school garden with an aim of demonstrating how to prepare a compost manure from water hyacinth.

MATERIALS:

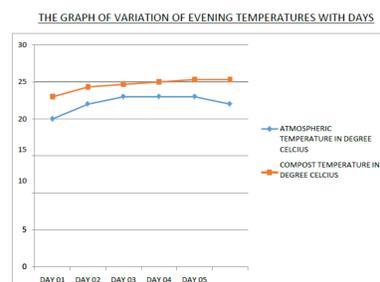
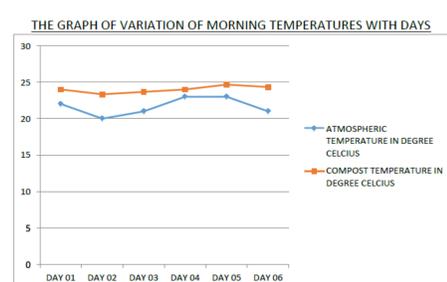
Water hyacinth plants, ashes, hand hoe, bucket, water, thermometer, a meter rule and machete.

Procedure

- Using a hand hoe a rectangular hole with length of 80cm, 60cm width and 19cm depth was dug and the linear measurement were taken using a metre rule.
- Water hyacinth plant were sliced into pieces using a machete, so as to increase surface area for decomposition.
- Sliced water hyacinth plants were introduced into a rectangular hole and mixed with ashes followed by soil. The mixture covered a depth of 10cm. Ashes were mixed with sliced water hyacinth plants to create conducive environment for decomposition of hyacinth.
- 5 litres of water were sprinkled on top of the covering soil so as to keep the mixture moist.
- Temperature of the atmosphere and that of the mixture sample were recorded for each morning and evening for first six days and records were taken.
- The graphs of data collected were as follows:



Results



From the graphs starting with graph of morning records, variation of hyacinth temperature with respect to days continually increases. In our concern, the reason is due to reactions enhanced by micro-organisms in the soil when decomposing the hyacinth and hence releasing some energy as heat. That was the same for evening temperature.

It is our prediction that it will reach a point where temperature will be constant in the coming days, for most of reactions will cease to occur.

When the hyacinth compost is ready, it is extracted and water hyacinth plant residue is separated from the soil and the obtained soil will be applied in the farm as compost manure.

Conclusions

Till the current time, absence of hyacinth in the Lake Victoria seems to be more important than its presence. While waiting for effective measures to totally eliminate water hyacinth, considerable measures may be used.

Effective turning of water hyacinth into compost manure may be a significant measure of eliminating water hyacinth in Lake Victoria.

As in 1997, 'weevil release' was used as a method of water hyacinth elimination in Murchison bay, Uganda but it proved failure to some extent.

The government through Ministry of Agriculture should enhance study classes [shamba darasa] about preparation, advantages and uses of compost made from water hyacinth. People from study classes will act as tutors to other people around the lake hence; it may lead to a serious decrease in water hyacinth around Lake Victoria.

Joint efforts from all three countries sharing Lake Victoria that is Tanzania, Uganda and Kenya is required for provision of education on conversion of water hyacinth into compost manure for it will enhance further studies on this project and effective elimination.

This project sees beyond on publishing journals which will provide new updates and findings about hyacinth compost manure with its related information.

In one way or another, there seem to be adverse effects of using inorganic fertilizers, thus the project once extended will cover the concept of effects of inorganic fertilizers and the use of hyacinth compost manure as its replacement..

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