

# **YOUNG ENVIRONMENTAL SCIENTIST (YES ) 2014**

**Title of the project** : Water Hyacinth- Energy  
from Dreadful plant

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Water Hyacinth at Pallikaranai in Chennai



Water Hyacinth at River Tamirabarani near Srivaiguntam in Tirunelveli District .

# Abstract

## Objectives & scope

- **Lighting Rural and remote areas**
- **Reduce deforestation by giving awareness to rural people who are using firewood for their energy consumption.**
- **Make use of all water resources**
- **Reduce water and air pollution**
- **Protect our Planet to save our eco system**
- **Convert the Water Hyacinth into eco friendly fuel**
- **Advantages of utility of biogas for domestic purpose in rural and remote areas**
- **Convert the waste product of Water Hyacinth into useful one.**

## Methodology

- **There are two types of methodology**
- **Eradication of Water Hyacinth by using Bio medicine Biofine and Chemical Solution Glyphosate.**
- **Preparation of Bio-Gas from Water Hyacinth by Anaerobic Fermentation method .**

# Analysis-1 Eradication of water weed water hyacinth

1. Spraying of medicine **BIO-FINE** – tub 1 containing water hyacinth.
- 2 Spraying of chemical solution **GLYPHOSATE** – tub 2 containing water hyacinth .

Before treated with bio-fine & Glyphosate on 20-12-2013



# METHOD-1

Sl. No.	Date	Treated with Bio-fine (Extracted from Plants)	Quantity of Bio-fine used	Observation and Remarks
1	20.12.2013	Bio-fine sprayed on the plants by wetting all the leaves.	Approx. 50 ml	Leaves were fresh and stabilized.
2	21.12.2013			Leaves had started to become black and dry.
3	22.12.2013			Most of the leaves turned black and dried.
4	23.12.2013			All the leaves turned black and leaf stalks were green in colour.
5	24.12.2013			The leaf stalks started to become black.
6	25.12.2013			The leaf stalks became black.
7	26.12.2013			All the leaves were dead.
8	27.12.2013			Since the leaves were dead, photosynthesis could not be performed.
9	28.12.2013			Leaves and Leaf stalks were completely dead and eradicated.



# METHOD-2

Sl. No.	Date	Treated with Glyphosate (Chemical solution)	Quantity of Chemical Glyphosate used	Observation and Remarks
1	20.12.2013	Glyphosate sprayed on the plants by wetting all the leaves.	Approx. 50ml	Leaves were fresh and stabilized on both tubs
2	21.12.2013			Leaves had started to become dry and started to shrink.
3	22.12.2013			Most of the leaves shrunked, rolled and dried.
4	23.12.2013			Leaves were slightly brown in colour and rolled.
5	24.12.2013			The leaf stalks started to become dry.
6	25.12.2013			The leaf stalks became dry.
7	26.12.2013			All the leaves were dead.
8	27.12.2013			Since the leaves were dead, photosynthesis could not be performed.
9	28.12.2013			Leaves and Leaf stalks were completely dead and eradicated.



Water Hyacinth after treated with Bio-fine & Glyphosate after one week (28.12.2013)

## Result of analysis-1

From the above research it has been proved that by using Bio-fine and Glyphoste (Chemical) Water Hyacinth can be completely eradicated .

# Conclusion

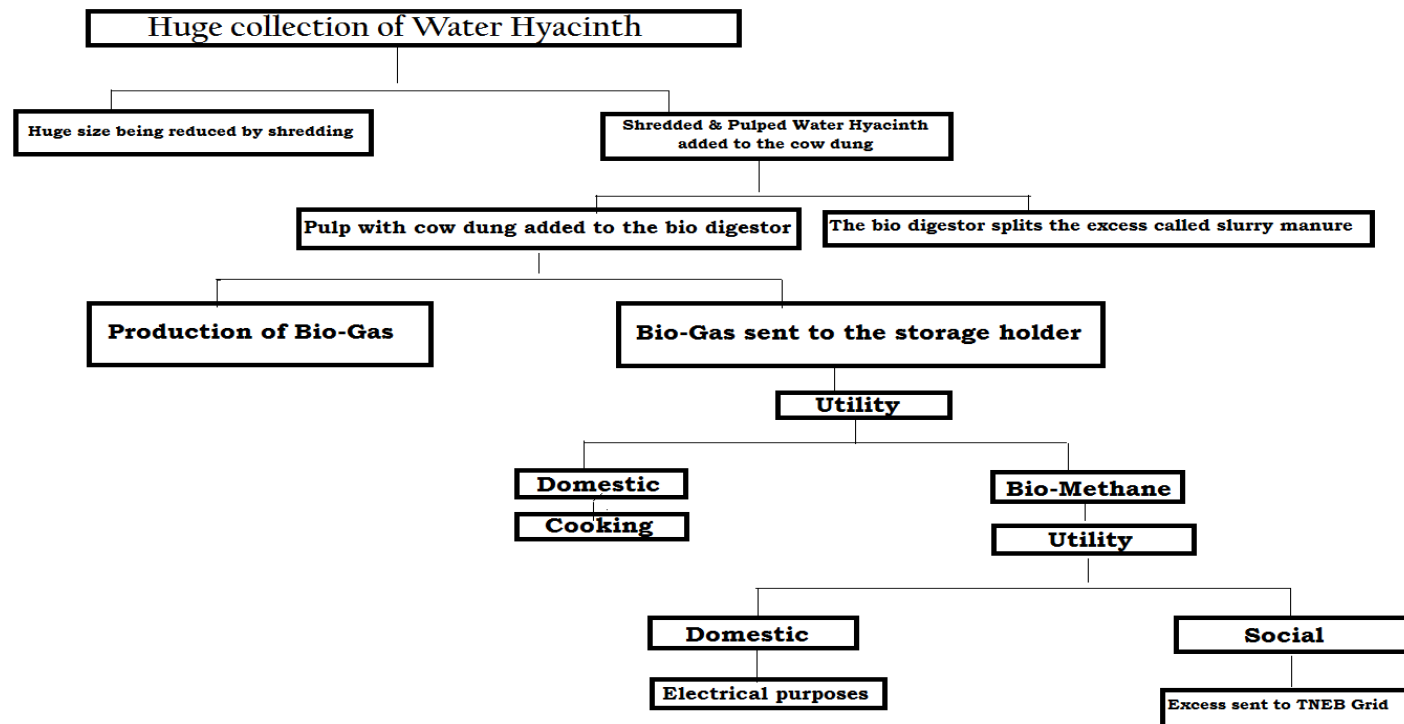
From the results of the above Research, it is suggested that Water Hyacinth can be eradicated by using Bio-fine, a biomedicine.

Further studies can be held whether the bio-fine may or may not affect the aquatic organism.

It is observed that Bio-Fine could easily wipeout Water Hyacinth.



# Analysis - 2



**Flow Chart**  
**Process of Production of Bio-Gas**

# Analysis 2 -Production of Bio gas from Water Hyacinth.

This is a positive approach to tap energy from Water Hyacinth.

Water Hyacinth as an energy producing source.

Bio gas from Water Hyacinth by anaerobic fermentation method.



Pouring the mixture of chopped water hyacinth and cow dung into the digester in the ratio of 8:2 on 03-01-2014 ( 3<sup>rd</sup> January ) .

# Conclusion

- ❖ From the above experiment , we proved that Bio-Gas can be produced from Water Hyacinth.
- ❖ By this biogas production , Water Hyacinth can be weeded out.
- ❖ Production of Bio Methane for better utility.

# Results of our Project...

A video clipping of our Analysis 2.

# BENEFITS TO ENVIRONMENT

- ❖ By giving a special reference to water bodies, Pollution of environment water can be controlled.
- ❖ Water bodies can be saved and retained thereby Water Eco System can be made sustainable.
- ❖ Use of biogas will help to reduce greenhouse gas emissions.
- ❖ This study will reach out to all the Districts to fight against the plant's invasion in about 13,600 lakes and ponds in Tamil Nadu State alone.
- ❖ The success of the project will attract all State Governments to fight against this Water Hyacinth. (Aagaya Thamarai)
- ❖ Electricity can be derived from Bio Methane which is the pollution free energy resource.