**REG NO: STSH200198** 

TITLE:

# COMPARING THE ACTION OF KALI NITRICUM AND KALI PHOSPHORICUM IN VARIOUS POTENCIES IN INDUCING GROWTH OF *LEMNA MINOR*

# 1.INTRODUCTION:

Lemna minor is also known as common duckweed, are among the smallest of the flowering plant. They are deciduous, free floating aquatic perennial that form a rapidly expanding mat of folliage ( 1/4" tall) on water surfaces  $^{[1]}$  . It mostly found throughout the world  $\,$  in sloughs, ponds, and slow moving streams. Each plant consists of oval rounded, flattened green frond( leaf), it commonly adapted in areas where annual daytime temperature is 7- 33°C, PH is 4.5 -7. 5. It is used in purification of water , removal of unwanted metals, animal fooder.

Normally Lemna minor are rich in nutrients. But it can grow more in water which containing high level of nitrogen, phosphate <sup>[2][3]</sup> and potassium. So I have taken this as a research, , we were using nitrogen, phosphate, potassium compounds as in various potentised and combined form as a Kali nitricum and Kali phosphoricum on lemna minor plant

Therefore when we give this Kali nitricum and Kali phosphoricum in various potentized form to the plants, we can show the growth of lemna minor. So agrohomoeopathy can also helpful in growing some aquatic plants. As I have referred in many articles to bring this as a research Dr. Samuel Hahnemann states that 'If the law of nature, I proclaimed are true, then can be applied in all life beings. This seems that our homoeopathy can act on all living organisms including the plants and also in aquatic plants also. By this study we can assess the growth of lemna minor plants by using our homoeopathic remedy kali nitricum and kali phosphoricum in various potencies [4]And also we can compare both the action of homoeopathic medicine on the plant which is efficient to induce the growth of this plant.



Fig no.1 Lemna minor

# 2. AIM AND OBJECTIVES:

- ★ To compare the action of various potencies of kali phos and kali nitricum in aquatic plant lemna minor for assessing the plant growth rate
- ★ To compare the effectiveness of homoeopathic remedies on lemna minor
- ★ To show the effectiveness of homoeopathic medicines even in aquatic plant

# 3. MATERIALS AND METHOD:

# PLANT SAMPLE COLLECTION & CULTURE CONDITIONS:

The plant is collected from my own place, tirupur. After the collection of plant, we are going to conduct the study in our college, sarada krishna homoeopathic medical college because this plant need 6- 33°C so in our place kanyakumari temperature is below 35°C and PH is 4.5-7.5 as same as the plants PH, so I am going to conduct this study in college.

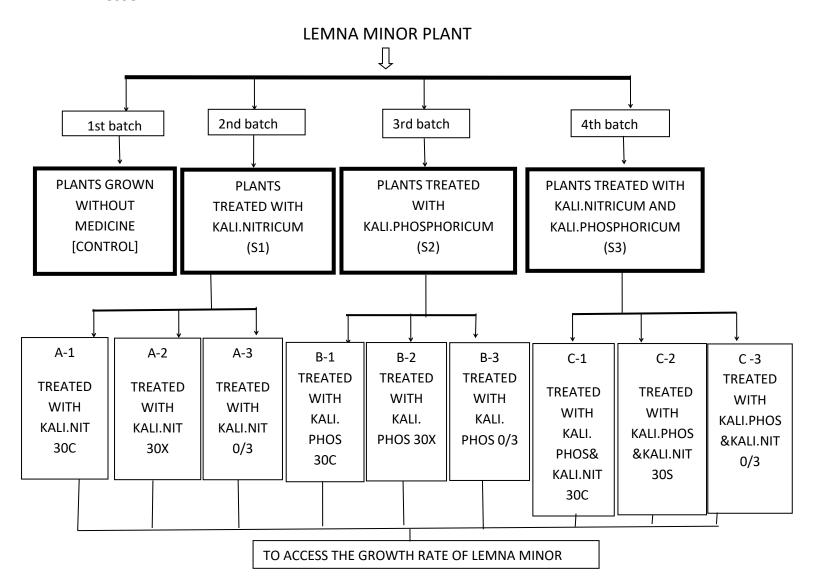
#### 3.1EXPERIMENTAL PROTOCOL:

# • EXPERIMENTAL SETUP:

Before starting the experiment, plant have to adapted the conditions in that place(acclimatization) for atleast 1 week and after that we are going to start the experiment, then take large rectangular plastic vessels, 1-2 litres of normal water should be filled in that vessel and also be prepared with our homoeopathic dilution of kali phos and kali nitricum (30 ml). [5]

# 3.2 METHODOLOGY:

Lemna minor plant should be put in the large rectangular plastic vessel.



 After placing the lemna minor plants in water, then take 30 ml dilution in centesimal potency, tablet form as a decimal scale, poppy seed globule on LM potency individually then stirred it with 400-500 ml of water and then it should be added into lemna minor plant

# 3.3 SAMPLE ANALYSIS:

After the experimental setup and methodology, we should analysis the growth rate of lemna minor in the interval of (0- 7 day experiment) (0-3, 3-7, 0-7) <sup>[3]</sup> in this three interval, we should analysis the growth rate. This could be analysed by using computerized image analysis system which we can easy to analysis the growth rate and also in which day it is increased is also to be analysed.

# **4.IMPLICATIONS:**

- On proving , this growth rate of lemna minor shows that our homoeopathic remedy can act even in a aquatic plants that much efficient our homoeopathic medicine is. [7]
- Not only in increasing the growth rate but also mainly helpful in purification of water, our homoeopathic medicine also helpful purification of water. [6]
- We can provide food for all animals by using of this homeopathically done experiment in lemna minor
- It can also helpful in removal of unwanted heavy metals. [8]

#### **5.REFERENCE:**

- 1.http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx? kempercode=a622( cited on 22 july 2020)
- 2.http://tropical.theferns.info/viewtropical.php?id=Lemna+minor(citedon 23 july 2020
- 3.https://en.m.wikipedia.org/wiki/Lemna\_minor(cited on 23 july 2020)
- 4.Scherr C, Simon M, Spranger J, Baumgartner S. Duckweed (Lemna gibba L.) as a test organism for homeopathic potencies. J Altern Complement Med. 2007;13(9):931-937. doi:10.1089/acm.2007.050( cited on 24 july 2020)
- 5.Scherr C, Simon M, Spranger J, Baumgartner S. Effects of potentised substances on growth rate of the water plant Lemna gibba L. Complement Ther Med. 2009;17(2):63-70. doi:10.1016/j.ctim.2008.10.004( cited on 23 july 2020)
- 6.Jour, Jr Dudley, Rejmankova Eliska, kvet Jan, Frye J, 2009/03/12, 27,49,Production, chemical qualityquality and use of duckweeds(Lemnaceae) in aquaculture, waste management, and animal feeds, 12 volume, 10.1111/j.1749-7345.1981.tb00273.Journal of the World Mariculture Society (cited on 22 july 2020
- 7. Majewsky V, Scherr C, Arlt SP, et al. Reproducibility of effects of homeopathically potentised gibberellic acid on the growth of Lemna gibba L. in a randomised and blinded bioassay. Homeopathy. 2014;103(2):113-126. doi:10.1016/j.homp.2013.12.004.( cited on 23 july 2020)
- 8.Filbin GJ, Hough RA(1979) The effects of excess copper sulfate on the metabolism of the duckweed Lemna minor. Aqua Bot 7:79–86 (cited on 24 july 2020)