# Physicochemical studies of *salvinia molesta D.S.Mitchell*

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## Abstract

The main aim of the present study was to deals with the physicochemical study of the leaf extracts of *salvinia molesta D.S. Mitchell* belonging to the family salviniaceae. It is a free floating aquatic fern, which is extensively distributed to many parts of the world. The physicochemical standards evolved in this study will give referential knowledge for identification of the crude drugs.
Physicochemical parameters like Extractive value, Ash Value, Moisture Content, Foaming Index were performed.
The maximum extractive value was found in Methanol which was 20.4% and least in Benzene which was 1%.The Ash Value was found to be 6.65%. Moisture Content was 35.4% and the foaming index of *salvinia* was found to be less than 100.

## Introduction

*Salvinia molesta* is a free- floating aquatic fern belonging to the family salviniaceae, and it is one of the world's invasive aquatic weeds. It is also known as giant *salvinia*, kariba weed, African payal, aquarium water moss, butterfly weed (*Mitchell et al* 1972). It grows rapidly and under optimum conditions it enables to double in number and biomass in not more than 3 days. Enormous growth of this species hinder light penetration of water column by forming dense mats. Dense mats of *salvinia* hinder with dog fishing nets, rice cultivation and disturb the entry of water for human beings, livestock and wildlife(*Mitchell*, 1979). It also hampered the irrigation, transportation, hydroelectric generation, recreation and flood control (*Jolm et al* 1977).

## Materials and methods

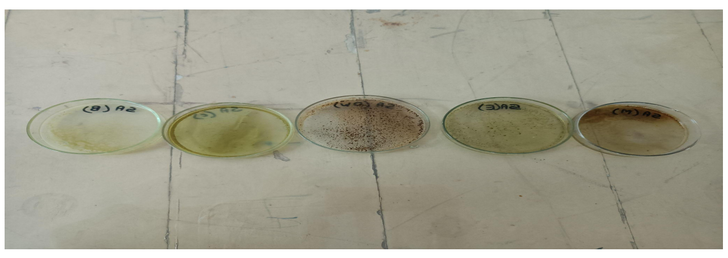
Fresh leaves of *salvinia molesta* was collected from B.A.U kanke Ranchi. Leaves were washed thoroughly under tap water to remove soil particles, dust after that washed again it with distilled water 2-3 times. Leaves were shade dried for 3 weeks. By using mortar and pestle grind the leaves to make a powder of it. Different solvents were used to made plant extracts. 1 gm of plant powder was mixed with 10 ml of different solvents separately. Leave it for 72hrs. After 72 hrs strain it with Whatman filter paper. After filtration leave it to evaporate till it became a crude drugs.

## Discussion

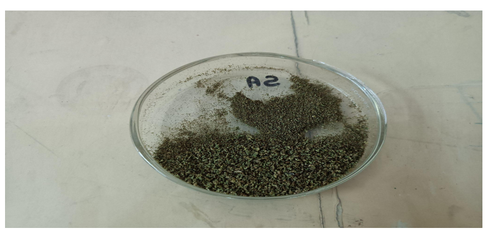
Proximal Analysis

| Parameters | Results |
|---|---|
| 1. Extractive Values | |
| a Methanol soluble | 20.4% |
| b Ethanol soluble | 6.6% |
| c Chloroform soluble | 1.5% |
| d Benzene soluble | 1% |
| e Distilled water | 9% |
| 2. Moisture content | 35.4% |
| 3 Total Ash value | 6.65% |

Extractive value



Moisture content



Ash value


## Results

1.Extractive value

| | Methanol | Ethanol | Chloroform | Benzene | Distilled water |
|---|---|---|---|---|---|
| Initial weight | 40.249 | 51.704 | 42.599 | 54.976 | 50.549 |
| Final weight | 40.453 | 51.770 | 42.614 | 54.986 | 50.639 |
| Difference | 0.204 | 0.066 | 0.015 | 0.01 | 0.09 |
| %age | 20.4 | 6.6 | 1.5 | 1 | 9 |

2. Moisture content

Moisture% = 35.4%

3.Ash value

Ash value of 100gm= 6.65%

4.Foaming index

Height of the foam was measured less than 1cm in each test tubes. So the foaming index was found to be less than 100.

## Conclusion

Determination of physicochemical parameters provides suitable standards for the identification of plant material and for the isolation of components in future. The study revealed that in *salvinia molesta* the extractive is highest in methanol and lowest in benzene. The moisture content in *salvinia* was found to be 35.4%, and the ash value was 6.65%. The foaming index was found to be less than 100.

## References

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