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FOLKLORE UTILISATION OF BRYOPHYTES AMONGST THE TRIBAL REGIONS OF NORTH COASTAL ANDHRA

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Abstract

Bryophyte which is otherwise considered to be as Lilliputians amongst the land plants is found to be highly priced for the preparation of ethnomedicines. Ethnic tribes depend upon the plant in their surroundings for traditional medicine preparation. The present article enumerates four species of bryophyte which are used routinely amongst the tribes of North coastal Andhra to treat various ailments. Bryophytes are ecologically friable and very prone to extinction. Hence, these types of studies are important as it will bring more and more new species of bryophyte with exceptional therapeutic properties into light.

Key Words: Bryophyte, Ethnomedicine, Tribal, Coastal Andhra, Srikakulam, Ailments

Introduction

Plant has been the foremost companion of human being, on whom he has depended directly or indirectly for food, medicines, fodder, timber, fibers, drugs and others. With an upsurge of human population, expenditure incurred on medicines and synthetic drugs have also inflated. The aboriginal tribes in India have always been perpetually interacting with almost all kinds of plants in their surroundings. This is evident from the use of exotic species in the preparation of ethnomedicines.

Medicinal plants constitute as an important asset in the society. As per the estimate of World Health Organization, approximately 3.5 billion people depend on plant based

medicines for their health care. Approximately, 65% of Indian population still depends on traditional medicines which are primarily plant-derived. Primarily, the ethnomedicinal studies carried out focuses on the medicines and crude drugs derived from angiosperms mainly. Bryophytes are considered as “Lilliputians” amongst the land-dwelling plants. They are mainly overlooked and unattended when comes to use in comparison to angiosperms.

Ethnomedicine is a multi-disciplinary science that encompasses the utilization of plants, spirituality and the natural environment. It has acted as the source of healing for people for years (Lowe et al., 2000). Bryophytes have been used in the preparation of herbal medicines in India but their study is remotely scarce. This group of plants is rich in various active constituents, including, oligosaccharides, polysaccharides, sugar alcohols, amino acids, fatty acids, aliphatic compounds, prenylquinones, aromatic and phenolic compounds (Pant and Tewari, 1990). Bryophyte biochemistry has opened up the avenue that explores the medicinal property to cure diseases and malfunction.

Even though considerable study focusing on the ethno botanically important plant groups in Andhra Pradesh have been conducted by several authors (Kumar and Niteshwar, 1983; Basi et al., 1991; Upadhyay and Chauhan, 2000;Pragaya et al., 2011; Narasimha Rao and Dora, 2011; Rao et al., 2011; Murthy and Narasimha Rao, 2012; Lakshmi Narayana and Narasimha Rao, 2013; Padal et al., 2013, Narasimha Rao and Rao, 2013), but the utilization of bryophytes as a source of medicine amongst the tribal regions of Srikakulam district has remained considerably neglected in this part of the state.

Material and Methods

Study Area

Andhra is the eight largest states in India with an area of 160,205 sq. km. The state is inhabited by approximately 50.24 lakhs tribal population divided into 33 tribal communities. Srikakulam district encompasses an area of 5837 sq. km. and is divided into 37 mandals (Figure 1). It is located within 18° 5' - 19° 12' N: 83° 32' - 84° 47' E. It is bounded by Odisha state from North, Chhattisgarh from North-West and Bay of Bengal on the East to South-East and the Vizianagaram district in the West to South-West. The district boasts of a forest cover of approximately 70,864,13 hectares. Tribe forms the majority in terms of population in this

area, mainly residing in hilly and forest tracts. They converse mainly in adivasi Oriya and Telugu and follow their own distinct customs and rituals.



Figure1. Map of the Study Area, Srikakulam district

Survey

For the present study, consecutive field trips were undertaken to Srikakulam district, Andhra by one of the author (GMNR) in different seasons from January-December, 2013 to avail full-proof bryophytic resources in the study area. To procure authentic desired information regarding the ethno botanically important bryophytes, experienced local village headman, priests, vaidyas, tribal medicinal practitioners, elderly people and educated students were consulted. For the current study, middle to old aged people of both gender, having sound knowledge relating to ethnomedicine were consulted. To obtain a full-proof result, villages were visited in different seasons. For the current study, methodology described by several authors (Jain, 1964; 1981; 1987; 1999; Hemadri, 1994) was followed largely. The information collected was cross-checked by visiting the fields where collection is done by the villagers. Respondents were personally asked to show the way they utilize the plants for preparing the medicines. The plant specimens were collected and identified botanically with the aid of standard referred literatures (Gamble and Fischer, 1915; Pullaiah and Chennaiah, 1997; Rao and Ramulu, 1986; Reddy et al., 2008; NarasimhaRao and Dora, 2012; NarasimhaRao and Lohitasyudu, 2012).

Results and Discussion

A total of 6 genera were documented under 6 families namely, Marchantiaceae, Ricciaceae, Aytoniaceae, Polytrichaceae, Funariaceae and Sphagnaceae (Table 1). Some of the members are used in preparing traditional medicines by the local tribes and are utilized for curing common human ailments as well as veterinary diseases. Table 2 lists the diverse uses of bryophytes in the preparation of ethnomedicines along with the parts used for the cure of ailments.

Table1. Species of Bryoflora Occurring in the North Coastal Andhra

| Sr. No. | Genera | Species(s) name | Family |
|---------|-------------------|------------------------------|----------------|
| 1. | <i>Marchantia</i> | <i>Marchantia polymorpha</i> | Marchantiaceae |
| 2. | <i>Riccia</i> | <i>Riccia discolor</i> | Ricciaceae |

| | | | |
|----|---------------------|---|----------------|
| | | <i>R. fluitans</i> | |
| 3. | <i>Plagiochasma</i> | <i>Plagiochasma rupestre</i> <i>P. wrightii</i> | Aytoniaceae |
| 4. | <i>Polytrichum</i> | <i>Polytrichum alpinum</i> <i>P. densiflorum</i> | Polytrichaceae |
| 5. | <i>Sphagnum</i> | <i>Sphagnum cymbifolium</i> <i>S. squarrosum</i> | Sphagnaceae |
| 6. | <i>Funaria</i> | <i>Funaria hygrometrica</i> <i>F. leptopoda</i> | Funariaceae |

Table2. Ethnomedicinal uses of Bryophytes in the North Coastal Andhra

| Name of the plant | Family | Part used | Use(s) |
|------------------------------|----------------|--|--|
| <i>Marchantia polymorpha</i> | Marchantiaceae | Entire thalli Young archegoniphore | Liver ailments, curing yellow jaundice, relieves from inflammation. Decoction used in cure of boils, treatment of pulmonary tuberculosis. |
| <i>Riccia. sp.</i> | Ricciaceae | Entire thalli | Fresh thallus is grounded to paste along with jiggery for curing children affected with ringworms. |
| <i>Sphagnum sp.</i> | Sphagnaceae | Dried thalli mass Decoction of thalli | Used as surgical dressing in haemorrhage. Curing eye and skin diseases. |

| | | | |
|------------------------|----------------|---|--|
| <i>Polytrichum</i> sp. | Polytrichaceae | Fine hair on capsule Entire thalli | Preparation of hair tonic to strengthen and beautify hair. Decoction used in common cold, fever. Used as laxative. Boiled to prepare tea that dissolves gall bladder and kidney stone. |
|------------------------|----------------|---|--|

Conclusion

Bryophytes were the first group of plants who have successfully established themselves in the land habitat during the early Devonian Period. They have still retained their dependency on water to complete the life cycle and hence known as the “amphibian” of plant kingdom. Owing to their simplicity, they have established themselves at almost all the possible bryogeographical unit of India (Pandey, 1958; Vashishta et al., 2003). Since they are ecologically friable they are very prone to extinction. Ethnic tribes of Srikakulam district, Andhra have utilized this bioresource in the preparation of several ethno-therapeutics for generations. These plants are endowed with high medicinal value which should be specially protected so that many more species of bryophytes with exceptional therapeutic properties can be brought into light.

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