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Indigenous knowledge of medicinal plants used by the Reang tribe of Tripura state of India



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ABSTRACT

Ethnopharmacological relevance: Traditional remedies used for the treatment of various ailments are considered to be very important in the primary health care of Reang people living in Tripura state of Northeast India. Novel information gathered from the present investigation is important in preserving folk indigenous knowledge of Reang tribe.

Methods: Systematic and exhaustive field surveys were conducted during 2003 to 2004 in Reang inhabited areas of Tripura state of Northeast India covering all the seasons, to gather information on medicinal herbs used by them in the treatment of various ailments. Information was collected from 55 traditional herbalists of different age through structured questionnaires and personal observations made during the field visit. The data obtained was analyzed through informant consensus factor (F_{IC}) to determine the homogeneity of informant's knowledge on medicinal plants also the fidelity level (FL) to authenticate the uniqueness of a species to treat a particular ailment.

Results: In the present study a total of 125 medicinal plants species belonging to 116 genera and 59 families were presented, used for treating 42 different ailments. The major plant parts used are leaves and most of the remedies are suggested to take orally. The greatest parts of plants used for curing various ailments were found locally. The consensus analysis revealed that the fever and gastro-intestinal diseases have the highest informant consensus factor F_{IC} of 0.79 followed by the dermatological problems (F_{IC} 0.78). It is equal (F_{IC} 0.77) for both general health problems and inflammation and pain while urinogenital problems showed relatively low levels of consensus (F_{IC} 0.63). The level of informants' consent was high for most ailment categories indicating greater homogeneity among informants. In the present study we analyzed the disease categories to highlight some of the important plant species in terms of Fidelity level. Greater parts of the plant species achieve highest fidelity level, while only 4% acquire lower FL. The species with high citation and informant concurrence value are reasonably significant. *Cyathea*, a rare tree fern used for major cuts or wounds for immediate blood coagulation. Extensive local application may threaten the species if not judiciously managed.

Conclusion: The traditional pharmacopoeia of the Reang ethnic group incorporates a myriad of diverse flora available locally. Traditional knowledge of the remedies is passed down through oral traditions without any written document. This traditional knowledge is however, currently threatened mainly due to acculturation and deforestation. Therefore, documenting medicinal plants and associated indigenous knowledge can be used as a basis for developing management plans for conservation and sustainable use of medicinal plants of the study area. In addition, findings of this study can be used as an ethnopharmacological basis for selecting plants for future phytochemical and pharmaceutical studies.

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1. Introduction

Plants and human beings have intrinsic relationships since ancient times and were evolved along parallel lines for their existence, cooperating and depending upon each other. This intimate relationship had progressed over generations of experiences and practices.

Apart from their nutritional, ritual and magical value, plants have important contributions in the health care system of human being.

The traditional wisdom of folklore medicines that has been inherited rich in domestic recipes for common ailments. Traditional medicine encompasses protection and restoration of health over millennia. The World Health Organisation (WHO) has promoted a movement for "Saving Plants for Saving Lives"; this is because of the growing understanding of the pivotal role of medicinal plants in providing herbal remedies. According to WHO, herbal medicines serve the health needs of about 80% of

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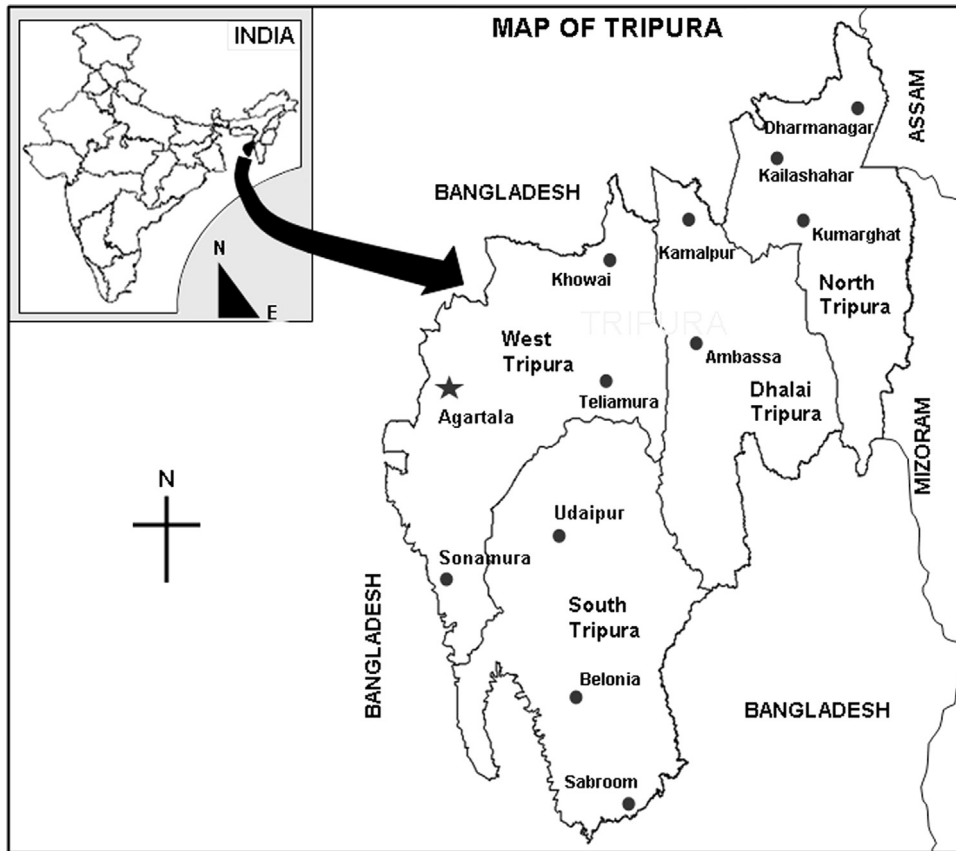


Fig. 1. Map of study area (Tripura).

the world's population, especially for millions of people in the rural areas of developing countries (WHO, 2001). The ethnobotanical studies have become increasingly valuable in the development of health care and conservation programs in different parts of the world.

The state Tripura, one of the seven sister states of North Eastern region of India, can be of very good prospects in this regard because of its unique ethnic culture and diverse vegetation. Tripura is located between 22°-56' to 24°-32' North latitude and between 90°-09' to 92°-20' East longitude. It is bounded on the North West, South and South East by Bangladesh, whereas in the East it has a common boundary with Assam and Mizoram (Fig. 1. Map of study area). Total geographical area of Tripura is 10,496 Sq. km. The forest of Tripura is divided into 2 major categories viz., evergreen forest and moist deciduous forest. Deb reported about 1600 vascular plant species from the state which constitutes almost 14% of total flora of India (Deb, 1981 and 1983).

The tribal people of Tripura have been in the practice of preserving a rich heritage of information on medicinal plants and their usage. These people have faith in their traditional system of healthcare and put it in practice. They have their own traditional physicians who use these plants as their materia medica. They have rich and outstanding traditional knowledge and wisdom regarding material for healing of commonly occurring ailments. They have both the know-how and do-how for preparing the medicine and its administration. Unfortunately, these information are not yet collected systematically and comprehensively. The tribal populations' economic power is limited but their bioresources endowment is rich. Reang is the second most populous tribe of Tripura. Out of the 19 scheduled tribes, the Reangs mostly residing in inaccessible forest areas were recognized in the seventies by Government of India as the only Primitive Tribal Group (PTG) in Tripura. They are Austro-mongoloid in origin and

are primarily agriculturist tribe (Samanta, 1984). They mostly used to practice the Huk or Jhum cultivation. Total Reang population in the state is 165,103 and the literacy rate is 39.8% (Census of India 2001). They spoke a dialect closely related to the Austro-asiatic family of language and is locally called 'Kaubru'.

The North Eastern part of India has a sizeable tribal population; investigations on their Ethno-botanical aspects have been made so far by different research workers in the state of Assam (Sajem and Gosai, 2006), Meghalaya (Rao, 1981), Manipur (Yumnam et al., 2012), Mizoram (Lalfakzuala et al., 2007), Nagaland (Jamir et al., 2012) and Arunachal Pradesh (Khongsai et al., 2011). The present medico-botanical investigation of Tripura is found to be very insignificant in comparison to the number of tribes inhabiting the state due to inaccessibility in the dense forest area. Deb (1968) reported some medicinal plants of Tripura. Considerably very less attention has been paid by the ethno botanists for exploring the ethno-medicinal resources of the state. Some of the pioneering works conducted by a number of researchers in the state are 'Tribal drink of Tripura' by Devbarma (1976); 'medicinal plants of Tripuri tribes' by Singh et al. (1997) and 'useful weeds of Tripura' by Chakraborty (2003).

2. Materials and methods

Exhaustive field survey have been undertaken from 2003 to 2004 covering all the seasons for gathering information on each and every species useful in herbal medicine among the Reangs. Survey was conducted in different villages of North Tripura, Dhalai, West Tripura and South Tripura district of Tripura state. The information's were collected from 55 traditional practitioners (48 men and 7 women) in 29 different villages. Most of the interviewees (42) were more than 55 years old and belonging to

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