

Traditional Knowledge on Medicinal Plants Used by Tiwa Ethnic Community, North East India

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Abstract

Traditional techniques on medicinal plants are very useful for conservation of biodiversity and play a significant role in rural health care system. Present study was carried out among the Tiwa tribe of Kamrup District of Assam, during 2018-19. A total of 24 plant species representing 20 families and 24 genera used to treat various human ailments. Analysis of growth habit of medicinal plants in this study indicated that most of the tree followed by herb, shrub and climber. This study shows that the highest percentage of medicinal plants was obtained from wild while rest were from home garden. Due to social changes, the tradition has faced serious threat which may leads to loss of traditional practices in near future.

A plant resource is a good thing as well as an advantage from God to living beings on this planet. These wealth are the basis of life on earth and are central to people's livelihoods. Different indigenous people of this area are the people who live in harmony with the nature, maintain an eco-friendly lifestyle and sustain a close link between man and entire environment. Different people have different knowledge and techniques on the plant uses. Traditional knowledge is a knowledge developed by any people over many generations for proper utilisation of their lands, natural resources and environment; which is revealed in many ways. It also can be known as a cumulative body of knowledge, practice and

belief, evolving through adaptive process and handed over through generation by cultural transmission⁵.

Traditional knowledge and traditional techniques on medicinal plants are not only useful for conservation of traditional practices and biodiversity, but also play a significant role in rural health care system. This traditional medicinal system is a very important alternative of modern medicines. Indigenous ecological knowledge creates dynamic relationships between traditional societies, entire ecosystems, and between individual species. It gives livelihoods, conserve the diversity and enhance socio-economy. It also concerned with the

cultural, spiritual and religious belief systems. At present scenario traditional medicines become important tools for sustainable development of our environment².

Eastern Himalayan region, north-eastern part of India considered as a 'hotspot' of biological diversity on global level and very rich in cultural as well as ethnic diversity as well. About 88% populations are living in rural areas that practices forest based livelihood systems. North east India with its rich floristic diversity is also inhabited by the largest number of tribes and they lead an intricate life totally dependent on the forest plants. More than 57 percent of the total population is tribal population in this region. Tribal population percentage is 12.83 in Assam. Approximately 25 communities including tribal communities and rural people mostly depend on plant resources for their day to day life. All the indigenous people have close association with and good knowledge about plant resources of their surroundings which form an important part of their material and spiritual cultures⁴. Present works deals with the traditional medicinal systems of tiwa communities one of the major ethnic tribes in Assam.

Present study was conducted among the Tiwa tribe of Kamrup District of Assam, which is situated in between 25°46' and 26°49' North Latitude and between 90°48' and 91°50' East Longitude. Climate is sub tropical with semi dry summer and cold in winter. Annual rainfall ranges between 1500 mm to 2600 mm. Average humidity 75%, max. Temperature 38.5° C and min temperature 7°C.

Frequent field trips were carried out during 2018-19 to collect different information on plant resources used by the Tiwa communities as medicines. 10 numbers of villages were selected for details study. From each village 60 nos of respondent were selected. Data were collected by direct observation, interview and informal discussions with the help of a questionnaire from the respondents. Plants specimen were collected and identified and preserved as voucher specimens following standard herbarium techniques³.

A total of twenty four plant species were recorded for its medicinal uses by the local people. These medicinal plant species representing 21 families and 24 genera used to treat various human ailments (table 1). The families to which various species belong to are Solanaceae, Sapindaceae, Asteraceae, Acanthaceae, Oxalidaceae, Musaceae, Euphorbiaceae, Myrtaceae, Crassulaceae, Combretaceae, Scrophulariaceae, Tiliaceae, Caesalpiniaceae, Lamiaceae, Clusiaceae, Cucurbitaceae, Malvaceae, Lythraceae, Moringaceae, Caricaceae and Dilleniaceae. Analysis of growth habit of medicinal plants in this study indicated that most of the tree followed by herb, shrub and climber. This study shows that the highest percentage of medicinal plants was obtained from wild while rest were from home garden.

Analysis of data on plant parts used indicated that leaf and fruit are the major part widely employed by local people followed by roots, stem, flower, tender leaves and sepal. These plants are used in the traditional medicine to relive about 19 types of disorders

include stomach disorder, hair fall, nail infection, fever, dysentery, cough, pox, increase appetite, low blood pressure, reduce extra weight, gall bladder, stone, diarrhoea, bodyache, nerve problem, spinning of head, jaundice, stomach ache, headache.

The basic active ingredients used for treating various diseases are present in the different parts of plants such as leaves, root, bark, seeds and sometimes the fruits. The extraction of these active ingredients requires

different methods such as infusion, decoction, chewing of the plant part such as seed, fruit or even the leave. The different methods of preparation depend on the part of the plant by which these active ingredients are found. Infusion was particularly used on leaf extracts while decoction was used on roots, bark and certain seed extracts. Some herbs were discovered to have the ability to curing a number of diseases while some are specific on a particular disease.

Table 1. Details plant species Used for medicinal purpose by local people

Sl no	Botanical name	Local name (Tiwa)	Family	Habit	Plant parts	Diseases
1	<i>Solanum indicum</i> Linn.	Kankakhala	Solanaceae	Shrub	Root	Headache
2	<i>Cardiospermum halicacabum</i> Linn.	Khupal phatewa	Sapindaceae	Herb	Tender leaves	
3	<i>Xanthium strumarium</i> Linn.	Akhara guthi	Asteraceae	Herb	Root	
4	<i>Andrographis paniculata</i> Nees.	Chirta titha	Acanthaceae	Tree	Root	Stomach disorder
5	<i>Ecbolium linneanum</i> Kurz.	Nilikhat	Acanthaceae	Tree	Stem	Stomach ache
6	<i>Oxalis corniculata</i> Linn.	Chengmora	Oxalidaceae	Herb	Root	Jaundice
7	<i>Musa balbisiana</i> Colla.	Bhimthilu	Musaceae		Root	Jaundice, Stomach disorder
8	<i>Jatropha gossypifolia</i> Linn.	Bhetera plant	Euphorbiaceae	Shrub	Root	Bodyache, Nerve,problem, Spinning of head.
9	<i>Psidium guajava</i> Linn.	Madhuram	Myrtaceae	Tree	Tender	Diarrhea

10	<i>Bryophyllum pinnatum</i> Kurz.	Pategaja	Crassulaceae	Herb	Leaves	
11	<i>Embllica officinalis</i> Gaertn.	Thipla	Euphorbiaceae	Tree	Fruit	Gall bladder stone
12	<i>Terminalia chebula</i> Retz.	Silkha guthi	Combretaceae	Tree	Fruit	Increase appetite, Reduce extra weight
13	<i>Lindernia crustacea</i> Linn.	Jugari	Scrophulariaceae	Herb	Whole plant excluding roots	Low blood pressure
14	<i>Corchorus capsularis</i> Wall.	Morapata	Tiliaceae	Shrub	Leaves	Fever
15	<i>Tamarindus indica</i> Linn.	Thinduli	Caesalpi- niaceae	Tree	Fruit	Fever
16	<i>Leucas aspera</i> Linn.	Drunlai	Lamiaceae	Herb	Leaves	Increase appetite
17	<i>Moringa oleifera</i> Lam.	Sajana	Moringaceae	Tree	Flower	Pox
18	<i>Carica papaya</i> Linn.	Amresh	Caricaceae	Tree	Dry stem	Cough
19	<i>Ocimum sanctum</i> Linn.	Khajam Thusli	Lamiaceae	Herb	Leaves	Cough
20	<i>Garcinia pedunculata</i> Roxb.	Jathi	Clusiaceae	Tree	Fruit	Dysentary
21	<i>Benincasa hispida</i> (Thunb) Cogn.	Khumrai	Cucurbitaceae	Herb (Climber)	Fruit	Fever
22	<i>Hibiscus rosa sinensis</i> Linn.	Malvaceae	Shurb	Leaves	Hair fall	
23	<i>Lawsonia inermis</i> Linn.	Jetuka	Lythraceae	Shrub	Leaves	Nail infection, Hair fall
24	<i>Dillenia indica</i> Linn.	Orao	Dilleniaceae	Tree	Sepal of the fruit, Fruit	Stomach disorder Hair fall

Most of the plants used are collected from the forest and natural ecosystems. However, collection from nature and preservation in their own garden can be an important conservation strategy¹.

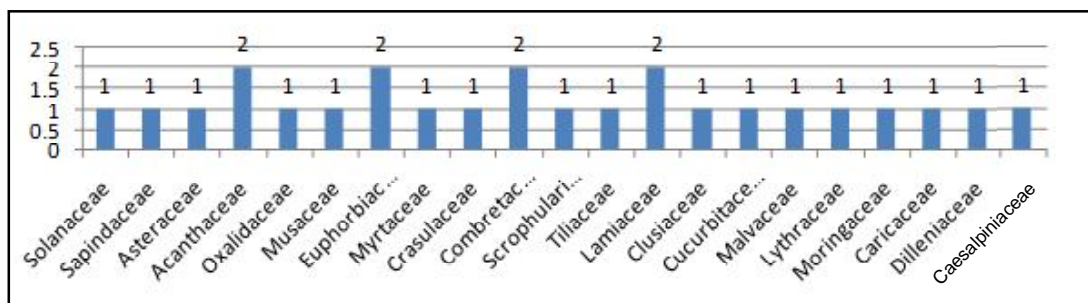


Figure 1. Plant species per families used in different diseases.

The traditional method of treatments and cares are still prevalent within the Tiwa tribes. But due to social changes, the tradition has faced serious threat which may leads to

loss of traditional practices in near future. The documentation and publication of these finding will ensure the preservation of traditional knowledge, cultural values.

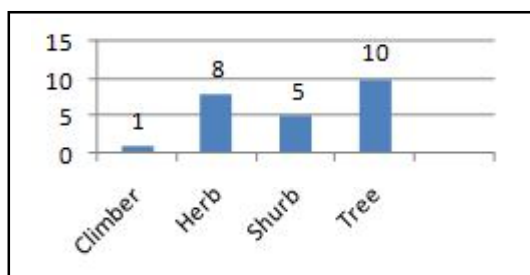


Figure 2. Habits of plant species used as medicine

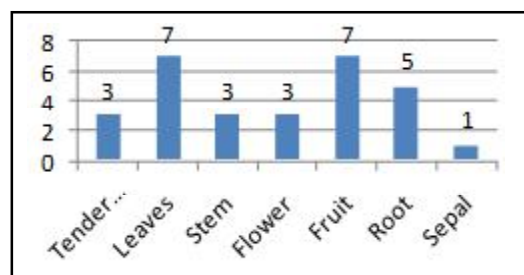


Figure 3. Plant parts of plant species used as medicine.

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