

An Ethnobotanical Survey of the Koch Community of South-West Garo Hills District, Meghalaya, India

Hemen Chandra Majumdar¹ Juri Moni Shyam² Utpal Chowdhury³ Niranjana Roy⁴ Devpratim Koch⁵

^{1,2,3,4,5}Department of Botany

^{1,2,3,4,5}B. Borooah College, Guwahati, Assam, India

Abstract— An ethnobotanical survey of the Koch community of South-West Garo Hills district, Meghalaya, India was carried out during the period from August, 2014 to May, 2017. During the period, field survey, collection of specimens for herbarium, interview of local herbalist were extensively carried out in 24 villages inhabited by Koch community. The present investigation provides preliminary evaluation of 45 species of plants of ethnobotanical importance belonging to 36 families of Angiosperms and 1 family of Pteridophyte.

Key words: Ethnobotanical, Koch community, Herbalist

I. INTRODUCTION

The importance of traditional knowledge has been realized chiefly in respect of varied economic uses of plants prevailing among the primitive human societies (Majumdar & Shyam, 2013). The safe and eco-friendly herbal medicines are widely practiced throughout the world since ancient times. Today, there is an increasing desire to unravel the age old secrets of traditional medicine. Nearly 80% of the world population depend upon traditional system of health care (Rajadurai et al., 2009). The indigenous traditional knowledge of medicinal plants of various ethnic communities that has been transmitted orally for centuries is fast disappearing from the face of the earth due to the advent of modern technology and transformation of traditional culture (Ganesan et al., 2004).

The Koches of Meghalaya, recognized as schedule tribe of the North East, are mainly concentrated in the Western and South Western parts of the Western Garo Hills of Meghalaya. The term Koch is derived from the word “Kuchimuchi” which means shrinkage due to shame. The Koches living at the foot hills of Garo Hills of Meghalaya have lagged behind the other Koches / Rajbanshis in terms of education and culture but appears to possess more tribal characteristics. On the basis of cultural and dialectal variations and geographical boundaries, there are several groups of Koches viz., Wanang, Harigaiya, Satpari, Chapra or Dasgaiya, Tintikiya, Banai and Sankar Koch. This community also prevails in the state of Assam, Manipur, Tripura, North Bengal, Bangkura in West Bengal, Purnia in Bihar and in Chittagong and Noakhali of Bangladesh (Jaganathan, 2002). The Koch dialect is of Tibeto- Burman origin (Gait, 1942). This Koch tribe of South-West Garo Hills District of Meghalaya has its own culture, traditions, language, belief and practices of using forest products as food and other daily requirements. Naturally, they have plenty of knowledge about medicinal plants and their utilization. An attempt has been made to document the age old traditional healing practices of the Koch community of South-West Garo Hills District of Meghalaya used for

treatment of various human diseases and the findings of survey and analysis are discussed in this study.

II. MATERIALS & METHODS

South-West Garo Hills district is an administrative district in the state of Meghalaya. The district headquarter is located at Ampati. The total land area of South-West Garo Hills is 822 sq. km. The coordinates of the district are 25.27° N latitude and 89.56° E longitude. The population of the district according to 2011 census is 1,70,794. The study was carried out in 24 villages mainly inhabited by people belonging to Koch community.

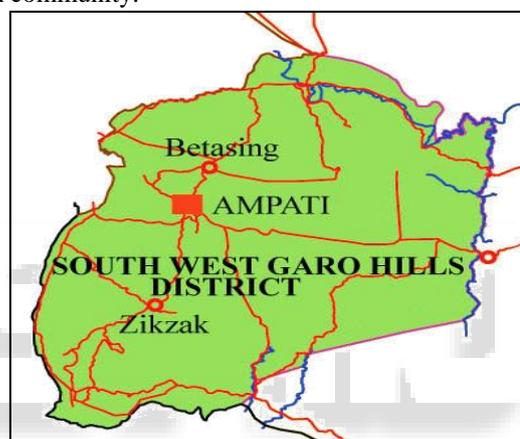


Fig. 1: Map of South-West Garo Hills District



Fig. 2: Map of Meghalaya

The study was done during 2014 to 2017 in South-West Garo Hills district of Meghalaya. In the study, aged people who have been practicing traditional medicine, called as kabiraj, hojai, pankur or jaba hawni of Koch tribe were interviewed throughout the district. The data gathered were verified by repeated queries among local herbalists in order to authenticate the information (Cochran and Cornfield, 1951; Jain, 1989). A specially designed questionnaire was prepared for the survey of the local health practices prevailing in the study area, which included the most relevant questions to obtain data for fulfilment of the objectives of the present work. Information about ethno-medicinal uses, vernacular name of the plants, plant parts used, formulation

and preparation of recipes, dose regimen, duration and mode of administration were sought from the local healers.

Plant specimens were collected from those localities. Collection and preparation of herbaria were done following Jain and Rao, (1977). Identification of herbaria was carried out in the Department of Botany, B. Borooah College, Guwahati. The presence of alkaloids in the plants/ plant parts was tested by Mayer's reagent, Dragendroff's reagent and Wegner's reagent. (Buzarbarua, 2000).

III. RESULTS & DISCUSSION

Traditional medicine is very popular and useful among the people of Koch community of South-West Garo Hills district of Meghalaya since ancient times. The traditional medicines have a very strong hold on the local population. So far no proper attempt has been made to explore the

possibilities to gather the knowledge from the local herbalists belonging to Koch community of South-West Garo Hills district of Meghalaya. During the investigation, 45 species of plants belonging to 36 families of Angiosperms and 1 family of Pteridophyte were found to be used by the people of Koch community of the district for the treatment of various diseases. All the plants/ plant parts tested positive for the presence of alkaloids. Information of use of medicinal plants for phytotherapy is transmitted from one generation to the next by the local practitioners of the Koch tribe through informal and oral traditions. Information about ethno-medicinal uses, local name of the plants, plant parts used, formulation and preparation of recipes, dose regimen and duration, mode of administration and presence of alkaloids are shown in Table: 1.

Sl. No.	Botanical name and Family	Vernacular name	Name of disease	Parts used	Mode of administration	Test for alkaloid
1	<i>Achyranthes aspera</i> L. (Amaranthaceae)	Kachipha pan	Labour pain & parturition	Roots	The plant is pulled off the soil in one breath taking the name of the pregnant women and if the roots come out, it is tied to the sikha (hairs) of the women with a thread. It should be removed immediately after delivery.	+ve
2	<i>Ageratum conyzoides</i> (L.) (Asteraceae)	Guwalpan	Cuts	Leaves	The leaves are crushed in palm, mixed with saliva and applied on the affected area.	+ve
3	<i>Allium sativum</i> L. (Amaryllidaceae)	Rosun	Eczema	Cloves	Little bit of black grease from the wall of the kitchen is mixed with 3 cloves of <i>Allium sativum</i> L. and a pinch of salt and applied on the affected area	+ve
4	<i>Aloe vera</i> (L) Burm.f. (Xanthorrhoeaceae)	Dhekikanchan	Nocturnal emission	Leaves	The leaf juice is taken orally for a week.	+ve
5	<i>Alstonia scholaris</i> (L.) R. Br. (Apocynaceae)	Satiyal pan	Cat bite or Dog bite	Bark	Bark is made into paste and the juice is taken orally.	+ve
6	<i>Andrographis paniculata</i> (Burm.f) Ness. (Acanthaceae)	Panekneem	Diabetes	Leaves	Small balls are prepared from the leaf paste and then taken orally regular basis.	+ve
7	<i>Asparagus officinalis</i> L. (Asparagaceae)	Sotmul	Body weakness	Roots	The juice is extracted from the roots and mixed with a glass of water and taken regularly for a week.	+ve
8	<i>Averrhoa carambola</i> L (Oxalidaceae)	Kamrenga	Headache	Fruit	The fruit is crushed and the paste is tied in the forehead	+ve
9	<i>Azadirachta indica</i> A. Juss. (Meliaceae)	Neem teeta	Cuts and wounds	Leaves	Leaves are dried in shade and powder is prepared and applied on the affected area.	+ve
10	<i>Bacopa monnieri</i> (L.) Wettst (Plantaginaceae)	Bramhi	Increasing memory	Leaves	The leaf juice is taken orally on regular basis.	+ve
11	<i>Bauhinia variegata</i> L. (Fabaceae)	Kanchan pan	Epistaxis	Bark	Paste is made from the bark and the juice is taken twice daily until cure.	+ve
12	<i>Bryophyllum pinnatum</i> (Lam) Oken. (Crassulaceae)	Khodai-mosto	Kidney stone	Leaves	Half of the leaf is chewed and taken orally until cure.	+ve

13	<i>Cajanus cajan</i> (L.) Millsp (Fabaceae)	Paykong Pan	Jaundice	Leaves	The leaves are boiled and the water in taken.	+ve
14	<i>Calotropis procera</i> (Aiton) Dryand. (Apocyanaceae)	Ankon	Toe pain	Leaves	A broken earthen pot is heated and one leaf is placed on it and then the toe is placed on the pot for a while.	+ve
15	<i>Capsicum annum</i> L. (Solanaceae)	Akashi jhaluk	Scabies	Fruit	Fruit paste is applied locally regularly on the affected part.	+ve
16	<i>Carica papaya</i> L. (Caricaceae)	Madhumutha	Cat bite	Latex	The latex is applied on the affected area.	+ve
17	<i>Catharanthus roseus</i> (L.) G.Don, (Apocynaceae)	Cheramara	Diabetes	Leaves	3-4 leaves are chewed in the morning in empty stomach along with a glass of water.	+ve
18	<i>Cheilocostus speciosus</i> (J.Koenig)C.D.Specht. (Costaceae)	Kewa pan	Urinary pain	Rhizome	The juice from the rhizome is extracted and mixed with little sugar and taken orally.	+ve
19	<i>Cissus quadrangularis</i> L. (Vitaceae)	Satjora pan	Bone fracture	Stem	Paste is prepared from the stem and the broken part is bandaged for a week and the process is repeated for another week.	+ve
20	<i>Citrus limon</i> (L.) Burm.f. (Rutaceae)	Lebu pan	Vomiting	Mature leaves	Paste is prepared from the leaves mixed with jaggery and taken orally.	+ve
21	<i>Colocasia esculenta</i> (L.) Schott (Araceae)	Penek waktuk	Bee sting	Petiole juice	The petiole juice is applied on the affected area.	+ve
22	<i>Cuscuta reflexa</i> Roxb. (Convolvulaceae)	Akashi lata	Hair growth	Whole plant	Paste is made and applied on the scalp.	+ve
23	<i>Cynodon dactylon</i> (L.) Pers. (Poaceae)	Dubla talay	Piles	Whole plant	3 spoon of leaf juice is mixed with 10 drop of honey and taken orally	+ve
24	<i>Dioscorea bulbifera</i> L (Dioscoreaceae)	Hanthi	Cuts	Leaves	Paste is applied locally.	+ve
25	<i>Drynaria quercifolia</i> (L.) J.Sm. (Polypodiaceae)	Gorpanka	Urinary pain	Rhizoids	Rhizoids are made into paste and mixed with little sugar and water and taken orally	+ve
26	<i>Epiphyllum oxypetalum</i> (D.C) Haw. (Cactaceae)	Farokini rani	Cuts	Leaves	The leaf paste is tied in the affected area.	+ve
27	<i>Eryngium foetidum</i> L. (Apiaceae)	Kalijibha pan	Evil eye	Leaves	The leaf paste is applied behind the ear of small child and fingers	+ve
28	<i>Hibiscus rosa-sinensis</i> L. (Malvaceae)	Joba pan	Piles	Flower bud	Small balls are prepared from the paste and taken orally regularly for 15-20 days	+ve
29	<i>Hydrocotyle javanica</i> Thumb. (Araliaceae)	Manik Laichak	Conjunctivitis	Leaves	Juice extracted from the leaves is applied on the eyes.	+ve
30	<i>Jatropha curcas</i> L. (Euphorbiaceae)	Mandhar pan	Cuts	Leaves	Leaf paste is applied on the affected area.	+ve
31	<i>Justicia adhatoda</i> L. (Acanthaceae)	Botsam luri	Cough and Cold	Whole plant	The juice is extracted and taken thrice daily after meal	+ve
32	<i>Lawsonia inermis</i> L. (Lythraceae)	Mindi pan	Body pain	Leaves	The leaf paste is applied on the affected area.	+ve
33	<i>Leea macrophylla</i> Roxb. Ex Hornem. (Vitaceae)	Mungmai nakor pan	Asthma	Leaves	Leaves are dried in shade and powder is prepared and	+ve

					then it is rolled in Zea mays L husk leaf and smoked at bedtime.	
34	Mimosa pudica L. (Fabaceae)	Ladura pan	Toothache	Roots	The roots are chewed	+ve
35	Moringa oleifera Lam. (Moringaceae)	Khonjon pan	Acidity	Leaves	Leaves are heated to make paste and then taken with rice	+ve
36	Murraya koenigii (L.) Spreng. (Rutaceae)	Sung-Sung mai	Acidity	Leaves	The leaf juice is taken orally.	+ve
37	Musa acuminata Colla. (Musaceae)	Aanaji likthai	Dysentery	Unripe fruit	3 bananas mixed with 3L milk along with 250g Palm-candy are concentrated and taken whenever the person feels hungry.	+ve
38	Ocimum tenuiflorum L. (Lamiaceae)	Tulsi pan	Headache	Inflorescence	The inflorescence is fried with coconut oil and head is massaged with it.	+ve
39	Oroxylum indicum (L.) Kurz. (Bignoniaceae)	Naura pan	Jaundice	Bark	The bark juice is taken orally on regular basis.	+ve
40	Paederia foetida L. (Rubiaceae)	Diphai pan	Dysentery	Leaves	The juice extracted from the leaves is taken orally.	+ve
41	Phyllanthus emblica L. (Phyllanthaceae)	Param thai	Diabetes	Fruit	The raw fruit is taken regularly	+ve
42	Piper betle L. (Piperaceae)	Panchak	Cuts	Leaves	The leaf is chewed and applied on the affected part.	+ve
43	Psidium guajava L. (Myrtaceae)	Aashupuri pan	Dysentery/ blood dysentery	Leaves	The young tender leaves are taken orally.	+ve
44	Rauvolfia serpentina (L) Benth. Ex Kurz (Apocynaceae)	Chando teeta	Hypertension	Roots	Root paste is made and the extract is taken orally.	+ve
45	Santalum album L. (Santalaceae)	Botsam chandan	Vitiligo	Stem	Stem paste is applied regularly.	+ve

Table 1: Plants collected and studied from the study site.

Traditional knowledge and ethnobotanical information play an important role in scientific research (Awadh et al., 2004). India is one of the twelve megabiodiversity countries of the world having rich vegetation with a wide variety of plants with medicinal value that have been used for treatment of several diseases, including infectious diseases, hypertension etc. (Patrick, 2002). Even today many local and indigenous communities in the Asian countries meet their needs from the products they manufacture based on their traditional knowledge. Herbal drugs obtained from plants are believed to be much safer. These have been proved effective in the treatment of various ailments (Mitaliya et al., 2003).

In view of the increasing importance of traditional medicine which provides health services to 75-80 % of the world population and increased demand of herbal drugs, there is urgency for documentation of the medicinal utility of lesser known plants available in remote areas of the country (Zaidi and Crow, 2005).

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