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Ethnomedicinal study of plants used by Chang Naga tribe of Tuensang, Nagaland, India

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Abstract
An ethnomedicinal study of the plants used by the Chang Naga tribe of Nagaland was carried out. The study analyses and document the traditional knowledge of plant used for medicinal purposes by the indigenous Chang tribal of Tuensang district. Interview based survey was conducted among the local practitioners and village elders. During the study 50 different plants species belonging to 26 families were identified from different locations. The dominant families are represented by Cucurbitaceae, Lamiaceae and Solanaceae. Some of the commonly treated diseases are skin problem, dysentery, insect and snake bite, stomachache, diarrhea etc. This study indicates that there is an immense potential for further research of ethno medicine among the Chang tribal.

Keywords: Chang tribe, Ethno medicine, Interview, Nagaland, Potential, Tuensang.

Introduction
Nagaland, a north eastern state of India, is a humid sub tropical climate which harbors a rich biodiversity of flora and fauna. Many forest areas of the state Nagaland are still yet to explore scientifically, believed to have a great potential of discovering new plant species. One such area is the district Tuensang of Nagaland inhibited by the indigenous Chang naga tribe. Tuensang being one of the largest district in Nagaland is a haven for numerous medicinal plants. Tuensang share an international border with the country Myanmar on the eastern sector, located at an altitude of 26.28°N and longitude of 94.83°E. It has an average elevation of 1371m (4498 feet) above sea level. The climate condition of Tuensang is warm and temperate with heavy rainfall during summer and less or no rainfall during winter. The Chang naga tribe is known to practice traditional use of plants for the contemporary health care since ancient times and till today, they largely depend on plants for their survival and treatment of various diseases and ailments. Traditional use of plants still prevails in many areas of Tuensang district despite the continuous advancement of modern medicine. Many villagers depend on local practitioners and used locally available medicinal plants as a substitute of modern medicine. Therefore, the present study aim to analyze and document the orally pass down traditional knowledge of ethnomedicinal plants y the Chang naga tribe of Nagaland as a remedies to cure various ailments.

Method
The study was conducted during the month of December-January 2019. All the medicinal plants, local name, part used and medicinal uses were collected and noted down through oral conversation. The information was gathered by interviewing local practitioners and some village elders who has knowledge about the uses of plants for the treatment of various diseases. The scientific names of the plants were studied by using taxonomic books and journals. The plants were photograph for identification.

Materials
Pen, pencil, notepad, camera and smart phone

Table 1: List of medicinal plants and its uses by the Chang Naga tribe of Tuensang district, Nagaland:

Sl. No	Botanical name	Common name	Local name	family	Part used	Medicinal uses
1.	*Allium chinense*	Japanese scallion	lasing	Liliaceae	Bulb, Leaves	Stomachache, reduce cholesterol
2.	*Amaranthus spinosis*	Prickly amaranth	Pathak shik	Amaranthaceae	Whole plant	Stomachache, pile problem
3.	*Amaranthus spinosus linen*	Amarantha	Phathak shik	Amaranthaceae	Leaves	Stomachache, pile problem, antipyretic
4.	*Averrhoa carambola*	Star fruit	naleshik	Oxalidaceae	Fruits	Jaundice, astringent
5.	*Begonia palmate D. Don*	Begonia	Ampushik	Begoniaceae	Roots	Astringent
6.	*Centilla asiatica L.Urb.*	Indian pennywort	sangkhao	Umbelliferae	Whole plant	Skin disorder
7.	*Cinnamomum camphora L. Presl.*	camphor	phoulu	Lauraceae	Whole plant	Muscular pain, rheumatism
8.	*Colocasia esculenta L. Schott.*	Coco yam	dongeik	Araceae	Corm, Leaves, Petiole	Insect sting ,injuries, burn
9.	*Datura suaveolens Humb.& Bonpl. Ex Willd.*	Angels trumpet	bunyuh	Solanaceae	Leaves, Seeds	Asthma, euphoria
10	*Debregeasia edulis*	Water hemp	leikin	Utricaceae	Fruits, Leaves	Bleeding
11	*Diplazium esculentum (Retz.)Sw.*	Vegetable fern	kongtongshik	Athyriaceae	Leaves, young shoots	Tumor, asthma

12	*Discentra scandens (D. Don) Walp.*	Yellow bleeding heart	phubia	Fumariaceae	Tuber	Diabetes, dysentery, high blood pressure
13	*Dolichos lablab L.*	Hyacinth bean	Nyapashik	Fabaceae	Whole plant	Fever, abdominal pain
14	*Elsholtzia fruticosa*	Shrubby mint	Nounam/ngounam	Lamiaceae	Whole plant	Headache, diarrhea
15	*Elephantopus scaber*	Elephant foot	keilishang	Asteraceae	Leaves, Roots	Asthma, cough, dysentry, dyspepsia
16	*Eryngium foetidum L.*	Long coriander	tathonha	Apiaceae	Leaves	Jaundice, skin disease, liver disorder
17	*Eupatorium odoratum*	Siam weed	kungnaksang	Asteraceae		Wounds, burns, skin infection
18	*Ficus semicordata Buck. Ham.Ex Roxb.*	Drooping fig	teed	Moraceae	Fruits	Diarrhea
19	*Gynura nepalensis*	Nepal gynura	wentishik	Asteraceae	Leaves	Gastric, diarrhea, dysentery
20	*Hodgsonia heteroclite (Roxb) Hook.F. &Thomson*	Oil nut	pee	Cucurbitaceae	Leaves, nut	Fever, dysentery, diarrhea
21	*Imperata cylindrica*	Thatch	lang	Poaceae	Flower, Roots	Snake bite
22	*Ipomoea batata (L.) Lam.*	Sweet potato	khedam	Convolvulaceae	Tuber, Leaves	Diarrhea, burn
23	*Juglans regai L.*	Walnut	lakhek	Juglandaceae	Leaves, bark, Fruits	Blood pressure, diabetes
24	*Linum catharticum*	Mountain flax	Thutdi	Linaceae	Leaves, Sap	Toothache, boils, wounds
25	*Litsea citrate Blume*	Litsea	ishou	Lauraceae	Bark, seeds	Pain reliever, antiseptic, astringent
26	*Luffa cylindrical (L.) Roem.*	Sponge gourd	shangjeep	Cucurbitaceae	Fruits, Seeds	Liver disease, menstruation problem, anemia
27	*Lycopersicon lycopersicum*	Cherry tomato	pegama	Solanaceae	Fruits	Gastric problem, skin irritation, antiseptic
28	*Morus alba*	White mulberry	nangenam	Moraceae	Leaves, Fruits	Cholesterol, diabetes
29	*Momordica foetida Schumach*	Spiny gourd	kumsing	Cucurbitaceae	Roots	Headache, insect sting
30	*Momordica balsamina L.*	Balsam apple	kora	Cucurbitaceae	Leaves, fruits, seeds	Diabetes
31	*Manihot esculenta Crantz.*	Tapioca	bulikhe	Euphorbiaceae	Tuber, Leaves	Headache, diarrhea
32	*Mentha longifolia*	Pudina/mint	molisang	Lamiaceae	Leaves	Fever
33	*Morus laevigata W.*	Bholla	chemset	Moraceae	Leaves, Fruits	Injuries
34	*Mahonia nepalensis Dc.*	barberry	saipatbu	Berberidaceae	Roots, bark, fruits	Dysentery, diuretic
35	*Moringa oleifera Lam.*	Drumstick tree	shopi	Moringaceae	Flower, leaves, fruits, roots, bark	Urinary problem, laxative, tonic
36	*Melissa officinalis L.*	Lemon balm	nonam	Lamiaceae	Whole plant	Deworming
37	*Mentha spicata L.*	Garden mint	nangparang	Lamiaceae	Leaves	Toothache, jaundice, stimulant
38	*Ocimum basilicum L.*	Sweet basil	nyingkulang	Lamiaceae	Leaves, Seeds	Nose bleeding, fever
39	*Phyllantus acidus L. Skeels*	Star gooseberry	Aoulo laken	Euphorbiaceae	Fruits, Leaves	Jaundice, antipyretic
40	*Plantago asaitica L.*	Chinese plantain	thongponglishik	Plantaginaceae	Whole plant	Antiseptic, laxative
41	*Polygonum chinense L.*	Chinese knotweed	ilipong	Polygonaceae	Leaves	Gum disease, cough, bronchitis
42	*Prunus cerasoides D. Don*	Wild Himalayan cherry	nyengsa	Rosaceae	Bark, Fruits	Body ache, astringent
43	*Rhus semialata Murr.*	nutgall	aou	Anacardiaceae	Fruits	Headache, fever, indigestion, stomachache, vomiting
44	*Ricinus communis L.*	Castor bean	Thangde/nyingkalak	Euphorbiaceae	Leaves,Roots, Bark, Seeds Oil	Laxative, rheumatism
45	*Rubus moluccanus*	Muluccana bramble	Ukset bii	Rosaceae	Fruits	Laxative, headache, fever, ulcer
46	*Solanum indicum L.*	Indian nightshade	Khokshou hanbou	Solanaceae	Fruits seeds	Cough, dropsy, bronchitis, asthma
47	*Solanum melongena L.*	Egg plant	longkok	Solanaceae	Leaves, Bark	Dysentery, asthma
48	*Vicia faba*	Broad beans	Bukhup nyabashik	Fabaceae	Tender, pods, Bark	Diuretic, remove Warts
49	*Zanthoxylum armatum Dc.*	Toothache tree	jakshik	Rutaceae	Leaves, Fruits	Toothache
50	*Zanthoxylum rhetsa (Roxb.) Dc.*	Indian ivy rue	ngoung	Rutaceae	Seeds, Bark, Leaves	Chest pain, stomachache, snake bite

Result and discussion

The present study focused on the uses of plants for medicinal purposes by the Chang Naga tribe of Nagaland. It was discovered that a large number of plants were used by the tribals for treating various ailments. The research revealed that a total of 50 different plants species belonging to 30 families were used by the Chang people. The conducted survey plant species along with the description like botanical name, common name, local name, family, part used and their medicinal uses were summarized in table 1. Among the 30 families, Lamiaceae was found to be dominant with five species. The family Cucurbitaceae and Solanaceae were represented by four species each. Asteraceae, Euphorbiaceae and Moraceae were represented by three species each. Amaranthaceae, fabaceae, Lauraceae, Rosaceae and Rutaceae were represented by two species each. Family Anarcardiaceae, Apiaceae, Araceae, Athyriaceae, Begoniaceae, Berberidaceae, Convulvolaceae, Fumariaceae, Juglandaceae, Liliaceae, Linaceae, Moringaceae, Oxalidaceae, Plantagingceae, Poaceae, Polygonaceae Umbelliferae and Utricaceae were represented by only one species each. According to the research, the most medicinal used part of the plant is leaves. Due to anthropogenic activities like deforestation, jhum cultivation and forest burning ethnomedicinal plants are in grave danger of extinction. Community awareness on the preservation of forest among the villagers becomes a necessary measure to conserve ethnomedicinal plants.

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