



# The *Kom* traditional knowledge of ethnomedicine in Manipur, India

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## Abstract

The traditional knowledge of ethnomedicine remains integral to our health system today, even though the height of science and technology has reached the moon. Integrating this traditional medicinal knowledge with advanced modern healthcare would improve research and address awareness of the health of tribal communities. Thus, this study explores the healthcare practice among the *Kom* tribe of the north-eastern state of India, contributing knowledge to the changing world. The present study reports 41 plants, 3 insects and 3 animal species used by the indigenous community of *Kom* as ethnomedicine to cure 32 ailments.

**Keywords:** Healthcare, Indigenous, Medicinal plants

## 1. Introduction

India has a long history of using medicinal plants and herbal remedies to treat disease and advance health in tribal and rural areas (Samvatsar, 1996). Furthermore, the medicinal potential of these ancient herbal medicines have been recognized and documented since Rigveda and Atharvaveda (Bhattacharjya and Borah, 2008). Since then, plants and their extracts have been used therapeutically. Plant-based medicines are crucial to the global healthcare system (Yadav *et al.*, 2006). Ethnomedicine is frequently the only available treatment option for indigenous people living on the outskirts of the city and hence remains a component of the integrated health system. India has over 45,000 plant species (Grover *et al.*, 2002) and claims to have over 35,000 plant species (Sathyanarayanan *et al.*, 2022) having therapeutic potential. They are used for therapeutic purposes in many human civilizations around the world (Lewington, 1993). At the same time, at least 1000 bug species are said to be utilized therapeutically all over the world (Meyer-Rochow, 2017).

In the Indian context, numerous groups of people use insects for food and medicinal purposes. India is a large

country having different ethnic groups and there are approximately 705 different ethnic groups recognized as scheduled tribes (Narain, 2019). They dwell predominantly in rural areas and majority of them still living in isolated forest areas and relying heavily on the indigenous system of medicine (Dutta and Dutta, 2005). One among them is the *Kom* tribe of Manipur, whose knowledge of traditional medicine has continued for years and has been transmitted orally from generation to generation. This indigenous knowledge system of *Kom* is slowly diminishing with time. Post-colonial rule, with the introduction of education and the development of science and technology, the younger generation of *Kom* are more inclined towards modern medical science. As they are exposed to the modern world, they are far from the knowledge of their indigenous people, and their attachment towards ethno medicine has lessened.

On the other hand, with the advent of Christianity, the people have disengaged themselves from shamanistic healing practices. Instead, they would opt for spiritual awakening and faith healing practice. As a result, the age-old practice of ethnomedicine is slowly losing its

place in the health care system of the *Kom* people as the knowledge of ethnomedicine is only richly known to the shaman of the village i.e., Thempu. With the advent of Christianity, the transmission of their traditional knowledge hardly got transferred to the next generation due to the inclination towards their christian faith and exposure of the modern medical system. Thus, the present paper attempts to document the traditional ethnomedical knowledge of the *Kom* people.

## 2. Materials and methods

The present study is conducted among the *Kom* tribe of Manipur, located between 23.83° N and 25.68° N latitude and 93.03° E and 94.78° E longitudes (Fig. 1). Geographically, the *Kom* people reside in the foothills and are closely related to the forest and its products. The study was carried out from July 2020 to February 2022, and the study sites included two *Kom* villages, namely Khoirentak Khuman and Thayong of Churachandpur and Kangpokpi district, respectively. The snowball sampling technique was used to identify the key knowledgeable local traditional practitioners. Primary data has been collected from 4 local traditional practitioners and 15 elders aged 60-75 by direct interview method (Plate 1a). The medicinal plants, animal and insect species were identified by collecting the species, photographs and observation.

## 3. Results and discussion

A total of 41 plants, three animals and three insect species are used in curing 32 different ailments using the traditional knowledge among the *Kom* tribe of Manipur (Table 1 & 2). The treatments are based on using a single species or in combinations by taking medicine from the plant as infusion either with water or honey or directly consuming the boiled plant's part,

being the primary mode of treatment for various ailments. To treat various diseases, different sections of the medicinal plant species were employed, first the leaves, followed by the entire plant and rhizome. Most of the formulations are used orally, whereas, for ailments like bone fracture, bee-sting and skin diseases, medicines are for external applications only. The medicinal plants in the present study are locally available in forests, hilly tracts and paddy fields. Among the ailments treated, blood pressure is the most common disease. Five plant species, viz., *Persicaria odorata* (Lour.) Soják, *Eryngium foetidum* Walter, *Xanthoxylum armatum* DC., *Passiflora edulis* Sims and *Clerodendrum colebrookianum* Walp are used to treat this ailment.

Preparation of herbal medicine includes aqueous extraction, paste, juice, raw, soup and steam. The extracts of fresh fruits or leaves of the medicinal plants are applied directly to the affected area. The paste is prepared by pounding fresh or dried leaves and is applied topically to the affected area. This form is preferred due to its easy preparation of wound healing (Ayyanar and Ignacimuthu, 2009). The juice is consumed orally with honey. The raw form is consumed along with chutney. Soup is prepared by cooking parts of the plants like leaves, flowers and stems. The plant components were boiled with water to create steam, which was then inhaled by covering the face with a thick cloth to keep the vapour from escaping into the open. Steaming is also typical in many other ethnomedicinal studies (Olorunnisola *et al.*, 2013). There are no side effects after using these plant medicines and plant medicaments are the basis of many modern pharmaceuticals used daily for various ailments (Mali *et al.*, 2006).

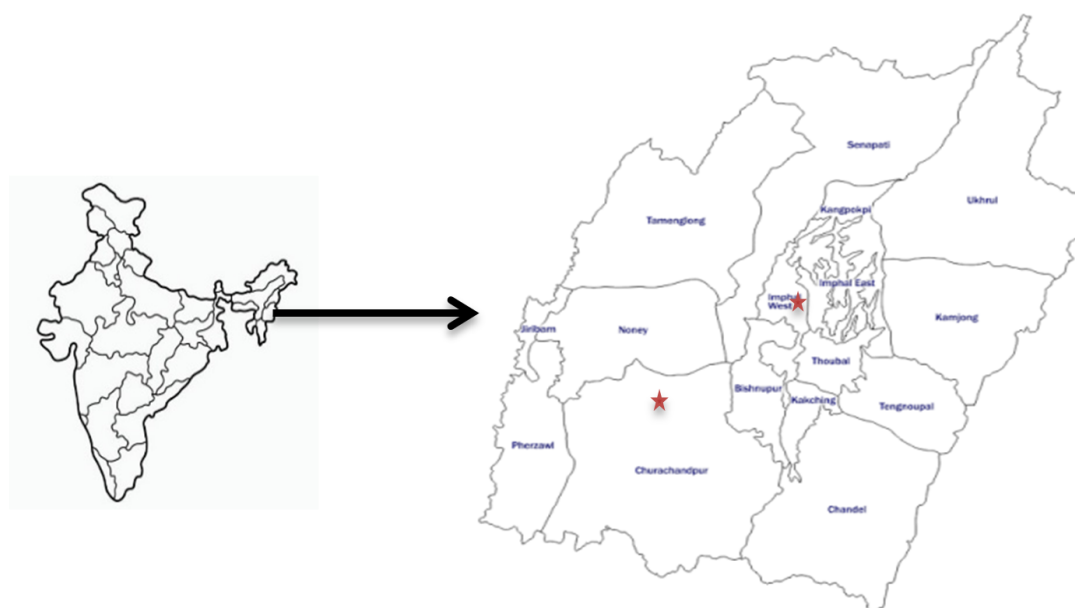


Fig. 1. Location of the study area

**Table 1.** Traditional methods of curing different types of ailments using medicinal plants

Sl. No.	Scientific name	Family	Local name	Part(s) used	Indication	Mode of preparation and consumption
1	<i>Acmella repens</i> (Walter) Rich. (Plate 2.a)	Asteraceae	Ansa	Flower	Toothache	The flower is crushed into paste and applied on the affected area.
2	<i>Ageratum conyzoides</i> L. (Plate 2.b)	Asteraceae	Khongsai kaher	Leaf	Cuts & wounds	Apply the paste of the raw leaf to the cut area. It coagulates the blood and stops bleeding.
3	<i>Allium hookeri</i> Thwaites	Liliaceae	Maroi nakuppi	Leaf	Fever	The leaf is crushed and applied to the infant's fontanel.
4	<i>Brassica nigra</i> (L.) W. D. J. Koch	Brassicaceae	Antram thai	Seed oil	Constipation	Take a teaspoon of warm mustard oil along with smashed garlic to relieve constipation.
5	<i>Brugmansia suaveolens</i> Bercht. & J. Presl.	Solanaceae	Sakor hlei	Leaf	Snake bite	Apply the leaf paste to the bitten area and leave it overnight. Repeat the process on the next day.
6	<i>Carica papaya</i> L.	Caricaceae	Awathapi	Fruit	Leucorrhoea	Consume a slice of the fruit along with yoghurt before meal.
				Root		Boil the root for 10-15 minutes and drink a cup of it with a teaspoon of <i>sidamasi</i> , an unrefined form of sugar, daily before meal.
7	<i>Centella asiatica</i> (L.) Urb (Plate 2.c)	Apiaceae	Sevon	Leaf	Acid reflux	Consume a glass of its juice along with honey.
					Tongue ulcer	Crush the leaf with honey and take two tablespoons of it thrice daily.
8	<i>Crassocephalum crepidioides</i> (Benth.) S. Moore	Asteraceae	Kapa ansa	Leaf	Stomach ache	Consume the boiled leaves Raw leaf can be consumed Drink juice along with honey.
9	<i>Curcuma caesia</i> Roxb.	Zingiberaceae	<i>Ai kadum</i>	Rhizome	Bee sting	A slice of the rhizome is kept on the affected area to soothe the pain.
10	<i>Curcuma longa</i> L.		<i>Tui-ai</i>		Boils	Fresh turmeric is crushed and made into a paste with the refined flour. Apply the paste to the infected area.
11	<i>Clerodendrum colebrookianum</i> Walp.	Lamiaceae	Busaibu	Leaf	High Blood Pressure	Eat the boiled leaves along with meal.
12	<i>Desmodium gangeticum</i> (L.) DC. (Plate 2.d)	Fabaceae	Ushomhrak	Whole plant	Urinary tract infection	Boil the entire plant for 20 minutes and drink at least one litre daily.
13	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	Uchi samban	Leaf	Acid reflux	Raw leaf is smashed or ground with water and a cup of it is consumed in diluted form.
					Tongue ulcer	Drink a cup of water boiled with leaves after adding honey.

14	<i>Eryngium foetidum</i> Walter	Apiaceae	Kor maroi	Leaf	High Blood Pressure	Eat the boiled leaf before meal.
15	<i>Euphorbia heterophylla</i> Desf. (Plate 2.e)	Euphorbiaceae	Hnom sena hlei	Leaf	Constipation	Eating 2-3 leaves is enough to relieve constipation. One can have it along with chutney.
16	<i>Ficus microcarpa</i> L.f. (Plate 2.f)	Moraceae	Nahou-kung	Stem	Dandruff	Dried wood is burned and made into a paste with water. Apply the paste to the head for 5-10 minutes and wash it off.
17	<i>Impatiens balsamina</i> L.	Balsaminaceae	Puktreng	Leaf	Cuts & wounds	Apply the paste of the raw leaf to the cut area. It coagulates the blood and stops bleeding.
					Toe nail infection	Leaves are rubbed against the palm and pasted on the nail overnight.
18	<i>Jatropha curcas</i> L. (Plate 2.g)	Euphorbiaceae	Chothe rape	Leaf	Cuts & wounds	Apply the paste of the raw leaf to the cut area.
				Milky sap from the leaf node	Toothache	Milky sap is collected with cotton is applied to the painful area.
19	<i>Lagenaria siceraria</i> (Molina) Standl.	Cucurbitaceae	Um-Kha	Fruit	Bee sting	The leaf is heated in the fire and pasted on the stung area.
					Headache	Extract the flesh of the fruit and apply it on the forehead.
20	<i>Luffa aegyptiaca</i> Mill.	Cucurbitaceae	Phoro-bu	Leaf	Burn	Apply the crushed leaf extract to the burned area.
21	<i>Mikania micrantha</i> Kunth (Plate 2.h)	Asteraceae	Khurinu-yam	Leaf	Cuts & wounds	The leaf is rubbed against the palm and dapped on the wounds. It acts as an antiseptic.
					Diarrhoea	Crush the leaf to express the juice and a tablespoon of the juice is consumed before or after meal.
22	<i>Mimosa pudica</i> L.	Fabaceae	Ekaithabi	Whole plant	Gout	Boil the whole plant for 20 minutes and drink a cup of it daily.
					Stone case (Gall bladder)	Boil the whole plant and drink it daily till the stone falls.
23	<i>Musa</i> sp.	Musaceae	Motyonglu	Sap from the stalk of flower	Tongue ulcer	Collect the sap of the flower with cotton and keep it on the infected area.
					Leucorrhoea	Add the extracted sap to cold water and take a cup of this mixture twice daily.
24	<i>Papaver somniferum</i> L.	Papaveraceae	Kani	Latex	Pile	The latex is applied to the anus to soothe the pain.
25	<i>Passiflora edulis</i> Sims	Passifloraceae	Kanainu hailing	Leaf	High Blood Pressure	Eat the boiled leaves along with meal.
26	<i>Persicaria odorata</i> (Lour.) Soják	Polygonaceae	Phakphai	Leaf	High Blood Pressure	Eat the boiled leaf before meal.
27	<i>Phaseolus vulgaris</i> L.	Fabaceae	Santang hawaii	Leaf	Fever	Crush the leaf and apply it to the crown of the head.
28	<i>Phlogacanthus jenkinsii</i> C.B. Clarke (Plate 2.j)	Acanthaceae	Chikpa	Leaf & Flower	Cough	Boil the leaf for a few minutes and take two cups of the decoction daily. flower is roasted and consumed for dry cough.
				Leaf	Nose congestion	Inhale the steam from the boiled leaves.
					Sprain	Boil the leaves in water and steam is applied as a warm compress with cloth on the affected area

29	<i>Phlogacanthus thyrsoformis</i> (Roxb.ex Hardw.) Mabb. (Plate 2.k)	<i>Acanthaceae</i>	<i>Chikpa-thur</i>	Leaf	Jaundice	Boil the leaves for 10 to 15 minutes and consume two to three leaves after food.
30	<i>Phyllanthus emblica</i> L.	<i>Phyllanthaceae</i>	<i>Suhlu</i>	Fruit	Constipation	Drink warm water after consuming the berry.
					Stomach ache	Drink a cup of water boiled with the berry for 3 or 4 times a day.
31	<i>Plantago major</i> L. (Plate 2.i)	<i>Plantaginaceae</i>	<i>Tapat</i>	Leaf	Boils	The leaves are ground to paste and applied to the infected area to absorb the pus.
32	<i>Plumeria alba</i> L. (Plate 2.l)	<i>Apocynaceae</i>	<i>Kaki leihao</i>	Seed	Leucorrhoea	Drink a cup of the boiled plant's seed with <i>sidamasi</i> , an unrefined form of sugar, daily before meal.
33	<i>Psidium guajava</i> L.	<i>Myrtaceae</i>	<i>Pōngneiton</i>	Leaf	Diarrhoea	Boil the leaves and drink its water or else one chew the tender leaves.
34	<i>Quercus serratus</i> Murray	<i>Fagaceae</i>	<i>Sasu Rayung</i>	Root	Bee sting	Raw root is crushed and applied to the affected area.
35	<i>Saccharum officinarum</i> L.	<i>Poaceae</i>	<i>Mashu kabang</i>	Stem	Jaundice	Squeeze the stem to extract the juice and consume 250 ml daily.
36	<i>Sapindus mukorossi</i> Gaertn.	<i>Sapindaceae</i>	<i>Lingse</i>	Seed	Toothache	The soaked seed is rubbed against the rock to make foam and is collected in a piece of cotton and kept in the infected area.
					Worm infestation	First, soak the seed in water for 5 minutes and rub it against a rock to make foam. Collect the foam in cotton or a piece of cloth and place it on the baby's fontanel for a few minutes till dry for deworming.
37	<i>Solanum nigrum</i>	<i>Solanaceae</i>	<i>Yong marcha</i>	Leaf	Gall bladder Stone	Boil the leaf in water and drink the decoction daily till the stone dissolves.
38	<i>Solanum xanthocarpum</i> Schrad.	<i>Solanaceae</i>	<i>Semtrok</i>	Fruit	Mouth ulcer	Crushed and mixed the fruit with honey and take 2 or 3 tablespoons of the mixture thrice daily.
39	<i>Toona ciliata</i> M. Roem.	<i>Meliaceae</i>	<i>Tairen</i>	Leaf	Back pain	Boil the leaf in a pot, collect the steam with a clean cloth and press on the injured area.
40	<i>Xanthoxylum armatum</i> DC. (Plate 2.m)	<i>Rutaceae</i>	<i>Kesuning</i>	Leaf	Cough	Boil the leaf of <i>kesuning</i> with <i>chikpa</i> for 20 minutes and drink 100 ml of it twice daily after food.
					High Blood Pressure	Consume the raw leaf along with chutney.
41	<i>Zingiber officinale</i> Roscoe	<i>Zingiberaceae</i>	<i>Thing</i>	Rhizome	Constipation	The rhizome is crushed into a paste and mixed with honey. Then it is covered with cotton and put inside the anus.
					Cough	The ginger is sliced into pieces, fried along with molasses and consumed.



**Plate 1a.** Interview with a *Kom* traditional healer; b. Pu K Harangcheiler Kom, (87), traditional healer

Interestingly, traditional knowledge of curing ailments utilising materials other than herbal sources is also to be noted that some edible insects, viz., *Nephila pilipes* Fabricius, *Udonga montana* Distant and *Gryllus* sp., and animal species, viz., *Bos taurus* L., and *Sus scrofa* L., have been used in curing specific ailments like a burn, cough, fever, bone fracture and breastfeeding problem (Table 2). At the same time, the people of *Kom* have widely used the extracted honey to treat mouth ulcers, coughs, and constipation. The insects used for medicinal purposes were consumed raw by mixing with water or roasted or made into a paste and applied to the wounded area for fast recovery. Overall, the present study provides comprehensive information

on the indigenous uses and traditional knowledge of the plant used by the *Kom* people of Manipur.

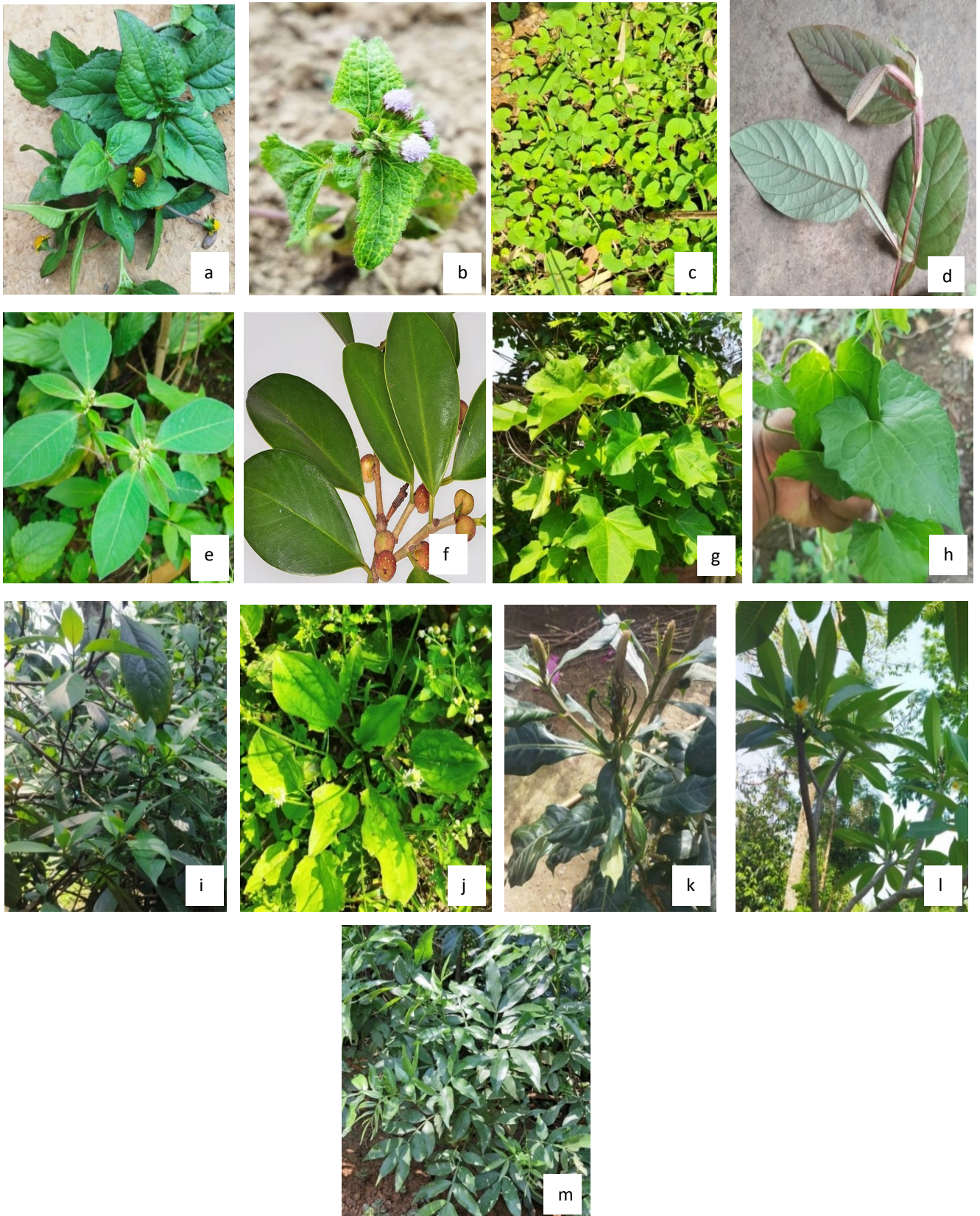
#### 4. Conclusion

The present study provides useful information regarding *Kom's* traditional knowledge on medicinal plants and animals used to treat various diseases. The study concluded that, although traditional knowledge related to ethnomedicine is static at present, it indicates its robustness, adaptability and effectiveness. Furthermore, with modern pharmaceutical products expected to become more expensive, people opt for economical and local healing practices they have acquired from their forefathers. According to the World Health Organisation (WHO) report, traditional plant medicine is used by more than three-fourths of the world's population (Rai *et al.*, 2000). In the instance of the *Kom* people, despite having access to modern medication for both simple and complex diseases, they continue to rely on ethnomedicine to cure various maladies. However, the practice is gradually disappearing from their healthcare system. Given the growing relevance of ethnomedicinal research in the modern world's health care system, the information on traditional medicinal knowledge retained in the mountainous area of Manipur may be a vital input in scientific investigations. The present study's findings reveal the benefits of ethnomedicinal utilization of 41 plant species, three insects and three animal species used by *Kom* to treat specific ailments. The preservation of traditional knowledge and local health practices of the *Kom* tribe is the outcome of the present study.

**Table 2.** Traditional methods of curing different types of ailments using animal species

Sl. No.	Scientific name	Family	Local name	Part used	Ailment	Mode of preparation and consumption
1	<i>Bos taurus</i> L.	Bovidae	Sarik thai	Extracted fats	Bone Fracture	Extract the fat portion from the meat by boiling it with water and massage the fractured area with the collected fats.
			Se-hmit	Gall bladder	Fever	A small portion of the dried gall bladder is mixed in a cup of warm water and taken twice daily.
2	<i>Gryllus</i> sp.	Gryllidae	Khungbai	Whole body	Cough	The insect is roasted and made into chutney with ginger for consumption
3	<i>Lumbricus terrestris</i> L.	Lumbricidae	Changche	Whole part	Kwashiorkor	The smashed worm is mixed in a cup of warm water and takes the mixture twice daily.
4	<i>Nephila pilipes</i> Fabricius	Nephilidae	Kaitalenpu	Whole body	Burn	The dry skeleton of the spider is crushed into a paste and applied to the wound area for fast recovery. It is used to heal the newly cut area of the baby's umbilical cord.
5	<i>Sus scrofa</i> L.	Suidae	Ram-vok	Fur	Sore breast	Dip the animal's fur in the water and apply the liquid to the breast as an ointment.
6	<i>Udonga montana</i> Distant	Pentatomidae	Thangbom	Whole body	Cough	The insect is roasted and made into chutney with ginger for consumption





**Plate 1.** a. *Acmella repens* (Walter) Rich.; b. *Ageratum conyzoides* L.; c. *Centella asiatica* (L.) Urb.; d. *Desmodium gangeticum* (L.) DC.; e. *Euphorbia heterophylla* Desf.; f. *Ficus microcarpa* L.f.; g. *Jatropha curcas* L.; h. *Mikania micrantha* Kunth; i. *Plantago major* L.; j. *Phlogacanthus jenkinsii* C.B. Clarke; k. *Phlogacanthus thyrsoformis* (Roxb. ex Hardw.) Mabb.; l. *Plumeria alba* L.; m. *Xanthoxylum armatum* DC.

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