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Mayong, a Treasure of Herbal Remedies: A Survey Report

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Abstract: Mayong is a small revenue circle of Morigaon district of Assam (India) covering 179 small villages. Mayong is known as the “Land of black magic” where different types of black magic and herbal remedies were practiced by the natives since the ancient era. Although black magic is out of practice in the recent time but herbal remedies are quite popular among the local people till now. The present study aims to document data about the traditional uses of plant in health care among the local people of deferent villages of Mayong. Direct interviews and structured questionnaires were used to find out the information of medicinal plants. Total 75 informants were selected from 8 different villages and repeatedly interviewed with the help of oral conversation and structured questionnaire to investigate about the plant species. We have enlisted 50 numbers of plants and their different traditional uses as medicines. These plants belong to 36 different families. Among the plants the highly used plant part was leaf (40%) and to prepare remedial herbal formulation the frequently used component was Goat Milk. The above study can point out that how much the Mayong area is full of traditional knowledge about herbal medicine. The area needs more exploration and the findings need scientific investigation.

Keywords: Herbal remedies, Mayong, Black magic, *Bej*, Medicinal plants, *Tiwa*

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Introduction

Survey and documentation of a country's and community's natural products is an important prerequisite for proper utilization of its raw material. Full knowledge of plants is necessary, so as to enhance proper utilisation (Madalina *et al.*, 2023). India has rich medicinal plants of more than 7500 species where Assam is a home of half of these plants alone. Of these, 4635 species are

used commercially on a fairly large scale. Over 50% of all modern clinical drugs are of natural product origin (Dev, 1999) and thus these products play important roles in drug development in the pharmaceutical sciences (Saranraj *et al.*, 2016). The compounds found in the plants have a beneficial effect on health or play an active role in amelioration of diseases. Now-a-

days, the demand for more and more drugs from plant sources is continuously increasing. It is therefore essential to evaluate plants of medicinal value systematically for various ailments that are used in traditional medicine (Kalia, 2005; Wagay *et al.*, 2019).

Ethnomedicinal investigation is always conducted to highlight the traditional knowledge of medicinal plants being used by tribes (Banker and Bhosle, 2017). Mayong is small remote area of a very small district Morigaon in the state of Assam, India. It can be considered as a goldmine of traditional medication process. Black magic and traditional medication practiced by native tribes of Mayong has a long history (Hazarika *et al.*, 2022). Tiwa, Miri, Nath, Kachari, Karbi, Keot are the major communities of Mayong practiced on traditional medication process (Bhuyan, 1984). The region comes under dense forest area and situated besides the Pobitora wild life sanctuary. Mayong is surrounded by small hill and hillocks from the north known as Kachoxila (Tortoise shaped stone). The river Sonai and Pakaria flow from east to northwest of the village. On the extreme south the River Kolong flows from the northwest towards the west up the confluence of river Brahmaputra. The geographical placement of Mayong might be the prime factor of the formulation of distinctively practiced culture and believe in traditional medication system over modern healthcare (Barua, 1940; Nath, 1948). During the study, authors met tribal old peoples, traditional practitioners, *bej* for collection of ethno medicinal data.

Materials and Methods

Area of study:

The survey was conducted in different villages of Mayong (Fig. 1), Morigaon district is in Assam (India). It is 58 km away from Guwahati city. This region lies between 26-12' North to 26-15' North latitude and 92-2' East and 92-5' East longitude. Mayong, though is a very remote and socio-economically backward area, has been able to draw special incentive in the traditional scenario

of India, harbouring very rich diversity of medicinal plants and their use to cure various ailments by the native people. The Mayong area has a unique characteristic with its diverse tribes and communities and with their own socio-cultural heritage. The Mayong circle, which constitute the present study area comprised of 179 revenue villages with a total population of 2,78,367 (Census in India, 2001).

Survey Methodology:

Plants for the present study were collected in the field, in markets, and at the homes of traditional healers. An extensive and intensive field study was undertaken using the methodology of Jain and Rao (1969) covering the whole area of Mayong administrative circle from January 2023 to December 2023. The informants (healers and market vendors) in this area were repeatedly interviewed during this time, using structured questionnaires. The questionnaires did not include any reference as to disease concepts, plant parts or preparation. In contrast, the participants were asked simple questions along the lines-- What is this plant used for, which part, which quantity, how it is prepared, are any other plants added to the mixture. All questions were asked in the same order and it was in Assamese language (Bussmann and Glenn, 2010; Ghorbani *et al.*, 2011). The villages were selected on the basis of the following consideration: (i) areas where the tribes constitute more than 50% of the population and are distributed in a contiguous belt; (ii) areas where medical facilities are scanty or rudimentary; (iii) areas where people are economically weak and (iv) areas where people approach first the village medicine man for treatment of most of the ailments.

Meticulous efforts were made in this direction so as to gather as much as information on each and every plant species. From each village 10 respondents were selected at random to make the final sample size. The general procedures for collection of data regarding use of medicinal plants for different ailments were followed. During field works, the informants were requested to

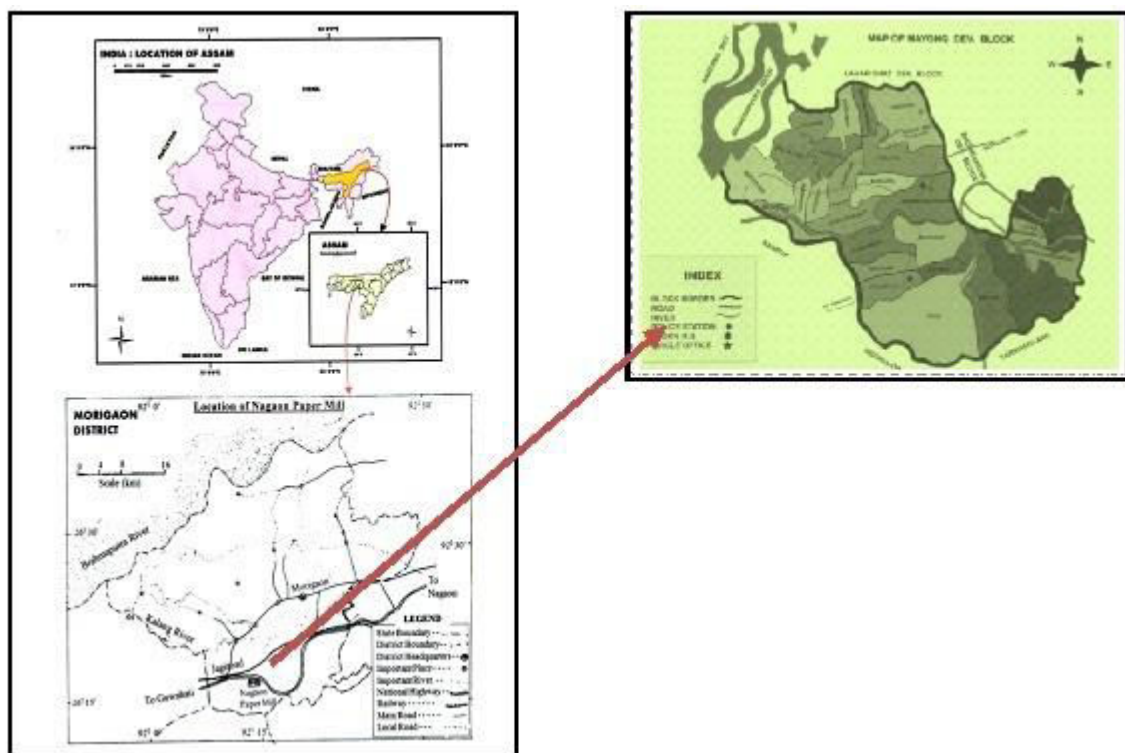


Fig. 1: Map showing location of Mayong in Morigaon, Assam (Source of the map: Department of Geography, Gauhati University).

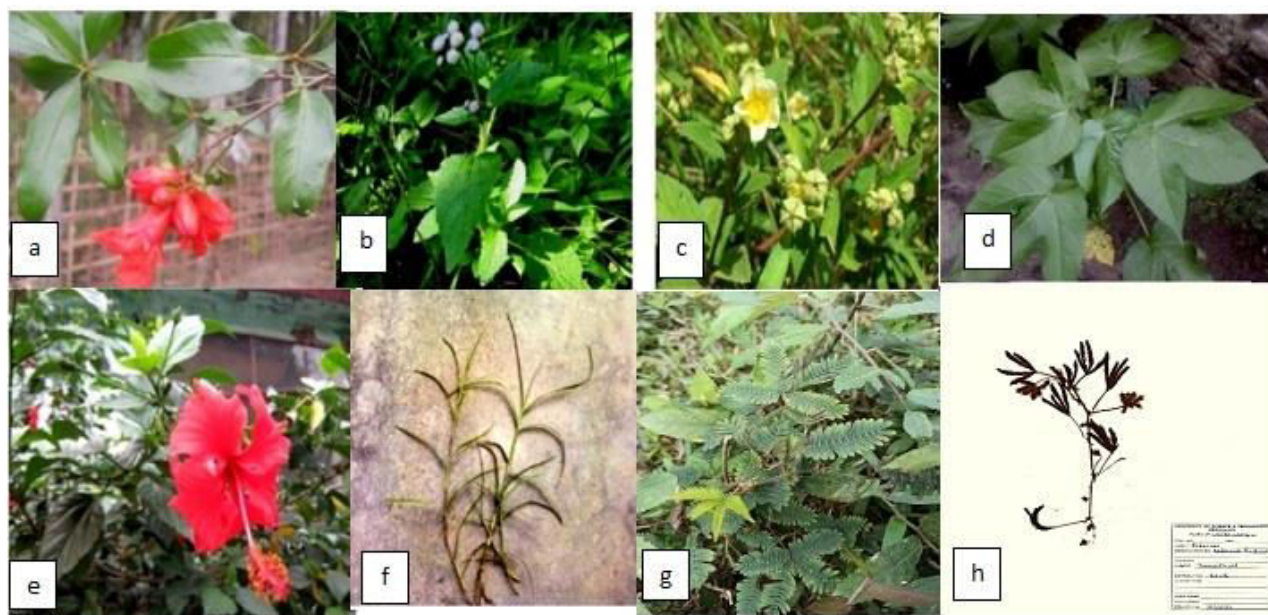


Fig. 2: Figure showing sample photograph and herbarium of a few medicinal plants that has been identified during the survey. [a. *Punica granatum*, b. *Ageratum conyzoides*, c. *Sida cordifolia*, d. *Gossypium arboreum*, e. *Hibiscus rosa sinensis*, f. *Cynodon dactylon*, g. *Mimosa pudica*, h. Herbarium of *Mimosa pudica*]

Table 1: Herbal formulation and mode of administration with uses of plants used by people of Mayong

S. No.	Local name	Scientific name	Family	Extra component used to prepare formulation	Herbal formulation for treatment of ailments
1	OouTenga	<i>Dillenia indica</i> L.	Dilleniaceae		1. 2-3 fresh fruit carpel, dissolve in one liter of boiling water for 6 hours and about half cup this water should use as drink at morning in empty stomach for one month to get rid of obesity .
					2. Fruit uptake in daily basis with food can reduce congestion in lungs .
2	Ashwagandha	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Goat milk	3-5-inch-long root piece boiled in one liter of boiled goat milk should drink thrice daily for one month to increase sperm count .
3	Teel	<i>Sesamum indicum</i> L.	Pedaliaceae		Seed or leaf paste directly applied on scalp can increase hair growth , reduce dandruff and prevent from fungal scalp infection .
4	Jatilau/ Panilau	<i>Lagenaria siceraria</i> (Molina) Standl	Cucurbitaceae	Rice-soaked water	1. 4-5 inch long roughly pasted root mixed with 1 liter of rice-soaked water and boiled for one hour. After filtration this water can use as conditioner for long and shiny hair .
				Dry fish	2. Using fruit juice with dried fish as curry with meal can prevent small pox .
5	Jobaphul	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae		1. Leaf paste directly applied on scalp and hair as a conditioner for long and shiny hair . It can also prevent our scalp from dandruff .
				Goat milk	2. 2-3 flower mixed with half liter of goat milk should drink twice daily for one month to get rid of fowl smelled vaginal discharge .
6	Mutha bon	<i>Cyperus rotundus</i> L.	Cyperaceae		Roughly pasted 4-5 plant's areal part soaked in 2 liter of water whole night. After filtration remaining filtrate should use as conditioner for long and shiny hair .
7	Karpoor	<i>Cinnamomum camphora</i> (L.) J.Presl.	Lauraceae	Coconut oil	10-11 leaf paste dissolve in boiled coconut oil for 1 hour. After filtration 1-2 drops of this oil extract should directly applied for ear infection or boil inside the ear for two week regularly to get rid of it.
8	Kola kochu	<i>Colocasia esculenta</i> (L.) Schott	Araceae		1. The juice produce from stem if directly applied over boil for one week can reduce the pain and it helps to early removal

					of pus from the boil.
					2. For removal of corn , the stem juice mixed with "Soon" (CaCO ₃) should rubbed over it for one month thrice daily.
					3. The stem rolled on coconut oil and warmed in direct fire can be use as cleaner by inserting it in ear to remove clotted wax produce during ear infection .
9	Kona himolu	<i>Commelina benghalensis</i> L.	Commelinaceae		The juice produce from young stem if directly applied over boil for one week can reduce the pain and it may decrease the growth as well.
10	Mati mah	<i>Lens culinaris</i> Medikus	Fabaceae		2-3 spoon of seed soaked in water for one night, pasted and applied on boil can reduce the pain and early removal of pus .
11	Kothonaphul	<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. etSchult.	Apocynaceae		1. 3-4 washed petals soaked overnight in a half glass of sterilized water (boiled water and then cooled) and applied directly on eye to reduce eye redness, eye swelling and eye irritation .
					2. The solution is also used to wash the skin rashes which is caused due to small pox or measles infection .
12	Nayantora	<i>Catharanthus roseus</i> G. Don	Apocynaceae		1. Leaf paste can directly applied on boil to reduce their structure and pain.
					2. Consuming 2 -3 leaves every day in empty stomach can reduce blood sugar .
13	Agyachit	<i>Plumbago zeylanica</i> L	Plumbaginaceae		1. Root paste directly applied on the infected area for one month daily can reduce the pain and blood flow of Piles . Long time use of this medicine can cure piles.
					2. Root juice along with warm water for one week daily is used to abort unwanted pregnancy .
14	Kola halodhi	<i>Curcuma caesia</i> Roxb.	Zingiberaceae		1. Application of rhizome paste directly over skin for one month twice daily can cure white mark over skin .
					2. Fine paste of rhizome directly applied on the infected area for one month daily can reduce the pain and blood flow of Piles . Long time use of this medicine can cure piles.
15	Nohoru	<i>Allium sativum</i> L.	Amaryllidaceae		1. Regular consumption of one clove of garlic with warm water for three months twice daily can reduce obesity .
					2. Using garlic as a spice with meal can reduce high blood

					pressure.
					3. One clove of washed garlic covered with a piece of cleaned muslin cloth, inserted in vagina every day for one month can cure Leucorrhoea .
16	Sauf	<i>Foeniculum vulgare</i> Mill.	Apiaceae		20 gms of sauf seed along with 10 g of talmishri (Palm sugar) soaked in one liter of water overnight, used as drink in empty stomach for one week can cure Urinary tract infection and kidney stone .
17	Tengesi	<i>Oxalis stricta</i> L.	Oxalidaceae	Pani lau and Moa fish. (Bottle gourd and <i>Amblypharyngodon mola</i> fish)	1. Juice of whole plant along with panilau (Bottled guard) and boiled Moa fish (<i>Amblypharyngodon mola</i>) considered as a preventive medicine for Small pox .
				Black salt	2. Whole plant juice along with a pinch of black salt can cure dysentery .
					3. Whole plant juice is a good preventive medicine for Jaundice .
18	Kopalphuta	<i>Physalis minima</i> L.	Solanaceae		Using root paste over the eyebrow for 3-4 h can reduce headache .
19	Aparajeeta	<i>Clitoria ternatea</i> L.	Fabaceae		1. By inserting 3-4-inch root in the vagina every day for seven days can abort unwanted early pregnancy .
				Goat milk	2. Using root juice along with goat milk one in a day for one month can cure leucorrhoea .
20	Biyonihabota	<i>Achyranthes aspera</i> L.	Amaranthaceae		Inhale of fresh leaf juice once daily for seven days can reduce the headache and nose blocking of Asthma .
21	Jai phal	<i>Myristica fragrans</i> Houtt.	Myristicaceae	Honey	2-3 dried fruit powder along with honey used twice daily for 3 months can cure whooping cough in children.
22	Rihagos	<i>Boehmeria nivea</i> (L.) Gaudich	Urticaceae		Fresh juice of leaf or Stem with warm water used once daily in empty stomach for 3 months reduce Jaundice and its related weakness.
23	Bel	<i>Aegle marmelos</i> Correa	Rutaceae	Black peper	1. Leaf juice taken orally mixed with black pepper once daily for one week to treat piles .
					2. Leaf decoction is fed orally as tea to reduce delivery pain and fast delivery during child birth.
24	Dalim	<i>Punica granatum</i> L.	Punicaceae	Honey	Peel of ripen fruit mixed with honey should take daily for one month to treat chronic dysentery .

25	Karabi	<i>Nerium indicum</i> Mill.	Apocynaceae		Leaf is used against skin disease .
26	Nuni	<i>Morus australis</i> Poin. In. Lam.	Moraceae	Honey	1. Fruit juice mixed with honey is used to treat cough .
					2. Root juice mixed with warm water used for one month to treat jaundice .
27	Narjeeful/ Gendhaifu	<i>Tagetes patula</i> L.	Asteraceae		1. Leaf paste is used to treat fresh cuts and wounds .
					2. One teaspoon of whole plant juice with warm water is used to treat dysentery .
28	Silikha	<i>Terminalia chebula</i> Retz.	Combretaceae		1. Fruit juice is used as appetizer .
					2. Fruit juice is applied to heal the rash caused by small pox .
					3. Fruit ash is applied on eyebrow of infants for proper growth of eyebrow hair .
					4. Grinded fruit soaked overnight in a glass of water overnight and consume for one month daily can heal piles .
29	Bogori:	<i>Ziziphus jujube</i> Lam.	Rhamnaceae		bark juice is useful in stomach trouble .
30	Pachatia	<i>Vitex negundo</i> L.	Verbenaceae	Mustered oil	1. Leaf juice boiled with mustard oil is applied externally to get relieve from rheumatic pain .
					2. Leaf powder (Sun dried and grinded) mixed with warm water taken for twice daily for one week can heal internal haemorrhage .
31	Akon	<i>Calotropis gigantea</i> (L.) W.T. Aiton	Apocynaceae	Ghee	Aged Cow Ghee applied on mature leaf first heated in a pan and the paste on the back to get rid of back pain .
32	Sukloti	<i>Pogostemon benghalensis</i> (Burm.f.) Kuntze	Lamiaceae	Raw garlic cloves	Leaf juice boiled with raw garlic is taken for one month daily to treat internal hemorrhage .
33	Mosondori	<i>Houttunynia cordata</i> Thunb.	Saururaceae		Consuming whole areal part with food daily can prevent bacterial stomach infection, viral infection and lung infection .
34	Jamu	<i>Syzygium cumini</i> L. Skeels	Myrtaceae		Wooden glass made by its wood used to store water overnight and that water should consume in empty stomach every morning can reduce blood sugar level .
35	Lajuki lota	<i>Mimosa pudica</i> L.	Fabaceae		Leaf juice is use to treat frequent and small quantity urination in old aged people.
36	Sogunilota	<i>Tinospora cordifolia</i> (Thunb.) Mieres	Menispermaceae		leaf and stem juice used to treat malaria and diabetes .
37	Ponownowa	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Fish	Consuming whole areal part soup

					with dry fish once in a week can prevent all kinds of kidney ailments .
38	Gakhiroti bon	<i>Euphorbia hirta</i> L.	Euphorbiaceae		Whole plant juice is given to lactating mother to increase milk production .
39	Hatikhutura	<i>Amaranthus spinosus</i> L.	Amaranthaceae		Whole plant juice is given to lactating mother to increase milk production .
40	Borboreal	<i>Urena lobata</i> L.	Malvaceae	Mustard oil	Root is boiled in mustard oil applied on affected area useful in reducing rheumatic pain .
41	Halodhi	<i>Curcuma longa</i> L.	Zingiberaceae		Rhizome paste is used over displaced joints due to trauma.
42	Keheraj	<i>Eclipta alba</i> L.	Asteraceae	Coconut oil	Applying oil made by leaves boiled in coconut oil over scalp reduce hair fall .
43	Duron:	<i>Leucus aspera</i> Spreng.	Lamiaceae		1. Consumption of whole plant as vegetable once in a week can act as a preventive medicine for Jaundice .
					2. 3-4 drops of washed leaf juice inhalation can reduce the headache and nose blocking of asthma .
					3. Consumption of boiled 10-20 leaf paste can reduce indigestion and can increase appetite .
44	Amita	<i>Carica papaya</i> L.	Caricaceae		1. By consuming 2-3 fresh flower in empty stomach can cure Gastric problem and can reduce Blood sugar .
					2. Juice of 2-3 small raw fruit juice used daily in empty stomach for seven days can abort unwanted early pregnancy .
					3. Latex applied over ring worm twice daily for one month can cure the infected skin completely.
45	Xunborial	<i>Sida cordifolia</i> (Linn.)	Malvaceae		1. 2 to 3 inch of root washed and then pasted is used in the swelling on gum to reduce dental pain and infection .
					2. Whole plant extract is useful in rheumatism and urinary trouble .
46	Gundhua bon/ Gendhali bon	<i>Ageratum conyzoides</i> (Linn.)	Asteraceae		The washed and sterilized stem in hot water cut into one inch section wrap in a cotton sterilized cloth and inserted in vagina to treat leucorrhoea .
47	Nara bogori/ Ahombogori	<i>Prunus persica</i> L. Batsch.	Rosaceae	Naphthalene ball	Leaf paste mixed with mixed with one pinch of naphthalene ball powder and applied on painful nail infection for one month continuously for get rid of it.
48	Sewali phul	<i>Nyctanthes arbour-tristis</i> L.	Oleaceae		1. Leaf juice is use to get rid of congestion in lungs .
					2. Flower juice of taken with food stuff is used as a de worming medicine in children.

					3. Seed paste is applied on scalp for reducing dandruff and hair fall .
49	Gulonchichampa	<i>Plumeria alba</i> L.	Apocynaceae		Dried flower boiled in water and the reduced extract is used to treat jaundice .
50	Kumura	<i>Benincasa hispida</i> (Thunb.)cogn.	Cucurbitaceae		1. Leaf pastes with pince of salt used in pobia disease (infection in nail spreaded to the first segment of finger)
					2. Agedfruit (Burakumura) juice to dissolve Kidney stone .

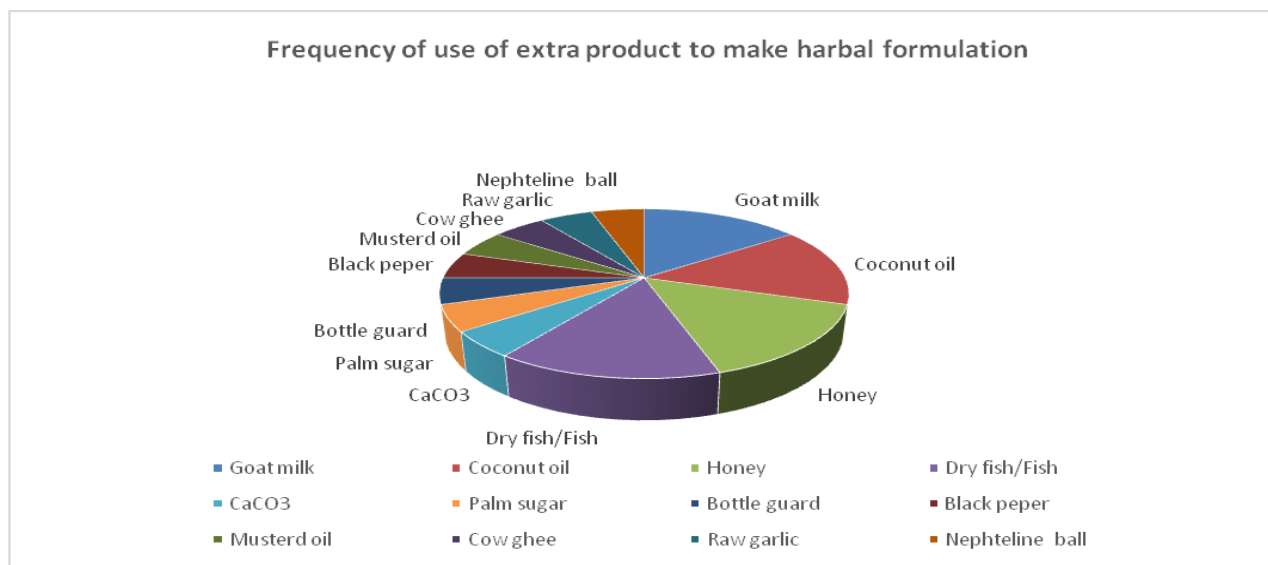


Fig. 3: Figure showing the frequency of plant's part used by healers to prepare the formulation.

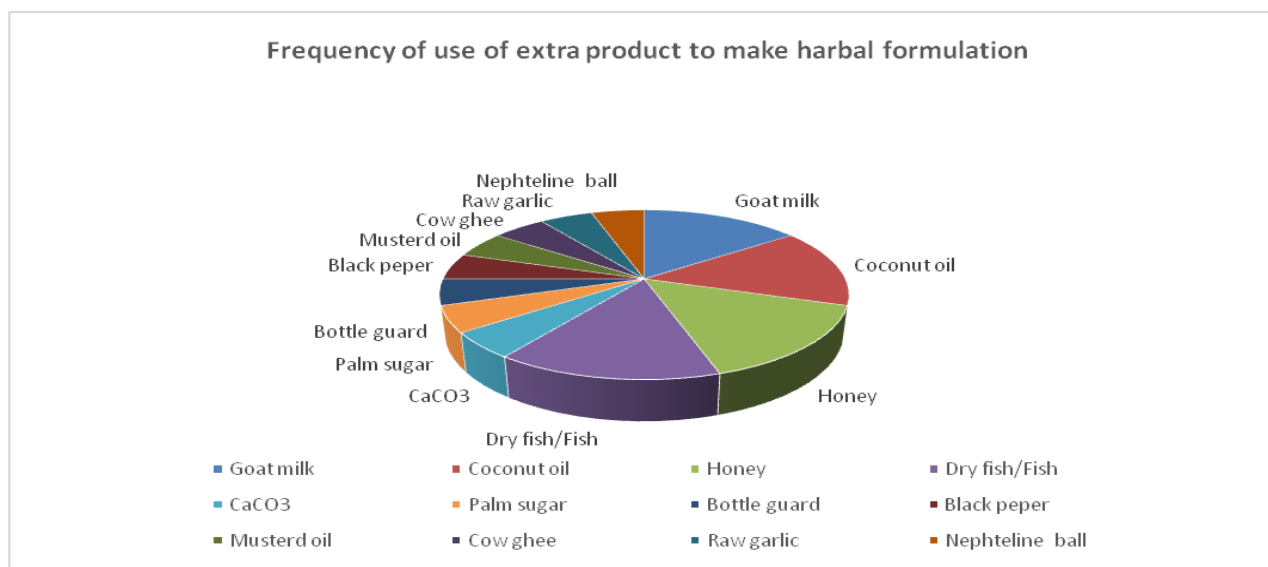


Fig. 4: Figure showing using frequency of extra product to prepare herbal formulation for different ailments.

accompany to the field and to show the plants (Sharma and Sharma, 2010; Ashfaq *et al.*, 2019). Identification of plant species were carried at Department of Botany, University of Science and Technology, Meghalaya, India and the plant specimen were preserved according to the conventional herbarium technique (Mitra, 1974).

Results and Discussion

In the enumeration, plants are arranged with Local name (in Assamese language), Scientific name along with Family, additional product used in the herbal formulation (if any) and mode of administration with uses (Perumalsamy and Ignacimuthu, 2000; Saranaj and Stella, 2011). In the present study 50 numbers of plant species from 36 different families were documented and identified as herbal remedies for different ailments in Mayong (Table 1, Fig. 2). The herbal formulations are used in both therapeutic and prophylactic means. Mostly used plant species were from the family Lamiaceae, Asteraceae, Amaranthaceae, Zingiberaceae, Solanaceae and Malvaceae. Other families are less important because they contributed only one plant species each to the pharmacopoeia. In the findings it was observed that the highly used plant part to make herbal remedy was Leaf (40%) and the least used plant part was stem (9%) (Fig. 3). In almost 90% of the cases fresh plant material was used to prepare remedies, while in others dried powder was used. Over 70% of the remedies were applied orally while the remaining was applied topically. Many remedies were prepared as mixture of multiple ingredients by mixing with goat milk, dry fish, fresh fish, coconut oil, mustard oil, naphthalene ball, honey etc. (Fig. 4).

The knowledge of Herbal remedies, which are considered as the oldest form of health care has been passed on orally from generation to generation without any written documents (Fabricant and Farnsworth, 2001, Kolanji Nathan and Saranaj, 2015). Documenting the indigenous knowledge through ethno-botanical studies is important for the conservation and utilization of biological resources. Ethno-botanical study has

been found to be one of the reliable approaches to drug discovery (Ambasta, 1986). There are a bundle of ethno-botanical studies going on all over the world to identify some of the rare medicinal plants used by different communities of the world to heal the ailments. Lots of information and herbal formulation have been identified by researcher world wide which can help to discover novel drugs which became very beneficial for mankind. Recently in a similar kind of study some novel medicinal plants used in respiratory disorder from Pakistan has been identified (Dilbar *et al.*, 2023). In another study researcher from Ethiopia has investigated 73 plant species which have tremendous effect against many human diseases (Megersa *et al.*, 2023). Recently, in another investigation in China, researchers have identified 60 different plant species belonging to 41 families used by Bulang community in Yunnan, China (Zhou *et al.*, 2023). Although such studies only open the preliminary door for novel drug discovery, more and more advanced laboratory investigation is needed to authenticate such information. In the present study also the information about medicinal plants used by natives of Mayong, that has been collected by the authors need further scientific investigation for the benefit of mankind.

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