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RESEARCH ARTICLE

ETHNOMEDICINAL PLANT USED BY DIFFERENT COMMUNITIES OF MAJULI, ASSAM, INDIA

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Abstract

Since ancient times, plant have been utilised in ethnomedicine to treat a variety of illnesses. This study aimed to document the extent of plant resources utilized by the common local population to treat various ailments. Numerous diseases, such as diarrhea, indigestion, asthma, malaria, piles, fever, body aches, coughs, skin disorders, jaundice, headaches, kidney, and liver problems were treated with these plants. Field trips and questionnaire surveys were used to gather data on the applications of different plants. A total of 93 plant species from 56 families were described in this study, and they have utilized to cure about 52 different ailments. The widely used family was Zinziberaceae with 6 species. The predominantly used plant part is leaf with 31 species. The majority of the plants were classified as trees, shrubs, and herbs.

Introduction:-

Ethnomedicine has been an important resource for health for many years in various communities around the world. Abundantly existing plant resources have been utilized in different traditional medicine to treat various ailments, from respiratory issues to neurological disorders. Ethnobotany, the study of traditional medicine, provides a clear understanding of the uses of plants for human health. Almost all population in India utilizes plants as medicine, with a total of 7500 plant species being utilized by multiple ethnic communities. About 225 tribal communities inhabit in North East India (Chatterjee et al., 2006) and it is acknowledged as biodiversity hotspot (Mao et al., 2009) which falls Indo-Burma and Himalayan Biodiversity hotspots of India. Majuli is the world's largest river island which is situated in the north-eastern state of Assam located between 26º45' N- 27º12' N latitude and 93º39' E and 94º35' E longitude. It covers an area of approximately 880 square Kilometers, although erosion has reduced its size significantly over the years. The island district is home to a distinctive fusion of traditional practices and environmental importance, as well as a rich Assamese cultural legacy. Paddy fields, water bodies, and an abundance of vegetation define the peaceful island's scenery. Scheduled tribes and castes, as well as non-tribal castes, make up Majuli's population. Members of the Mishing (the majority), Deori, Kaibarta, and Sonowal Kachari tribes are among the indigenous populations. The Hindu Assamese groups of Koch, Kalita, Ahom, Sutiya, and Jogi are non-tribal castes. The majority of Majuli people still rely on traditional remedies to treat their illnesses. Herbal practitioners inherited their knowledge of medicines from their ancestors, and frequently, this knowledge system is lost when the practitioner passes away. Therefore, appropriate scientific investigations of the ethnomedicinal knowledge are urgently needed in order to conserve and facilitate the transfer of this amazing medical system for the benefit of future generations. Based on the information mentioned above, the study was conducted to document the ethnomedical use of plants by various communities of Majuli.

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Methodology:-

The study was carried out between October 2023 to January 2024. Information was gathered by visiting several traditional healers both women and men healers and common people in the district. The botanical literature, such as Flora of India (Sharma et al., 1993) and Flora of Assam (Kanjilal et al., 1934–1940), as well as the deposited herbaria of the Botany Department, Majuli College, Majuli, were used to identify the plants. The available literature on these medicinal plants and their ethnobotany was compared to the information obtained (Chopra and Verma, 1968; Jain, 1991).

Results and Discussion:-

The results of this study are displayed in Table 1. The plant species are listed in the table alphabetically along with their families, and regional names, growth habits; portion utilized, illnesses they cure, and preparations. The traditional knowledge of herbal medicine was recorded from Assamese, Mishing, Deori, Kaibarta, and Sonowal Kachari communities of the river island Majuli, Assam. The medicinal properties of 93 plants from 56 distinct families have been recorded. Maximum plant species belong to Zingiberaceae, Poaceae, Lamiaceae, Malvaceae, Rubiaceae, Verbinaceae, Apocynaceae, Liliaceae, and Amaranthaceae families. With six species, the Zinziberaceae family was the largest, and the bulk of the 31 species leaves were used to treat various illnesses. According to life form (growth habit), the number of plant species utilized by the communities is 47% herbs, 27% trees, 19% shrubs, 5% climbers, and 2% creepers respectively. For the treatment of 52 distinct ailments, these plants are used. Among these, 21 plants were acknowledged for their effectiveness in treating different intestinal issues, 13 plants were utilized to treat respiratory problems and fever, muscle and joint pains, 12 plants for relief of jaundice and liver problems, and 6 other plants were the healing of wounds, cuts, and burns, and 3 plants for the treatment of skin diseases and infections.

Table 1:- Result of Field Study.

Sl No.	Botanical name/Family	Regional name/Growth Habit	Portion utilized	Preparation and illness cured by the plant
1	*Acarus calamus* L. (Aracaceae)	Bach/Herb	Rhizome	Rhizome extract is utilized to treat **indigestion and gastrointestinal disorder**
2	*Acacia farnesiana* L. (Mimosaceae)	Torua kadam/Tree	Bark	Bark extract is utilized to treat **malaria and primary dismanorrhya**
3	*Adhatoda vasica*. Roxb. (Acanthaceae)	Bogaa Baahok/Shrub	Leaf	Leaf extract is utilized to treat **cough and asthema**
4	*Aegle marmelos* L. (Rutaceae)	Bel /Tree	Leaf and Fruit	Boil leaf and fruit are used to cure **stomachache**.
5	*Aloe vera* Tourn ex. Linn. (Liliaceae)	Salkonwari/Herb	Leaf	Leaf paste applied externally on forehead in high **fever.**
6	*Alocasia indica* (L). G Don. (Araceae)	Man kosu/Herb	Rhizome	Boil rhizome paste is used to relief **abdominal pain**
7	*Allium sativum* L. (Asteraceae)	Rasun, Nohoru/Herb	Bulb	Bulb paste along with hot mustard oil applied externally to relief **body ache**
8	*Allium cepa* L. (Liliaceae)	Peaj/Herb	Bulb	Bulb juice is used to cure **asthma**
9	*Amaranthus spinosus* L. (Amaranthaceae)	Hatikhutara/Herb	Root	Juice prepared from root is used to treat **pregnancy treatment**
10	*Alternanthera sessilis* (L) R Br. Ex DC (Amaranthaceae)	Mati-kanduri/Herb	Stem and leaf	Boiled stem and leaves are consumed to cure **loose motion**
11	*Amaranthus spinosus* L. (Amaranthaceae)	Khutura/Herb	Root	Root is used to treat **abscess**
12	*Ananas comosus* (L.) Merr.	Anaras/Herb	Unripe fruit	Unripe fruit is directly taken to treat as **Abortifacient**

	(Bromeliaceae)			
13	*Andrographis paniculata* (Burm.f.) Nees. (Acanthaceae)	Sirata/Herb	Leaf	Leaf juice is very effective to relief from intestinal **worm**
14	*Aspargus racemosus* Wild. (Liliaceae)	Satmul/woody climber	Root	Root extract is suitable to treat **menopause** syndrome and certain **infectious diseases**
15	*Artocarpus heterophyllus* Lam. (Moraceae)	Kothal/Tree	Latex	Latex is used to treat **Skin disease**
16	*Areca catechu* Linn. (Arecaceae)	Tamul/Tree	Fruit	Fruit is directly taken to cure **dry cough**
17	*Averrhoea carambola* L. (Oxalidaceae)	Kordoi/Tree	Fruit	Fruit extract is utilized to treat **jaundice.**
18	*Azadirachta indica* A. Jesus. (Meliaceae)	Nim/Tree	Leaf and bark	Leaf is used for various skin related issues and bark extract is used to kill **worm**
19	*Bacopa monnieri* Pennel. (Scrophulariaceae)	Brahmi/Herb	Leaf	Fried leaf in ghee is used as **memory stimulant**
20	*Boerhavia diffusa* L.nom.cons. (Nyctaginaceae)	Pononua/Herb	Whole plant	Extract of plan is taken to relief from **jaundice and inflammation**
21	*Cajanus cajan* (L.) Huth. (Fabaceae)	Rahar dal/Shrub	Leaf	Leaf extract is used to cure **Jundice**
22	*Cassia alata* L. (Caesalpiniaceae)	Khor goss/Shrub	Leaf	Leaf mixed with garlic paste is suitable to treat in **allergy**
23	*Cassia tora* (L.) Roxb. (Caesalpiniaceae)	Medelua/Shrub	Seed and Leaf	Seed and leaf paste is used externally to treat **skin diseases**.
24	*Catharanthus roseus* (L.)G.Don. (Apocynaceae)	Nayantara/Herb	Leaf	Leaf extract consumed to relief from **Gastritis**
25	*Carica papaya* L. (Caricaceae)	Omita/Tree	Latex	Plant latex is externally applied on **burns and cut wounds**
26	*Centella asiatica* L. (Apiaceae)	Manimuni/Herb	Leaf	Leaf with garlic boil used in **stomachache.**
27	*Cinnamomum tamala* (Buch. Ham.) T. Nees & C.H.Eberm. (Lauraceae)	Tejpat/Shrub	Bark	Bark is useful to treat in loose motion
28	*Citrus lemon* (Christ.) SW. (Rutaceae)	Nemu/Tree	Fruit	Juice from fruit is consumed to treat **Jaundice and diarrhea**
29	*Cissus quadrangularis* L. (Vitaceae)	Harjora/Creeper	Stem	Stem paste applied externally to join fractured bone
30	*Cissumpelos parera* L. (Menispermaceae)	Tubukilota/Climber	Leaf	Leaf paste used in **fever**.
31	*Clitoria ternatea* Linn. (Fabaceae)	Aparajita/Creeper	Flower	The flower extract used to cure **antimicrobial and anti-diabetic activities**
32	*Clerodendrum colebrookianum* Walp. (Verbinaceae)	Nephaphu/Shrub	Leaf	Boil leaf along with garlic is a controller of high **blood pressure.**
33	*Costus speciosus* (J. Konig) C.Specht.	Jomlakhuti/Shrub	Rhizome	The rhizome paste is suitable to treat urinary tract infection,

	(Zingiberaceae)			**headache, stomachache and jaundice**
34	*Commenlina benghalensis* L. (Commelinaceae)	Kona himolu/Herb	Whole plant	Plant extrac is used to cure **sore feet and wounds**
35	*Curcuma longa* Linn. (Zingebaraceae)	Haladhi/Herb	Rhizome	Rhizome paste prepared is taken in **Coug**h and used to **relief pain.**
36	*Curcuma aromatica* Salisb. (Zingiberaceae)	Ban-haladhi/Herb	Rhizome	Rhizome is used in **menstrual pain.**
37	*Curcuma longa* L. (Zingiberaceae)	Haladhi/Herb	Rhizome	Rhizome extract applied externally on injured body part to **relief pain.**
38	*Cymbopogon flexuosus* (Nees ex Steud.) W. Watson. (Poaceae)	Lemon grass/Herb	Whole plant	Plant extract is taken orally to get rid of **headache, and rheumatism**.
39	*Cynodon dactylon* (L.) Pers. (Poaceae)	Dubari bon /Herb	Whole plant	Paste of plant is applied externally on injured organ to stop bleeding
40	*Cyperus rotundus* L. (Cyperaceae)	Keya bon/Herb	Tuber	Tuber paste is applied on injured places to **cure boils.**
41	*Desmodium caudatum* (Thunb.) DC. (Fabaceae)	Bor-biyoni habota/Herb	Whole plant	Decoction is used to treat **haemospermia.**
42	*Dillenia indica* L. (Dilleniaceae)	Outenga/Tree	Fruit	Fruit boiled with molasses used to treat **dysentery**.
43	*Drymaria cordata* L.(Wild). (Caryophyllaceae)	Lai-jabori/Herb	Whole plant	Paste of whole plant is applied on tongue in **fungal infection.**
44	*Eclipta alba* L. (Asteraceae)	Kenharaj/Herb	Leaf	Leaf extract used in **chicken pox.**
45	*Emblica officinalis* Gaertn. (Euphorbiaceae)	Aamlokhi/Tree	Fruit	Fresh fruit is used as liver tonic and dried fruit used against the treatment of **jaundice**
46	*Elletaria cardamomum* (L.) Maton. (Zingiberaceae)	Elachi/Herb	Seed	Seed powder used in **intestinal sore**
47	*Eupatorium odoratum* L. (Asteraceae)	Jarmani bon/Shrub	Leaf	Crushed leafs are applied in **Cuts and wounds**
48	*Euphorbia hirta* L. (Euphorbiaceae)	Gakhiroti bon/Herb	Entire plant	Plant is used to treat **gastrointestinal and respiratory diseases**
49	*Gmelina arborea* L. (Verbenaceae)	Gomari/Tree	Seed	Paste of seeds are spread affected area **to treat Itching**
50	*Hedyotis diffusa* Willd. (Rubiaceae)	Bon-jaluk/Herb	Whole plant	Decoction is used in **body ache**
51	*Heliotropium indicum* L. (Boraginaceae)	Biyoni habota/Herb	Leaf	Leaf extract applied externally to cure **wounds**.
52	*Hibiscus rosa-sinensis* L. (Malvaceae)	Jaba/Shrub	Leaf and flower	Leaf and flowers paste are used in **boils** Leaf and flower paste used to

				rupture **abscess and insect bite.**
53	*Hibiscus mutabilis* L. (Malvaceae)	Sthala-padma/Shrub	Leaf and flower	Leaf and flower paste applied externally to **cure burns and other skin problems**
54	*Houttuynia cordata* Thunb. (Saururaceae)	Mosondari/Herb	Leaf	Steamed leaf is consumed to cure **diarrhea and dysentery**
55	*Hydrocotyle javanica* Thunb. (Araliaceae)	Horu manimuni/Herb	Whole plant	Juice of the plant is given to kill **intestinal worms.** Decoction is given in **dysentery**
56	*Lawsonia inermis* L. (Lythraceae)	Jetuka/Shrub	Leaf	Leaves paste applied topically on head for **hair growth** and also applied to **cure paronychia.**
57	*Leucas aspera* (Wild.) (Lamiaceae)	Durun bon/Herb	Leaf	Boiled leaf taken to relief b**odyache**.
58	*Kalanchoe pinnata* (Lam.)Pers. (Crassulaceae)	Dupor tenga/Herb	Leaf	Leaf paste used externally to cure fever, **diarrhea, headache and jaundice**
59	*Mangifera indica* L. (Anacardiaceae)	Aam/Tree	Bark	Juice prepared from bark mixed with sugar is used to treat **bleeding piles**
60	*Mentha arvensis* L. (Lamiaceae)	Poduna/Herb	Leaf	Leaf as well as stem can be eaten raw which helps in **digestion**
61	*Michelia champaca* L. (Magnoliaceae)	Titachopa/Tree	Leaf and seed	Leaf and seed extract taken as appetizer and also in **stomach problem**
62	*Mimosa pudica* L. (Mimosaceae)	Nilagi bon/Herb	Stem	Stem extract are taken to cure **Bone fracture.** Root extract used **in piles** and to **kill worms**
63	*Mimosops elengii* L. (Saptotaceae)	Bakul/Tree	Bark	Bark extract mixed with water used to cure **loosening of teeth.**
64	*Moringa oleifera* Lamk. (Moringaceae)	Sajina/Tree	Bark	Bark juice mix with sugar is used to treat **Jaundice**
65	*Murraya koenigii* Spreng. (Rutaceae)	Narasingha/Shrub	Leaf	Boil leaf used in **stomachache and weakness.**
66	*Musa paradisiaca* L. (Musaceae)	Kolgos/Herb	Bark	Bark juice for **kidney problem** and dried fruit extract used to **kill tapworm.**
67	*Nerium indicum* Mill. (Apocynaceae)	Karabi/Tree	Leaf	Leaf used against **skin disease**
68	*Ocimum basilicum* L. (Lamiaceae)	Tulasi/Shrub	Leaf	Leaf juice mixed with honey is taken against **cough and fever.**
69	*Ocimum sanctum* L. (Lamiaceae)	Kola-tulasi/Shrub	Leaf	Leaf with salt used to cure cough
70	*Oroxylum indicum* Vent. (Bignoniaceae)	Bhatghila/Tree	Bark and root	Bark along with water used for s**tomachache** and root used for **TB.**
71	*Oxalis corniculata* L. (Oxalidaceae)	Tengeshitenga/Herb	Whole plant	Whole plant used as a**ppetizer**
72	*Oxalis corymbosa* DC.	Bor tengesi	Whole plant	Plant extract is used to treat

	(Oxalidaceae)	saak/Shrub		**diarrhea and wound healing**
73	*Paederia foetida* L. (Rubiaceae)	Bhadeli lota/Climber	Leaf	Decoction of leaf is used to treat **diarrhea, stomach ache, dysentery, piles and bowel diseases**
74	*Piper betle* L. (Piperaceae)	Paan/Climber	Leaf	Crashed leaf applied externally to cure wounds
75	*Piper nigrum* L. (Piperaceae)	Jaluk/Climber	Seed	Seed used for viral coryza Seed with honey used **to treat cough**
76	*Phyllanthus niruri* L. (Euphorbiaceae)	Bhui aamlokhi/Herb	Whole plant	Entire plant juice use to cure j**aundice**
77	*Phyllanthusa emblica* L. (Phyllanthaceae)	Aamlokhi/Tree	Fruit	Used the fruit for **healthy hair and skin**
78	*Psidium guava* L. (Myrtaceae)	Modhuri/Tree	Leaf	Tender leaf extract used to treat **dysentery and diarrhea**.
79	*Pterospermum acerifolium* (L.) Wild. (Malvaceae)	Kanak champa/Tree	Bark	Bark extract is taken to cure **inflammation, pain and ulcer**
80	*Portuleca oleracea* L. (Portulaceae)	Malbhog khutara/Herb	Leaf and stem	Leaf and stem are used to treat **dysentery and diarrhoea**
81	*Raphanus sativus* L. (Brassicaceae)	Mula/Herb	Root	Root used in **urinary tract infection.**
82	*Ricinus communis* L. (Euphorbiaceae)	Nuni/Tree	Seed	Seed oil used externally against **rheumatism, leaves are used in bodyache**
83	*Saccharum officinarum* L. (Poaceae)	Kuhiar/Herb	Stem	Stem juice used for **jaundice**
84	*Solanum nigrum* L. (Solanaceae)	Soru pokmou/Herb	Whole plant	Whole part row or boiled used in **liver problem and indigestion**
85	*Solanum indicum* L. (Solanaceae)	Tita bhekuri/Shrub	Fruit	Roasted fruit is used as **blood purifier**
86	*Spilanthes acmella* (L.) (Asteraceae)	Maisung/Herb	Fruit	Fruit used to treat **inflammation of the throat**.
87	*Spondias pinnata* (Lf.) Kurz). (Anacardiaceae)	Amora /Tree	Fruit	Fruit used to cure **chronic dysentery.**
88	*Terminalia arjuna* (Roxb.)Wight & Arn. (Combretaceae)	Arjun/Tree	Bark	Bark decoction is used in **hypertension**
89	*Terminalia belerica* (Gaert) Roxb. (Combretaceae)	Bhumura/Tree	Fruit	Fruit is taken directly to treat **cough and Diarrhoea**
90	*Tamarindus indica* L. (Caesalpiniaceae)	Teteli/Tree	Fruit	Ripe fruit are directly taken for **headache, high pressure**
91	*Terminalia chebula* Retz. (Combretaceae)	Hilikha/Tree	Fruit	Fruit eaten raw works as an appetizer and cure **small pox**.
92	*Vitex negundo* L. (Verbenaceae)	Posotia/Shrub	Leaf	Cooked leaf with garlic and mustard oil helps to relief **rheumatic pain**
93	*Zinziber officinale* Roxc. (Zingiberaceae)	Ada/Herb	Rhizome	Juice prepared from rhizome is taken to treat **diarrhoea and cough**

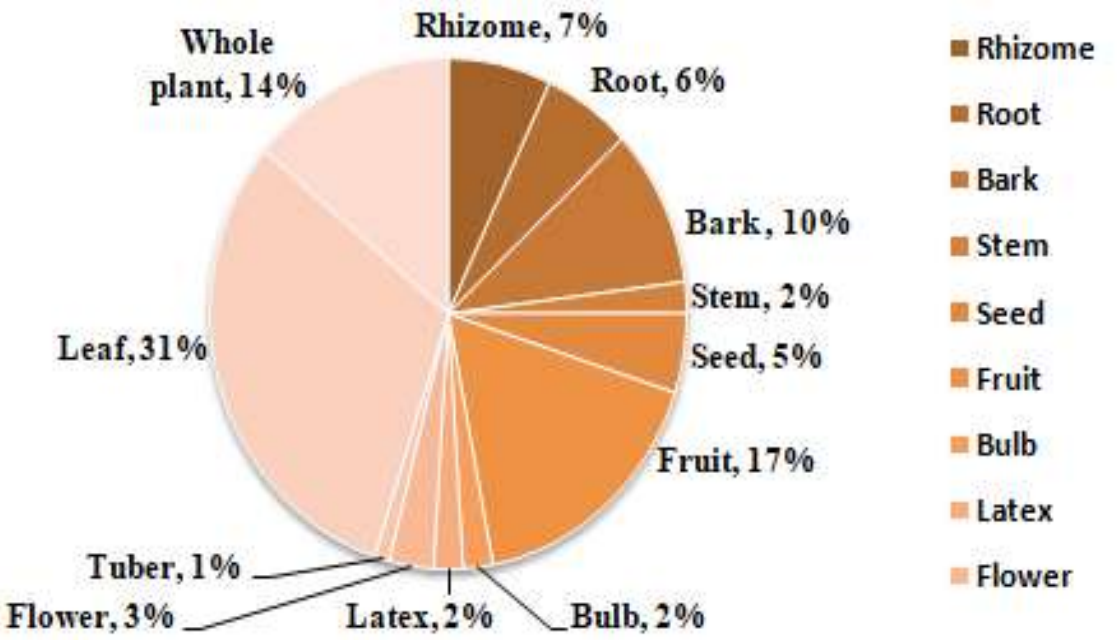

Fig 1:- Statistics of plant parts documented in the study.

Fig 2:- Diversity of growth habits of medicinal plant documented in the study.

Conclusion:-

Since ethno-medicine is believed to be going extinct soon, it is important to conserve this ancient knowledge. Large-scale resource extraction and human dependence on chemical resources in the pace of human development pave the way for future resource insecurity and, eventually, human fatalities. Future generations will benefit from ethnomedicine since it is a method that uses natural resources ethically, which is crucial for life on Earth.

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