# Documentation of ethnomedicinal knowledge of native flora utilized by Bishnupriya Manipuri people of Tripura, India

Chayan Dhar, Mayuri Bhagawati, Barnita Debnath, Badal Kumar Datta

**Correspondence**

**Chayan Dhar, Mayuri Bhagawati*, Barnita Debnath, Badal Kumar Datta**

Plant Taxonomy and Biodiversity Laboratory, Department of Botany, Tripura University (A Central University).

*Corresponding Author: mayuribot13@gmail.com

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## Research

## Abstract

*Background*: Traditional medicinal knowledge remains integral to healthcare among indigenous communities, yet it is increasingly threatened by modernization and the decline of oral traditions. The Bishnupriya Manipuri community in Tripura, India, has a longstanding tradition of using native plants to treat diverse ailments. This study documents and analyses their ethnomedicinal practices and evaluates the therapeutic potential of locally used species across four districts—Sipahijala, Dhalai, Unakoti, and North Tripura.

*Methods*: From April 2024 to January 2025, ethnobotanical surveys were conducted in 13 villages and one municipal area. Structured interviews with 150 participants, including elderly residents and traditional healers (Maipas), recorded plant species, families, local names, plant parts used, preparation methods, and administration routes. Data were analysed using descriptive statistics and quantitative indices—Use Value (UV), Family Use Value (FUV), Relative Frequency of Citation (RFC), Informant Consensus Factor (ICF), and Fidelity Level (FL).

*Results*: A total of 82 medicinal species from 42 families were identified, with Lamiaceae**,** Asteraceae**, and** Fabaceae being dominant. Herbs were the most common growth form (44%), leaves the most used plant part (43.75%), and oral administration the preferred route (61%). *Polygonum odoratum* had the highest RFC (0.826) and FL (79.33%). Respiratory and endocrine disorders exhibited the highest ICF values, indicating strong consensus among informants.

*Conclusions*: The findings highlight the Bishnupriya Manipuri community's rich ethnomedicinal heritage and identify culturally important species with promising pharmacological potential. This work supports both the preservation of indigenous knowledge and the promotion of biodiversity-based, sustainable healthcare solutions.

*Keywords*: Bishnupriya manipuri, ethnomedicine, medicinal plants, traditional knowledge, Tripura

## Background

Plant resources have been instrumental in the evolution, advancement, and sustained survival of humankind. They constitute an integral component of human existence, providing essential resources such as food, fiber, fodder, construction materials, and therapeutic agents. Rich in a diverse spectrum of phytochemicals comprising both primary and secondary metabolites, plants exhibit significant pharmacological potential. These bioactive compounds underpin many of their medicinal

properties, positioning them as pivotal candidates in the discovery and development of novel pharmaceutical agents (Basson *et al*. 2023). According to estimates by the World Health Organization (WHO), approximately 80% of the global population relies on traditional medicinal remedies for the treatment of various ailments. As one of the oldest and least explored forms of healthcare, it is essential to document the plant species used and evaluate their phytochemical richness to determine their therapeutic potential (Bhagawati *et al*. 2024, Singh 2024, Muthukrishnan & Ramachandran 2025).

Tripura, a small hilly state in the northeastern region of India, spans a geographical area of 10,491 square kilometres. Renowned for its rich traditions, diverse cultures, customs, and ethnic communities, the state is also endowed with remarkable biodiversity. It is geographically situated between latitudes 22°56′ to 24°32′ N and longitudes 91°10′ to 91°21′ E. This hilly land-locked state shares 84% of its border with Bangladesh and the remaining 16% with the Indian states of Assam and Mizoram. The state is divided into 8 districts, namely North, South, West, Gomati, Dhalai, Khowai, Sipahijala and Unakoti Tripura. Notably, the state lies within the Indo-Burma Biodiversity Hotspot, one of the 34 recognized biodiversity hotspots worldwide (Jha & Jha 2023, Dhar *et al*. 2025). According to Indian State Forest Report 2023, 60.03% of the total geographical area, i.e., 6,295km$^2$ out of 10,486 km$^2$ of Tripura is covered by forest. Debbarma et al., (2017) put forward that the state has 581 species of herbs, 379 trees, 320 shrubs, 165 climbers, 16 climbing shrubs, 35 ferns, and 45 epiphytes.

The four districts- North Tripura, Dhalai, Unakoti, and Sipahijala were selected and guided by the heavy concentration of the people of the Bishnupriya Manipuri community, assuring the documentation of genuine and culturally relevant ethnomedicinal knowledge. This perspective coincides with the worldwide ethnobotanical practices, where specifically aimed sampling in culturally rich, community-specific areas gives higher accuracy in traditional knowledge documentation (Heinrich et al., 2009; Kunwar et al., 2010). Ethnic minorities such as the Bishnupriya Manipuri people are considered at risk by UNESCO and are often marginalized in scientific literature, making region specific studies critical for conserving disembodied cultural heritage. Over 80% of the world's population depends upon traditional medicine for basic health care (WHO 2013), emphasizing the necessity to capture and preserve indigenous practices before they are lost due to renovation & cultural erosion.

Bishnupriyas or Bishnupriya Manipuris are Indo-Aryan language-speaking inhabitants of the Indian states of Assam, Manipur, Meghalaya, and Tripura, as well as some parts of countries like Bangladesh and Myanmar. These ethnic minorities are considered vulnerable by UNESCO, with fewer than one lakh speakers worldwide (Sinha *et al.* 2024). According to the Census of India 2011, the state of Tripura has only 22,112 Bishnupriya Manipuris, the majority of whom reside in rural areas. In Tripura, the Bishnupriya Manipuri population is primarily concentrated in the districts of Sipahijala, Dhalai, Unakoti, and North Tripura. As a predominantly rural community, they are not only known for their rich cultural practices but also for their extensive knowledge of utilizing local resources to maintain a sustainable and satisfactory lifestyle. The rich ethnomedicinal understanding and utilization of this ethnic group was recently reported by Sinha *et al*. (2023). The authors highlighted the composition of a traditional remedy known as "Khulleigulli," prepared by members of the Bishnupriya Manipuri community to treat ailments such as fever, cough, and cold-related symptoms. In addition to this specific formulation, numerous other traditional medicinal preparations are routinely used in daily life by both the general populace and Maipas, the traditional healers of the community. The local Meitei community of the Bishnupur district of Manipur has been using 32 plant species to treat women's specific ailments. They use *Azadiracta indica* A. Jus for abortion, leaves of *Cinnamomum tamala* (Buch. -Ham.) T. Nees and Nees to cure menstrual overflow and *Vitex negundo* L. for post-partum recovery, etc (Devi *et al*. 2020). Another report documented 37 medicinal plant species that have long been used by ethnic communities of Tripura in traditional healing practices. The widely utilized species include *Centella asiatica*, *Curcuma longa*, *Sauropus androgynus*, *Tabernaemontana divaricata*, and *Andrographis paniculata,* which are used to treat diarrhoea and dysentery, skin problems, hypertension, toothache and malaria, respectively (Reang *et al*. 2022). Several similar studies have been conducted in adjacent regions to evaluate and document the traditional medicinal knowledge of the Manipuri community regarding the use of native flora. One such ethnomedicinal study by Rana *et al.* (2010), carried out in the villages of Badaler Gaon and Jhaper Gaon in the Maulvibazar district of Bangladesh, documented 32 ethnomedicinally significant plant species, representing 29 genera across 26 families. These plants were used by the local Manipuri population to treat a total of 37 different ailments. Similarly, Hasan *et al*. (2014) reported the documentation of 36 ethnomedicinally important plant species used by Manipuri people residing in the Kamalganj Upazila of the same district of Bangladesh.

The objective of this study is to survey and acquire more information on various traditional medicinal plants utilized by the aged individuals and traditional healers (Maipa) of the Bishnupriya Manipuri community in Tripura.

## Materials and Methods

### Study area

Tripura, the third smallest state in India located in 22°56' to 24°32' latitude and 91°10' to 91°20' longitude with a total geographic area of 10,491.69 square kilometres. This is a landlocked state that shares 84% of the border, i.e. 856km, with Bangladesh and the remaining 16% i.e. 162km, with the Indian states of Assam and Mizoram. About 74.98% of Tripura is covered with anticlinal hills that run from north to south and have an altitude varying from 30-1000 m with annual rainfall ranging from 1922 mm to 2855 mm. It experiences a high humidity level varying from 50-74% during summer and 85% during monsoon. The state experiences a warm and humid tropical climate with 5 distinct seasons that enter and exit in a strong rhythm. The maximum and the minimum average temperatures recorded were 35.6 °C and 10.5°C respectively. The state is divided into 8 districts, namely North, South, West, Gomati, Dhalai, Khowai, Sipahijala and Unakoti Tripura. Out of these, the current study was conducted in the 4 districts of Tripura, namely Sipahijala, Dhalai, Unakoti and North Tripura, covering 13 villages and 1 municipal area having a significant population of Bishnupriya Manipuris. In Unakothi Tripura district, Chirakuthi, Goldharpur, Isabpur, Tilakpur, Jarailtali, Kirtantali, the area of Kailashahar sub-division and Nidevi, Kanchanbari area of Kumarghat subdivision were surveyed. In the North Tripura district, Deocherra village of Panisagar sub-division and Mandapara area of Dharmanagar Municipal council, Dharmanagar subdivision were surveyed. Rangapania and Gopinagar villages under Bishalgarh sub-division of Sipahijala district, while in Dhalai district, the Halali and Baralutma villages under Kamalpur subdivision were included.

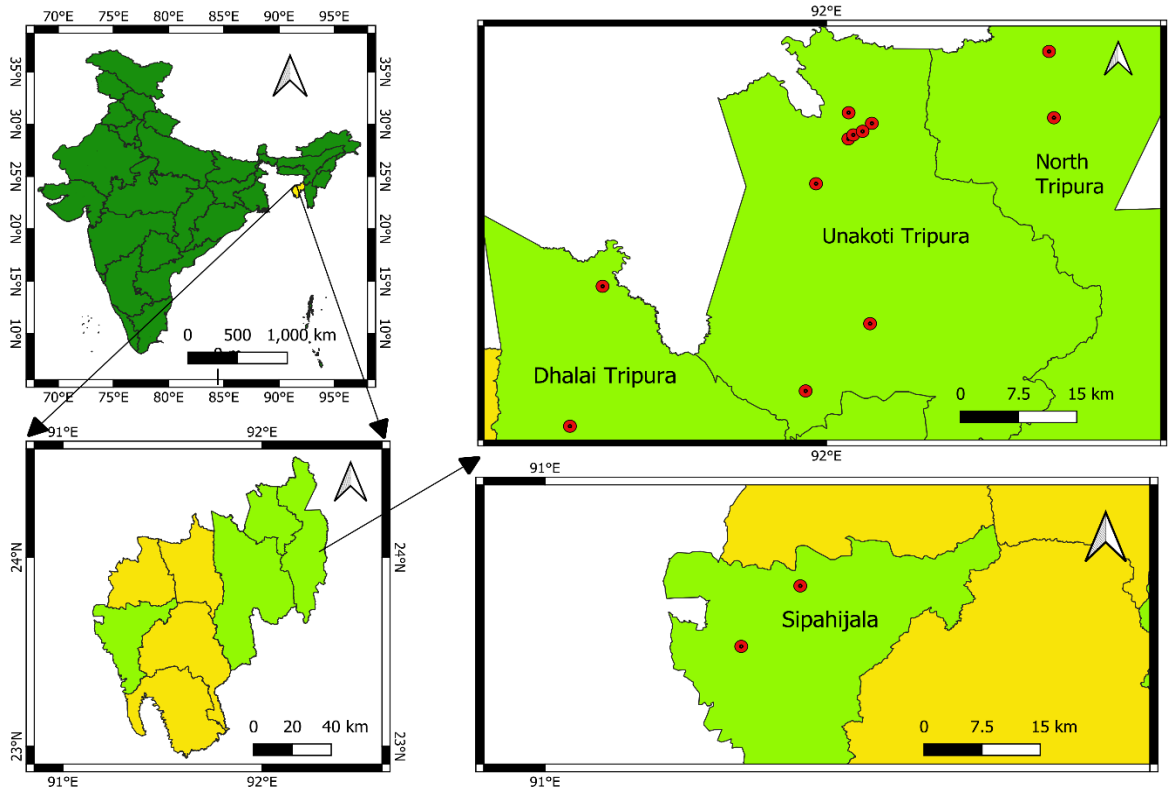


Figure 1. Location of the study areas in Tripura, India, showing the surveyed districts.

### Demographic scenario of the study sites

Tripura is home to 19 tribal communities like Bhil, Bhutia, Chaimal, Chakma, Garo, Halam, Jamatia, Khasia, Kuki, Lepcha, Lushai, Mog, Munda, Noatia, Orang, Reang, Santhal, Tripuri, Uchai and many other non-tribal communities such as Bengali, Meitei, Bishnupriya Manipuri, etc. Our study primarily focuses on the Bishnupriya Manipuri community, an Indo-Aryan non-tribal ethnic group residing in different districts of Tripura. A total of 200 people from 14 areas were invited to participate in this ethnomedicinal survey, among whom 150 respondents agreed voluntarily to participate and share their traditional knowledge of native medicinally important flora for treating several diseases. The highest number of informants belongs to the age group of 61-70. In terms of educational qualification, most respondents referred to themselves as being educated up to primary school. The majority of active respondents were female (58.67%), highlighting the pivotal role women play in preserving traditional medicinal knowledge within the Bishnupriya Manipuri community. As men are often away from home

due to work-related travel, women take on the responsibility of managing the household. Consequently, they are more likely to handle medical emergencies, leading to their greater familiarity with ethnomedicinal practices used for primary treatment. A total of 91.33% of the respondents were from rural areas, and they typically obtain medicinal plants either from their home gardens or from natural habitats- particularly roadsides and cultivated fields where these herbs commonly grow as weeds alongside crops. Additionally, 84.67% of the respondents reported a monthly income of less than ₹10,000, highlighting the importance of affordable primary healthcare in their daily lives. The comprehensive demographic profile of the actively responding respondents is presented in Table 1.

Table 1. Demographic profile of the respondents

| Indicators | Description | Nos | Percentage (%) |
|---|---|---|---|
| **Age** | 20-30 | 12 | 8 |
| | 31-40 | 24 | 16 |
| | 41-50 | 33 | 22 |
| | 51-60 | 35 | 23.33 |
| | 61-70 | 38 | 25.33 |
| | 71-80 | 5 | 3.33 |
| | 81-90 | 1 | 0.67 |
| | 91-100 | 1 | 0.67 |
| | 100+ | 1 | 0.67 |
| **Education** | Never attended school | 17 | 11.33 |
| | Primary | 55 | 36.66 |
| | Secondary | 38 | 25.33 |
| | Senior secondary | 25 | 16.66 |
| | Degree and above | 15 | 10 |
| **Gender** | Male | 62 | 41.33 |
| | Female | 88 | 58.67 |
| **Living type** | Rural area | 137 | 91.33 |
| | Urban area | 13 | 8.67 |
| **Work Profile/Occupation** | Traditional healer (Maipa) | 2 | 1.33 |
| | Housewife | 80 | 53.33 |
| | Businessperson/Entrepreneur | 13 | 8.67 |
| | Government employee | 10 | 6.67 |
| | Retired govt. employee | 1 | 0.67 |
| | Farmer | 44 | 29.33 |
| **Respondents' income** | <5000/month | 82 | 54.67 |
| | 5-10,000/month | 45 | 30.00 |
| | 10-50,000/month | 21 | 14.00 |
| | >50,000/month | 2 | 1.33 |
| **Source of Medicinal Plants** | Home garden | 41 | 27.33 |
| | Natural Habitat (Road side, Paddy field) | 28 | 18.67 |
| | Both home garden & Natural habitat | 81 | 54.00 |

**Ethnomedicinal survey and data collection**

The elderly people, traditional healers (Maipa) and other individuals with significant ethnomedicinal comprehension were interviewed in all 13 villages and 1 municipal area to gather information about the floristic resources utilized by them for healing several types of health issues by preparing traditional medicine. The interview was conducted in the Bishnupriya Manipuri language within the hypothetical period of 10 months from April, 2024-January, 2025. Semi-structured questionnaires were used to get the data regarding the plants that they use, common name, specific parts used, preparation technique, mode of use, doses, and application. Group discussions and in-person interviews were also conducted with the elderly members and Maipas of the Bishnupriya Manipuri community to confirm or cross-check the information provided by

individual respondents. The interview was conducted in Bishnupriya Manipuri, the local language for more convenience, and the respondents were requested to show the plants in their natural habitat. The Snowball method of sampling is employed to acquire responses from 150 respondents. Only individuals who expressed interest were included in the study; participation was entirely voluntary, and no one was compelled to take part. Oral consent was obtained from all respondents, and those who declined were not approached further. Even the smallest details shared by the participants were carefully recorded and compiled to form the final database. Specimens of all plants were then collected, and their taxonomical identification was performed in the Herbarium, Plant Taxonomy and Biodiversity laboratory, Department of Botany, Tripura University. Each ethnobotanically significant collection was identified using taxonomic literature, *Floras of Tripura State* (Deb, 1983) and the accepted scientific names, families were cross-checked on the online website named Plants of the World Online (www.powo.science.kew.org). Herbarium specimen of each collection was submitted to the Herbarium, Plant Taxonomy and Biodiversity laboratory, Department of Botany, Tripura University, for future reference. At last, a final list of medicinal plants was prepared that includes their botanical name, common name, family, habit and other details of ethnomedicinal importance.


Figure 2. Interview schedule with a herbalist specializing in traditional treatments

**Quantitative ethnomedicinal data analysis**

Data analysis of ethnomedicinal information has been calculated for the listed (82) plants. The values of Ui, UV, FC and RFC have been represented in Table 3. Quantitative data analysis of ethnomedicinal studies has rarely been performed earlier in this region. In this particular document, we have considered several quantitative aspects that highlight the uniqueness of the study concerning the region. Incorporation of these quantitative analytical techniques makes the study different from other previous studies conducted in the state of Tripura.

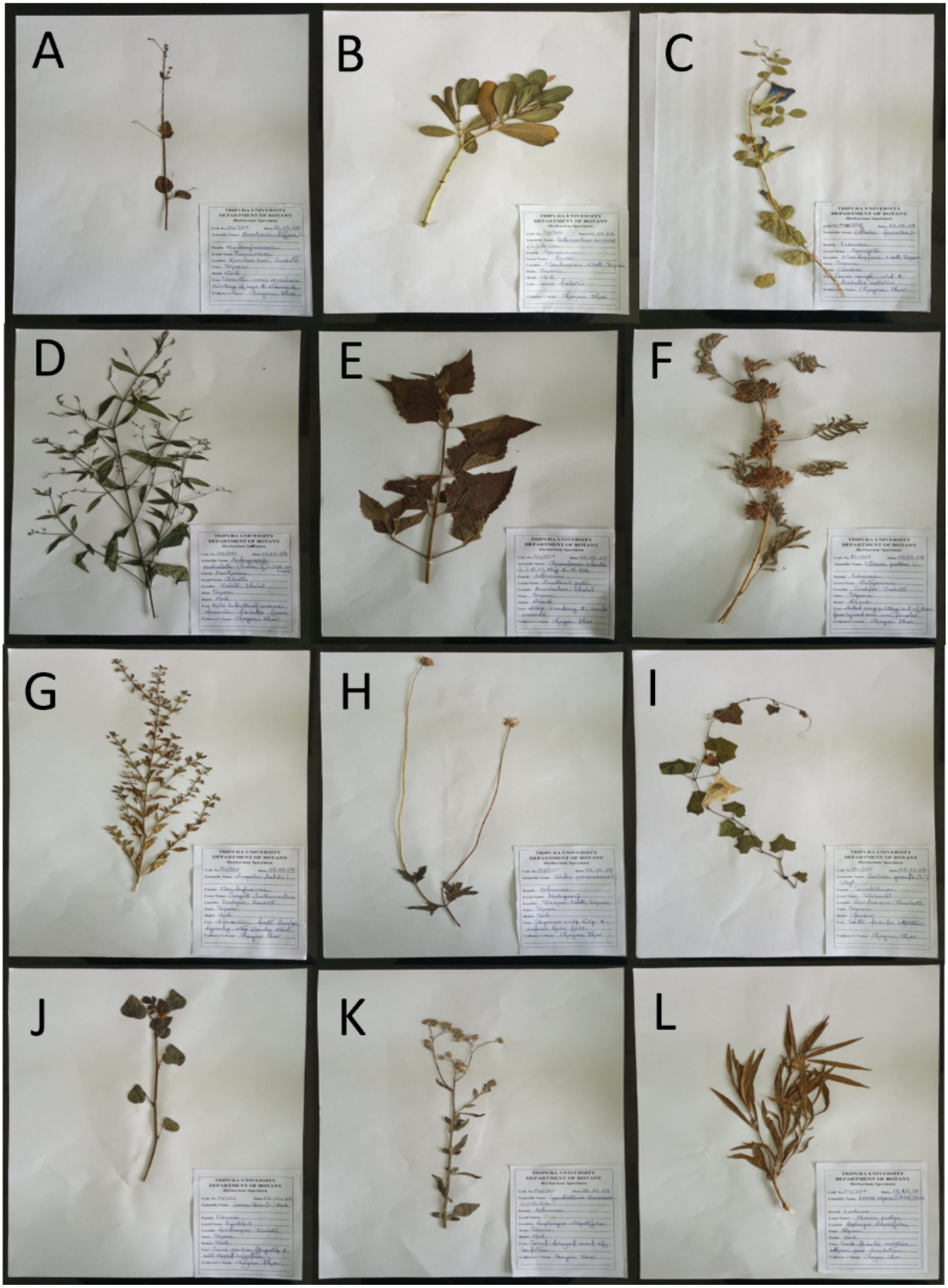


Figure 3. Representative herbarium sheets of medicinal plant species documented during the study: (A)*Boerhavia diffusa*, (B)*Catharanthus roseus*, (C)*Clitoria ternatea*, (D)*Andrographis paniculata,* (E)*Chromolaena odorata,* (F)*Mimosa pudica,* (G)*Scoparia dulcis,* (H)*Tridax procumbens,* (I)*Coccinia grandis,* (J)*Senna tora,* (K)*Cyanthillium cinereum, &* (L)*Leucas aspera.*

**Use Value (UV)**

The relative importance of the locally known plants is demonstrated by Use Value. Which is given by,

$$UV = \sum \frac{Ui}{N}$$

Where 'Ui' is defined as the number of uses of a particular species, mentioned by each informant and 'N' is defined as the total number of respondents.

**Relative frequency of Citation (RFC)**

RFC determines the local importance of the species. This defines how frequently the species is mentioned by the respondents. RFC is calculated as

$$RFC = \frac{FC}{N}$$

Where 'FC' defines the total number of respondents who mentioned the use of each particular species and 'N' is the total number of respondents.

**Family Use Value (FUV)**

The significance of reported plant families is determined by Family Use Value. It is calculated as,

$$FUV = \frac{UVs}{Ns}$$

Where, 'UVs' is defined as the Use Value of species that belongs to the same family and 'Ns' defines the total number of species reported from the same family.

**Fidelity Level (FL)**

Fidelity level (FL) signifies the most important plant species of the study area that is effective for the treatment a particular category of disease. FL% is calculated as,

$$FL\% = \left(\frac{NP}{N}\right) \times 100$$

'Np' defines the number of respondents using a particular species to treat an ailment and 'N' defines the total number of respondents involved in the interview.

**Informant Consensus Factor (ICF)**

ICF determines the homogeneity of the information given by informants regarding the use of plants for a particular interest or category.

It is calculated as,

$$ICF = \frac{(Nur - Nt)}{(Nur - 1)}$$

Where 'Nur' defines the number of use reports for the particular disease or ailment and 'Nt' defines the number of taxa used for the treatment of this particular disease category by all the informants.

The value of ICF ranges from zero to one, i.e., (0≤ICF≤1). A Value of ICF close to 1 indicates a higher degree of homogeneity of the information, which shows agreement among informants regarding the use of the given species for the treatment of a particular disease. Value of ICF closer to 0 indicates a high degree of disagreement among the informants regarding the use of the species for treating a particular category of disease (Reang et. al., 2022).

Table 2. List of plants utilized to cure different ailments by the people of the Bishnupriya Manipuri community of Tripura

| Species name | Family & Habit | Local name | Plant part used | Preparation technique | Route of use | Application |
|---|---|---|---|---|---|---|
| ***Adenanthera pavonina* L.** **PN/217, 22-11-2024; Goldharpur** | Fabaceae, Tree | Rokto chondon | Seeds, wood | Paste is prepared from seeds, powder/ paste is prepared from wood | Topical | Relieve headache, skin allergies and facilitate skin health. |
| ***Aegle marmelos* (L.) Correa** **PN/182, 09-05-2024; Nidevi** | Rutaceae, Tree | Bel | Leaves | Leaf juice of *Ocimum sanctum* L., *Justicia adhatoda* L., and Bel leaf were mixed with ginger and honey | Oral | Cough and cold |
| | | | Young fruits | Young fruits are cut and dried. When required dip them overnight in water and finally the water turns red. | Oral | Treats Diarrhea, Dysentery and bleeding with stool. |
| ***Ananas comosus* (L.) Merr.** **PN/186, 13-06-2024; Kanchanbari** | Bromeliaceae, Herb | Kehem | Whitish soft leaf base of mature leaf. | Leaf extract mixed with common salt and heated. | Oral and Ear drop | Kills intestinal worms and treats ear pain |
| ***Andrographis paniculata* (Burm.f.) Wall. ex Nees** **PN/192, 29-07-2024; Halali** | Acanthaceae, Herb | Chirata | Dry stem | Dried stems were dipped in a glass of water overnight and consumed early morning on an empty stomach. | Oral | Kills intestinal worms, stomachic, diabetes, and fever. |
| ***Allium hookeri* Thwaites** **PN/220, 22-11-2024; Goldharpur** | Amaryllidaceae, Herb | Nennam | Leaves | Boiled leaves/ water was extracted | Oral | Frequent urination and a burning sensation while urinating during the summer. |
| ***Allium sativum* L.** **PN/193, 29-07-2024; Halali** | Amaryllidaceae, Herb | Rohon | Bulbs | Raw Turmeric paste + oil heated with garlic + common salt | Fomentation /topical | Relieves Fracture related other pains and carminative. |
| | | | | 1-2 cloves were consumed empty stomach every day | Oral | |

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| ***Aloe barbadensis* Mill**<br>**PN/203, 27-09-2024; Isabpur.** | Asphodelaceae, Herb | Ghritakumari | Leaves | Aloevera gel is mixed with milk | Oral | Reduce physical weakness and increase strength |
| | | | | Gel extracted from leaves | Topical | Removes scars and induces a glow in the face |
| ***Alternanthera brasiliana var. villosa* (Moq.) Kuntze**<br>**PN/200, 05-08-2024; Baralutma** | Amaranthaceae, Herb | Sahepi pata | Leaves | Leaf pastes prepared | Topical | Use as a medication for tetanus |
| ***Artocarpus heterophyllus* Lam.**<br>**PN/211, 06-10-2024; Tilakpur** | Moraceae, Tree | Khatol | Leaves | Leaves were given to cows along with fodder | Oral | Treats diarrhea in cows. |
| ***Azadirachta indica* A. Juss.**<br>**PN/229, 23-11-2024; Goldharpur** | Meliaceae, Tree | Neem | Leaves, bark | Leaves paste or boil neem leaves in water or raw leaves were eaten early morning. Sometimes extracts/pastes were also prepared from bark and mature seeds. Even leaves were sometimes included in their diet. | Topical, Oral | Chicken pox, good for prickly heat rashes, skin allergies, and on consumption kills intestinal worms |
| ***Blumea sinuata* (Lour.) Merr.**<br>**PN/214, 24-10-2024; Kirtantali** | Asteraceae, Shrub | Siyalmuturi | Leaves | Gently heat some leaves by putting some common salt & turmeric in a pan. | Fomentation /Topical | Relieves fracture pain and other types of pain in different body parts. |
| ***Boerhavia diffusa* L.**<br>**PN/187, 13-06-2024; Kanchanbari** | Nyctaginaceae, Herb | Purnanava | Leaves | Decoction prepared or taken as a diet in different recipes | Oral | Diuretic, decreases excessive swelling of legs & stomach especially in aged people |
| ***Calliandra haematocephala* Hassk.**<br>**PN/176, 28-04-2024; Chirakuthi** | Fabaceae, Tree | Sirisakusum | Leaves and tender shoots | A decoction prepared from leaves | Oral | Treats Hypertension |
| ***Carica papaya* L.**<br>**PN/252, 16-12-2024; Gopinagar** | Caricaceae, Tree | Khobol | Young fruits | Young fruits are eaten raw | Oral | Dog bite |
| ***Catharanthus roseus* (L.) G. Don**<br>**PN/188, 03-07-2024; Mandappara** | Apocynaceae, Herb | Kontol | Leaves | 1 spoon of leaf juice is consumed empty stomach daily. | Oral | Cures diabetes |

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| ***Centella asiatica* (L.) Urb.**<br>**PN/189, 03-07-2024; Mandappara** | Apiaceae, Herb | Pirihou | Leaves | A decoction made by mixing *C. asiatica* leaves juice mixed with a little milk and jaggery. | Oral | Carminative, Laxative, stomachic. |
| | | | | 1-2 drops of juice of fresh leaves | Eye drop | Cleans dirt or dust accumulated in the eyes. |
| ***Chromolaena odorata***<br>**(L.) R.M. King & H. Rob**<br>**PN/199, 05-08-2024; Baralutma** | Asteraceae, Shrub | Sankhuri pata | Shoots | Paste of mature leaves | Topical | Stop bleeding and heals wounds |
| ***Chrysanthemum spp.***<br>**PN/178, 28-04-2024; Chirakuthi** | Asteraceae, Shrub | Khanaka langtharei | Shoots | Given to the patient to be eaten raw | Oral | Cure the delayed onset of lactation |
| ***Clerodendrum trichotomum***<br>**Thunb.**<br>**PN/213, 06-10-2024; Tilakpur** | Lamiaceae, Shrub | Gopati ful | Young buds | 5-7 young buds were pasted and juice extracted | Oral | Fever, Typhoid |
| ***Clitoria ternatea* L.**<br>**PN/190, 03-07-2024; Mandappara** | Fabaceae, Climber | Aparajita | Flowers | Juice prepared from raw or boiled flower petals | Oral | Cough, cold and cures diabetes milletus. |
| ***Coccinia grandis* (L.) Voigt**<br>**PN/234, 23-11-2024; Goldharpur** | Cucurbitaceae, Climber | Telakuchi | Leaves and shoots | Leaf juice prepared from fresh and mature leaves | Oral | Treats diabetes mellitus |
| ***Colocasia esculenta* (L.) Schott**<br>**PN/215, 24-10-2024; Kirtantali** | Araceae, Herb | Kochu | Petiole | The petiole is burned and wrapped in a clean muslin cloth. | Wrapped on penetrating injury due to thorns (Topical) | Decreased swelling, stiffness due to a thorn penetrating injury and aided easy pulling out of the thorn from the injured area |
| ***Corchorus capsularis* L.**<br>**PN/230, 23-11-2024; Goldharpur** | Malvaceae, Shrub | Kuki tita/Tita pata | Dried Leaves | Taken as a regular diet by preparing different recipes | Oral | Treats insomnia, increases appetite. |
| ***Costus pictus***<br>**D.Don**<br>**PN/201, 27-09-2024; Isabpur** | Costaceae, Shrub | Kempajol | Lower part of the stem | Burn the stem and paste it to extract fluid from it | 2-3 drops in the ears | Ear pain |
| ***Curcuma longa* L.**<br>**PN/254, 22-12-2024; Jarailtali** | Zingiberaceae, Herb | Andi | Rhizome | Rhizome paste is prepared | Topical | Skin allergies |

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| ***Cuscuta spp.*** **PN/202, 27-09-2024; Isabpur** | Convolvulaceae, Climber | Suwarnalot/ suinnolot | Entire plant | A paste is prepared | Topical | Treats different skin allergies |
| ***Cyanthillium cinereum*** **(L.) H. Rob. PN/250, 16-12-2024; Gopinagar** | Asteraceae, Herb | Not mentioned by respondents | Entire plant | A decoction is prepared | Oral | Cure the delayed onset of lactation |
| ***Cynodon dactylon*** **(L.) Pers. PN/251, 16-12-2024; Gopinagar** | Poaceae, Herb | Durba | Entire plant | Paste is prepared | Topical | Stop bleeding from cuts and wounds healing |
| ***Cyperus rotundus*** **L. PN/255, 22-12-2024; Jarailtali** | Cyperaceae, Herb | Mana ghas | Tubers, roots | Juice is prepared by pasting its roots and tubers | Oral | Treats Leukorrhea |
| | | | | Tubers are pasted with a little salt | Topical | Relief from toothache |
| ***Dracaena trifasciata*** **(Prain) Mabb. PN/180, 09-05-2024; Nidevi** | Asparagaceae, Herb | Horopor Ju | Leaves | Leaves were half burned or gently heated and a juice was prepared | Ear drop (1-2 drops) | Ear pain |
| ***Eclipta alba*** **(L.) Hassk. PN/244, 22-12-2024; Jarailtali** | Asteraceae, Herb | Kehuriya | Tender shoots | A decoction or boiled shoots was consumed or consumed raw | Oral | Increase hemoglobin levels, treat anemia, blood purification, and jaundice |
| ***Eryngium foetidum*** **L. PN/221, 22-11-2024; Goldharpur** | Apiaceae, Herb | Owar fakitom | Leaves | Leaves were eaten raw in different recipes or sometimes a decoction was prepared | Oral | Stomachic, Carminative |
| ***Eupatorium birmanicum*** **DC. PN/249, 16-12-2024; Gopinagar** | Asteraceae, Shrub | Langtharei | Leaves | Juice prepared from fresh leaves | Oral | Stomachic, relieves burning in the stomach. |
| ***Euphorbia neriifolia*** **L. PN/256, 08-01-2025; Goldharpur** | Euphorbiaceae, Shrub | Gatur pata | Leaves | A decoction is prepared by pasting gently heated leaves + honey + ginger juice. | Oral | Expectorant & relieves Cold, Typhoid |
| ***Ficus hispida*** **L. PN/197, 05-08-2024; Baralutma** | Moraceae, Tree | Dumuri | Fruits | Fruits were eaten raw | Oral | Treats diarrhea, dysentery |
| ***Ficus sagittata*** **Vahl PN/230, 22-11-2024; Goldharpur** | Moraceae, Climber | Not mentioned | Leaves | Paste is made | Topical/ fomentation | Treatment for bone fractures in cows |

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|---|---|---|---|---|---|---|
| ***Hibiscus cannabinus* L.**<br>**PN/216, 23-11-2024; Goldharpur** | Malvaceae, Shrub | Chohar pata | Leaves | Leaves were taken as daily diet | Oral | Relieves heat stress and aids cooling of the body. |
| ***Hibiscus rosa-sinensis* L.**<br>**PN/248, 16-12-2024; Gopinagar** | Malvaceae, Shrub | Joba puspa | Leaves | Juice of Leaves mixed with rice- washed water. | Topical | Good for hair and scalp health. Makes hair silky |
| ***Houttuynia cordata* Thunb.**<br>**PN/222, 22-11-2024; Goldharpur** | Saururaceae, Herb | Tokpanikong | Shoots, Rhizome | Juice of fresh leaves or rhizome is prepared | Oral | Treats Diarrhea, fever |
| ***Hydrocotyle sibthorpioides* Lam.**<br>**PN/257, 08-01-2025; Goldharpur** | Araliaceae, Herb | Leipirik | Leaves | A decoction is prepared from fresh leaves | Oral | Expectorant, treats cold, fever, jaundice and typhoid |
| ***Hygrophila auriculata* (Schumach.) Heine**<br>**PN/223, 22-11-2024; Goldharpur** | Acanthaceae, Herb | Kulekhawra | Leaves, stems | Leaf juice prepared by pasting or taken in the regular diet | Oral | Treats blood-related problems (increases hemoglobin levels) |
| ***Justicia adhatoda* L.**<br>**PN/238, 05-12-2024; Deocherra** | Acanthaceae, Shrub | Basak | Leaves | Decoction is prepared from young leaves | Oral | Expectorant, cough, cold, and fever. |
| ***Kalanchoe pinnata* (Lam.) Pers.**<br>**PN/245, 16-12-2024; Gopinagar** | Crassulaceae, Herb | Kapar pata | Leaves | Juice is prepared by pasting raw leaves | Oral, Topical | Stomachic, relieves from kidney stones, treats dysentery, stops bleeding from cuts |
| ***Lablab purpureus* (L.) Sweet**<br>**PN/247, 16-12-2024; Gopinagar** | Fabaceae, Climber | Sim | leaves | Paste is prepared from fresh leaves | Applied on the face overnight and washed in the morning (Topical) | Scar removal and make the face glow. |
| ***Lagenaria siceraria* (Molina) Standl.**<br>**PN/237, 23-11-2024; Goldharpur** | Cucurbitaceae, Climber | Kholtum | stem | Cut the stem of the *L. siceraria* plant just above the root and collect the water coming out. | Oral or applied on the top of the head (Topical) | Treats dizziness, nausea, vomiting and decreases high blood pressure |
| ***Leucas aspera* (Willd.) Link**<br>**PN/246, 16-12-2024; Gopinagar** | Lamiaceae, Herb | Dharma pushpa | Shoots | Juice is prepared from fresh leaves | Oral | Treats diabetes mellitus, asthma, and poor circulation |

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|---|---|---|---|---|---|---|
| ***Lasia spinosa* (L.) Thwaites**<br>**PN/239, 05-12-2024; Deocherra** | Araceae, Shrub | Kata kochu | Corm/tuber | Cut the corn and boil it in 1 liter of water until the water is turned half. Then collect the extract by using a fine mesh strainer or a clean muslin cloth. | Oral (1 glass daily) | Stops bleeding with stool |
| ***Mentha arvensis* L.**<br>**PN/212, 06-10-2024; Tilakpur** | Lamiaceae, Herb | Nungshitor dem | shoots | juice prepared or eaten raw | Oral | Carminative |
| ***Mentha × piperata***<br>**PN/224, 22-11-2024; Goldharpur** | Lamiaceae, Herb | Pudina | Leaves | Leaves were consumed raw every morning | Oral | Carminative |
| ***Mikania cordata* (Burm.f.) B.L.Rob.**<br>**PN/191, 29-07-2024; Halali** | Asteraceae, Climber | Refugee lota | Leaves | Leaf juice is prepared and taken empty stomach for 3 days | Oral | Stop bleeding due to piles |
| | | | | Leaf paste is applied to the wound or cut | Topical | Stop bleeding from cuts and wounds |
| ***Mimosa pudica* L.**<br>**PN/207, 27-09-2024; Isabpur** | Fabaceae, Shrub | Satyamara | Entire plant | A paste prepared | Applied to the skin and pimples (Topical) | Aided easy pulling out of the thorn from the injured area and induced pus removal from pimples |
| ***Morinda citrifolia* L.**<br>**PN/232, 23-11-2024; Goldharpur** | Rubiaceae, Tree | Noni fol | Leaves | Leaf paste | Topical | Stop bleeding and heal wound |
| | | | Fruit | Fruit juice | Applied to hair scalp (Topical) | Decrease dandruff |
| | | | | Tablets were prepared from fruit paste | Oral (1-2 tablets daily) | Treats diabetes mellitus |
| ***Musa balbisiana* Colla**<br>**PN/225, 22-11-2024; Goldharpur** | Musaceae, Tree | Aithya kola | Fruit | Juice of raw banana (1/2 cup) and ½ cup milk were mixed and taken empty stomach. | Oral | Treats dysentery |
| | | | Entire plant | 1 cup Juice prepared from young plantlets mixed with milk (1/2 cup) | Oral | Stop bleeding with stool |

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| ***Myristica fragrans*** **Houtt.** **PN/240, 06-12-2024; Deocherra** | Myristicaceae, Tree | Jaifal | Aril | Juice prepared by pasting dola tulsi, fhakpoi, ginger, leipirik | Oral | Relives fever |
| ***Nyctanthes arbor-tristis*** **L.** **PN/233, 23-11-2024; Goldharpur** | Oleaceae, Tree | Singarei | Leaves | Leaf juice prepared by pasting | Oral | Kills Intestinal worms |
| ***Ocimum canum*** **Sims** **PN/236, 23-11-2024; Goldharpur** | Lamiaceae, Herb | Niyampa | Shoot | Shoot paste is applied to the affected skin | Topical | Treats ring worm, blisters between toes and other skin ailments. |
| ***Ocimum gratissimum*** **L.** **PN/253, 22-12-2024; Jarailtali** | Lamiaceae, Shrub | Ram tulsi | Leaves | A paste or juice is prepared from fresh and mature leaves or Large mature leaves were put on the forehead to cure fever. | Paste applied on forehead (Topical) or juice consumed (Oral) | Relieves fever, cough & cold |
| ***Ocimum kilimandscharicum*** **Gurke** **PN/196, 05-08-2024; Baralutma** | Lamiaceae, Shrub | Haridwaror Tulsi/ Karpur Tulsi | Leaves | A decoction is prepared from mature leaves | Oral | Expectorant and relieves fever |
| ***Ocimum sanctum*** **L.** **PN/243, 16-12-2024; Gopinagar** | Lamiaceae, Herb | Dola tulsi | Shoots | Leaf juice | Eye drop | Removes dirt from the eyes and cleans them. |
| ***Ocimum tenuiflorum*** **L.** **PN/184, 13-06-2024; Kanchanbari** | Lamiaceae, Herb | Kala Tulsi | Leaves | Leaf juice of kala tulsi and *P. odoratum* was mixed and heated gently | Oral | Cough and cold |
| ***Oryza sativa*** **L.** **PN/227,23-11-2024; Goldharpur** | Poaceae, Herb | Dhan | Straw | Burn paddy straw and put a little water in the ash. Then, with the help of a fine mesh strainer, collect the extract. | Applied to the hair (Topical) | Increase hair health (make hair smooth, silky, and thick). |
| ***Oxalis corniculata*** **L.** **PN/198, 05-08-2024; Baralutma** | Oxalidaceae, Herb | Amali | Entire plant | A decoction is prepared by using the entire plant | Oral | Stomachic |

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| ***Parkia speciosa* Hassk.**<br>**PN/235, 23-11-2024; Goldharpur** | Fabaceae, Tree | Longchak | Seeds | Raw or roasted seeds were eaten as a delicacy | Oral | Carminative |
| ***Phyllanthus acidus* (L.) Skeels**<br>**PN/241, 05-12-2024; Deocherra** | Phyllanthaceae, Tree | Leuri | Bark | Bark decoction | Oral | Measles treatment |
| ***Phyllanthus emblica* L.**<br>**PN/204, 27-09-2024; Isabpur** | Phyllanthaceae, Tree | Angala | Bark | *P. emblica* bark and leaves of *E. alba* were pasted. Then collect the extract/juice mix with Mustard oil and turmeric powder. | Applied on skin (10-20 min before bathing), i.e., Topical | Treats Measles |
| ***Phyllanthus niruri* L.**<br>**PN/228, 22-11-2024; Goldharpur** | Phyllanthaceae, Herb | Angala hotina | Leaves | Leaf juice mixed with milk | Oral | Reduces physical weakness and Stomachic |
| ***Piper betle* L.**<br>**PN/195, 05-08-2024; Baralutma** | Piperaceae, Climber | Pan | Petiole | Paste is prepared | Topical | Stop bleeding from cuts and wounds healing |
| ***Piper nigrum* L.**<br>**PN/206, 27-09-2024; Isabpur** | Piperaceae, climber | Gul murokshi | Seeds | Paste of durba roots, ginger, and black pepper was mixed | Applied directly to the forehead (Topical) | Decrease hypertension |
| ***Plumeria alba* L.**<br>**PN/219, 18-11-2024; Rangapania** | Apocynaceae, Shrub | Khaka leehao | Leaves, bark | Leaf paste is prepared, and a decoction of bark is prepared | Topical, Oral | Wound healing, cures skin allergies, and cures asthma |
| ***Polygonum odoratum* Lour.**<br>**PN/218, 18-11-2024; Rangapania** | Polygonaceae, Herb | Fhakpoi | Leaves & shoots | A decoction is made by pasting leaves and tender shoots, or even raw leaves are consumed directly for health benefits. | Oral | Fever, cough, cold, and typhoid |

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| ***Portulaca oleracea* L.**<br>**PN/179, 28-04-2024; Chirakuthi** | Portulacaceae, Herb | Not mentioned | Entire plant | Juice is prepared. 1-2 spoons mixed with lukewarm water and taken 3 times a day | Oral | Treats Piles |
| ***Psidium guajava* L.**<br>**PN/181, 09-05-2024; Nidevi** | Myrtaceae, Tree | Pongitol | Leaf, tender shoots | Young leaves were eaten raw | Oral | Treats dysentery |
| ***Santalum album***<br>**L.**<br>**PN/183, 09-05-2024; Nidevi** | Santalaceae, Tree | Swet chandan | Wood | Powered wood is mixed with water, and a thick paste is made | Applied on the skin, forehead (Topical) | Relief from skin allergies and diseases, headache |
| ***Scoparia dulcis* L.**<br>**PN/208, 27-09-2024; Isabpur** | Plantaginaceae, Herb | Jongoli jesthomadhu | Leaves and tender shoots | Leaf juice mixed with milk and elaichi lebu (*Citrus limon*) | Oral | Stomachic, treats diarrhea, dysentery, and stops bloody stool. |
| ***Senna alata* Linn.**<br>**PN/205, 27-09-2024; Isabpur** | Fabaceae, Shrub | Dadur pata | Leaves | Leaf paste is prepared | Topical | Cures ringworm, eczema, and some other skin ailments. |
| ***Senna tora***<br>**(L.) Roxb.**<br>**PN/231, 23-11-2024; Goldharpur** | Fabaceae, Herb | Pagolkhoi | root | Paste prepared by using roots | Topical | Cures swollen fingertip and nail- ripped infection |
| ***Stephania hernandifolia* Walp.**<br>**PN/185, 13-06-2024; Kanchanbari** | Menispermaceae, Climber | Not mentioned | Leaves | Leaf paste is mixed with soil | Mixture is applied on the top of the head (Topical) | Decrease hypertension and cerebral hyperfusion |
| ***Syzygium cumini* (L.) Skeels.**<br>**PN/226, 18-11-2024; Rangapania** | Myrtaceae, Tree | Jam fal | Leaves | Leaf juice mixed with common salt and heated | Oral | Diarrhea, Diabetes |
| ***Tagetes sp.***<br>**PN/194, 29-07-2024; Halali** | Asteraceae , Herb | Senarei | Leaves | Paste prepared from leaves | Topical | Stop bleeding and wound healing. |
| ***Tridax procumbens* L.**<br>**PN/210, 06-10-2024; Tilakpur** | Asteraceae, herb | Bhringaraj | Entire plant | Juice is prepared | Topical | Improves scalp health and reduces hair fall |
| ***Zingiber officinale***<br>**Roscoe**<br>**PN/209, 27-09-2024; Isabpur** | Zingiberaceae, Herb | Ada | Rhizome | Eaten raw early morning | Oral | Carminative, Expectorant |

| | | | | | | |
|---|---|---|---|---|---|---|
| ***Ziziphus mauritiana* Lam. PN/177, 28-04-2024; Chirakuthi** | Rhamnaceae, Tree | Borei | Tender Shoots | Tender shoots were plucked and consumed raw | Oral | Treats Diarrhea |

**Legend:** PN = Plant number

**Recipes/Dishes**

The Bishnupriya Manipuri community possesses a rich heritage of folk medicinal remedies, which are directly consumed, applied, or fomented to alleviate various ailments. In addition to these treatments, members of this ethnic group traditionally prepare a variety of dishes specifically intended for consumption when a family member is unwell. These recipes are not only flavourful and nutritious but also possess notable medicinal properties. During the ethnomedicinal survey, respondents voluntarily shared these traditional medicinal delicacies with us. The documented recipes are presented below:

**Recipe 1**

Herbal ingredient: *Hibiscus rosa-sinensis* L. (common name: China rose; BM name: Joba)

Technique: Finely chop the leaves of *Hibiscus rosa-sinensis* L. and cut a potato into small pieces. In a pan, heat 1/4 teaspoon of oil, then add the chopped ingredients along with a small amount of salt, 1–2 finely chopped green chilies, and no additional spices. Add water and bring the mixture to a boil.

Application: This recipe is made when a family member is suffering from a fever.

**Recipe 2**

Herbal ingredients: *Ziziphus mauritiana* Lam. (common name: Indian jujube; BM name: Borei), *Psidium guajava* L. (Common name: guava; BM name: Pongitol), *Syzygium cumini* (L.) Skeels. (Common name: Jamun, BM name: Jam).

Technique: Chop the leaves of *Z. mauritiana, P. guajava*, *S. cumini* and a potato finely. Take a pan, put 1/4$^{th}$ teaspoon oil, put the leaves along with the potato, very little salt, no spices, or if added extremely less in amount, a single green chili, water, and boil the dish.

Application: Stomachache and diarrhea, dysentery-like situations.

**Recipe 3**

Herbal ingredients: *Eclipta alba* (Common name: False daisy, BM name: Kehuriya)

Technique: Chop the young leaves and aerial parts of this plant and the potato together. Take a pan, put very little oil (1/2 teaspoon oil), fry prawns and potatoes. Then add the chopped leaves, add 1-2 chili, 1/4$^{th}$ teaspoon spices, and very little salt. Finally add water and cook it.

Application: Cures weakness, dizziness, provides physical strength, and is extremely beneficial for blood-related issues like blood purification, increasing haemoglobin levels. This dish is mostly prepared to serve women post-delivery to combat the effects of huge blood loss during delivery.

## Results and Discussion

**Diversity and administration methods**

In this study report, a total of 82 plant species belonging to 42 families have been documented in Table 2. The plants reported by the respondents belongs to families such as Lamiaceae (9), Asteraceae (9) and Fabaceae (8) and rest of the families were not so abundant since they have only 1 or 2 species which are mentioned as medicinally significant. This shows the dominance of these families in the study area (different parts of Tripura). The dominance of Lamiaceae, Asteraceae, and Fabaceae is in correlation with earlier studies (Singh *et al*. 2020, Debbarma *et al*. 2017, Bhardwaj *et al*. 2025, Sumant *et al*. 2025). Several studies also reported the family Fabaceae to be the most dominant due to the presence of the highest number of medicinal plant species in this family (Bhoi & Ahirwar,2025; Singh *et al*., 2024; Muthukrishnan & Ramachandran, 2025).

Most of the plants are in herbaceous form, i.e., 36 species comprising 44% of the total species, followed by shrubs and trees with 18 species each comprising 22% and 10 species of climbers comprising 12% of the total species. Herbaceous plants are annual, thrive fast and are easy to apply, have a shorter life span, and are easily available. The abundance of herbs could be due to threats like deforestation, as shrubs and trees are mostly affected due to deforestation. Herbs are often considered to have a higher number of secondary metabolites that act as bioactive compounds (Singh *et al*. 2020). Several studies revealed that herbaceous forms are dominant over other forms. The present study also shows dominance of herbs, which is correlated to the studies by Bhardwaj et al., 2025 and Muthukrishnan & Ramachandran, 2025. A similar study by Reang et al., (2022), on the use of medicinal plants by indigenous peoples of Tripura, has shown the dominance of herbs over shrubs and trees in terms of the life forms of medicinal plants. According to them, herbal forms were (33.33%) followed by tree forms (27.50%) and shrubs (21.67%). Life forms of the plants are shown in the Figure 4.

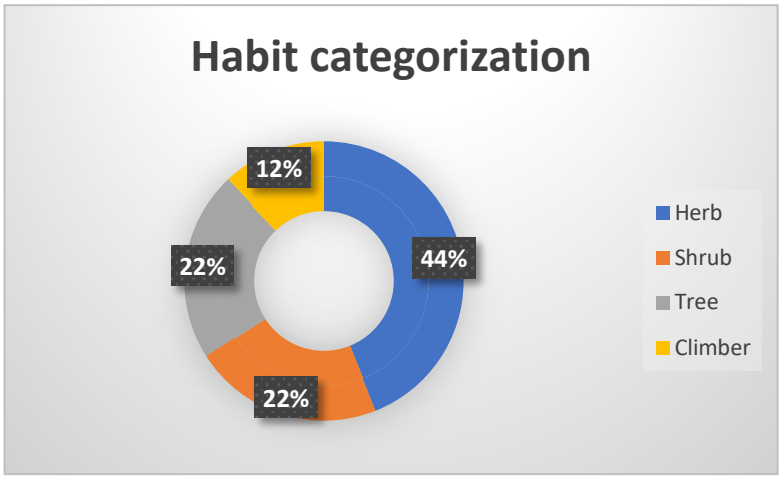


Figure 4. Habit categorization of ethnomedicinal plants used by Bishnupriya Manipuri community

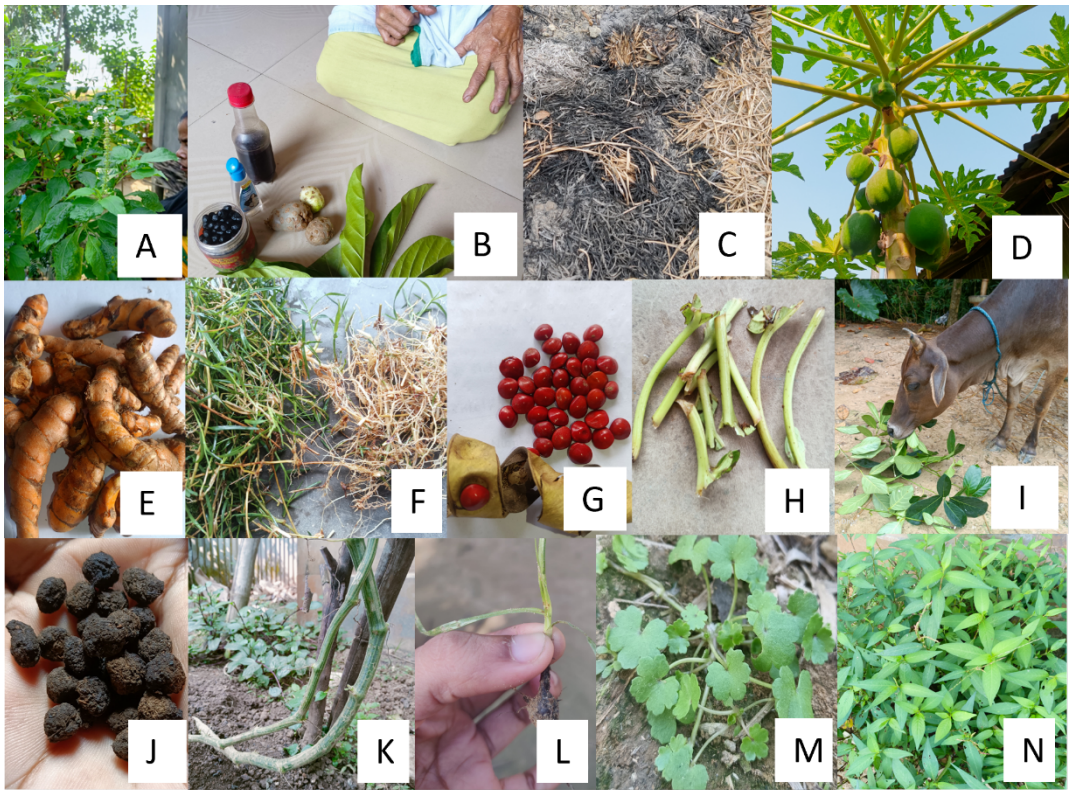


Figure 5. Medicinal plants used by community Bishnupriya Manipuri community A. *Ocimum gratissimum* L.; B. Bishnupriya Manipuri old lady displaying tablets prepared from *Morinda citrifolia* L. fruits; C. *Oryza sativa* L. ash; D. *Carica papaya* L. fruits; E. *Curcuma longa* L. rhizome; F. *Cynodon dactylon* (L.) Pers. roots & leaves; G. *Adenanthera pavonina* L. seeds; H. Piper betle L. petiole; I. *Artocarpus heterophyllus* Lam. *Leaves* are given to the cow to cure loose motion; J. Khulleiguli; K. Lagenaria siceraria (Molina) Standl. Stem; L. *Cyperus rotundus* L. tubers; M. *Hydrocotyle sibthorpioides* Lam.; N. *Polygonum odoratum* Lour.

For effective functions and harmless administration, the modes or routes of proper application should be known. Here, we can see that 58 species (61%) are applied orally by chewing or swallowing, 34 species (35%) applied tropically, and a very few are applied by other methods. Most of the herbs used for treatment are food supplements that are included in the diet of village peoples. This can be a sole cause of higher application of these herbal medicines by oral means. This is correlated with a study by Singh et. al., 2024. A survey conducted in Bishnupur district of Manipur also confirmed that most of the remedies were taken orally (Devi *et al*. 2017). The modes of applications are tabulated in the Figure 6.

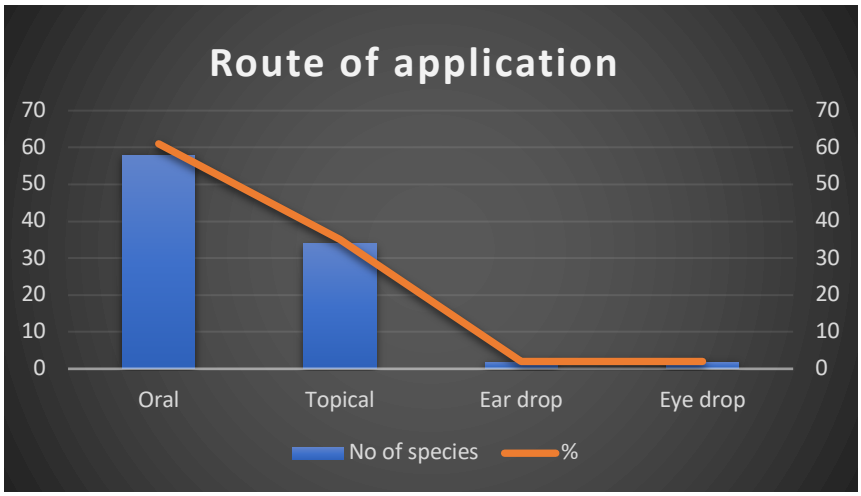


Figure 6. Route of application of medicinal flora used by Bishnupriya Manipuri community

Leaves are the most common part of the plant that is used for treatment. Here, out of 82 plants leaves of 42 species are used which is (43.75%), followed by shoot, entire plant, stem, fruit, bark etc. Parts of plants, the number of species, and percentage are shown in Figure 7.

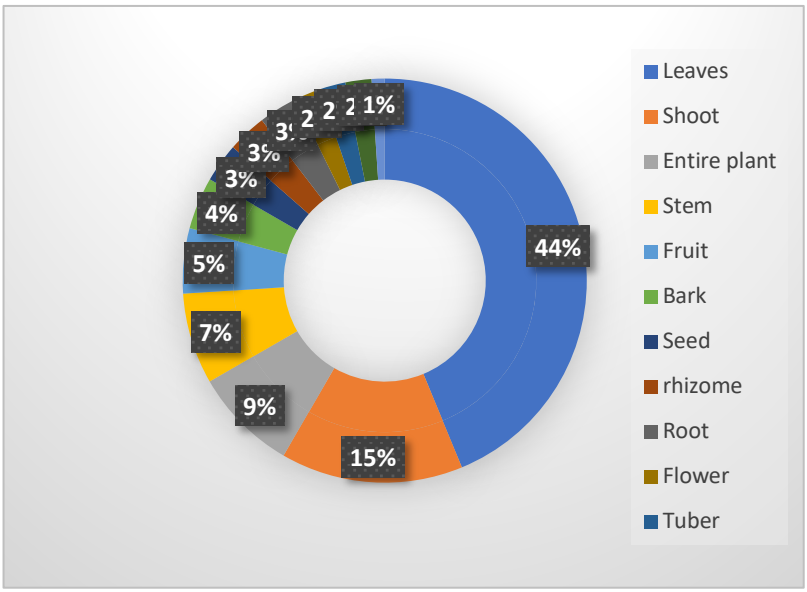


Figure 7. The number of plant parts used by Bishnupriya Manipuri community,Tripura

**Quantitative analysis**

Data analysis of ethnomedicinal information has been calculated for the listed (82) plants. The values of Ui, UV, FC and RFC have been represented in Table 3.

**Use Value (UV)**

The values of the UV range from 0.006 to 0.040. The highest value is noted for *Azadirachta indica* A. Juss. (0.040) followed by *Curcuma longa* L. (0.026), *Eclipta alba* (L.) Hassk. (0.026), *Ocimum sanctum* L. (0.020) and *Polygonum odoratum* (Mill.) Druce (0.020) and the lowest value is noted for several species including *Senna alata* Linn. (0.006), *Ocimum canum* (0.006) etc. High use value denotes the higher importance of these species among the community, or it may be due to the higher harvesting pressure on the species. On the other hand, lower values of UV are attributed to the scarce knowledge about the ethnomedicinal uses of these species among the respondents (Najem et. al., 2019).

**Relative frequency of Citation (RFC)**

The value of RFC ranges from (0.006) to (0.826). The highest value of RFC is obtained for *Polygonum odoratum* (Mill.) Druce (0.826) followed by *Eclipta alba* (L.) Hassk. (0.620), *Azadirachta indica* A. Juss. (0.453) and the lowest values obtained for

*Stephania hernandifolia* (Willd.) Walp., *Leucas aspera* (Willd.) Link and *Lasia spinosa* (L.) which is (0.006) for all. A high value of RFC signifies that these species were reported by most of the respondents as this directly depends on the number of respondents reporting the use of the particular species. This shows species with high RFC values are widespread in the study area and local people have knowledge about the ethnomedicinal significance of these plants (Muthukrishnan & Ramachandran 2025).

Table 3. List of plants along with their Use Value (UV), Frequency of Citation (FC) and Relative frequency of Citation (RFC)

| Species name | Ui | UV | FC | RFC |
|---|---|---|---|---|
| ***Adenanthera pavonina* L.** | 2 | 0.013 | 9 | 0.060 |
| ***Aegle marmelos* (L.) Corrêa** | 2 | 0.013 | 4 | 0.026 |
| ***Ananas comosus* (L.) Merr.** | 2 | 0.013 | 32 | 0.213 |
| ***Andrographis paniculata* (Burm.f.) Wall. ex Nees** | 1 | 0.006 | 7 | 0.046 |
| ***Allium hookeri* Thwaites** | 2 | 0.013 | 15 | 0.100 |
| ***Allium sativum* L.** | 2 | 0.013 | 9 | 0.060 |
| ***Aloe barbadensis* Mill.** | 2 | 0.013 | 22 | 0.146 |
| ***Alternanthera brasiliana var. villosa* (Moq.) Kuntze** | 1 | 0.006 | 12 | 0.080 |
| ***Artocarpus heterophyllus* Lam.** | 1 | 0.006 | 5 | 0.033 |
| ***Azadirachta indica* A. Juss.** | 6 | 0.040 | 68 | 0.453 |
| ***Blumea sinuata* (Lour.) Merr.** | 1 | 0.006 | 9 | 0.060 |
| ***Boerhavia diffusa* L.** | 2 | 0.013 | 19 | 0.126 |
| ***Calliandra haematocephala* Hassk.** | 1 | 0.006 | 3 | 0.020 |
| ***Carica papaya* L.** | 1 | 0.006 | 14 | 0.093 |
| ***Catharanthus roseus* (L.) G. Don** | 1 | 0.006 | 5 | 0.033 |
| ***Centella asiatica* (L.) Urb.** | 2 | 0.013 | 89 | 0.593 |
| ***Chromolaena odorata* (L.) R.M. King & H. Rob.** | 1 | 0.006 | 22 | 0.146 |
| ***Chrysanthemum spp.*** | 1 | 0.006 | 2 | 0.013 |
| ***Clerodendrum trichotomum* Thunb.** | 1 | 0.006 | 6 | 0.040 |
| ***Clitoria ternatea* L.** | 2 | 0.013 | 37 | 0.246 |
| ***Coccinia grandis* (L.) Voigt** | 1 | 0.006 | 2 | 0.013 |
| ***Colocasia esculenta* (L.) Schott** | 1 | 0.006 | 5 | 0.033 |
| ***Corchorus capsularis* L.** | 1 | 0.006 | 7 | 0.046 |
| ***Costus pictus* D.Don** | 1 | 0.006 | 56 | 0.373 |
| ***Curcuma longa* L.** | 4 | 0.026 | 45 | 0.300 |
| ***Cuscuta spp.*** | 1 | 0.006 | 3 | 0.020 |
| ***Cyanthillium cinereum* (L.) H.Rob.** | 1 | 0.006 | 7 | 0.046 |
| ***Cynodon dactylon* (L.) Pers.** | 2 | 0.013 | 26 | 0.173 |
| ***Cyperus rotundus* L.** | 2 | 0.013 | 5 | 0.033 |
| ***Dracaena trifasciata* (Prain) Mabb.** | 1 | 0.006 | 15 | 0.100 |
| ***Eclipta alba* (L.) Hassk.** | 4 | 0.026 | 93 | 0.620 |
| ***Eryngium foetidum* L.** | 2 | 0.013 | 3 | 0.020 |
| ***Eupatorium birmanicum* DC.** | 1 | 0.006 | 13 | 0.086 |
| ***Euphorbia neriifolia* L.** | 1 | 0.006 | 19 | 0.126 |
| ***Ficus hispida* L.f.** | 1 | 0.006 | 1 | 0.006 |
| ***Ficus sagittata* Vahl** | 1 | 0.006 | 2 | 0.013 |
| ***Hibiscus cannabinus* L.** | 1 | 0.006 | 3 | 0.020 |
| ***Hibiscus rosa-sinensis* L.** | 2 | 0.013 | 21 | 0.140 |
| ***Houttuynia cordata* Thunb.** | 2 | 0.013 | 17 | 0.113 |
| ***Hydrocotyle sibthorpioides* Lam.** | 2 | 0.013 | 15 | 0.100 |
| ***Hygrophila auriculata* (Schumach.) Heine** | 2 | 0.013 | 12 | 0.080 |
| ***Justicia adhatoda* L.** | 2 | 0.013 | 18 | 0.120 |
| ***Kalanchoe pinnata* (Lam.) Pers.** | 1 | 0.006 | 33 | 0.220 |
| ***Lablab purpureus* (L.) Sweet** | 1 | 0.006 | 15 | 0.100 |

| | | | | |
|---|---|---|---|---|
| ***Lagenaria siceraria* (Molina) Standl.** | 1 | 0.006 | 5 | 0.033 |
| ***Leucas aspera* (Willd.) Link** | 1 | 0.006 | 1 | 0.006 |
| ***Lasia spinosa* (L.) Thwaites** | 1 | 0.006 | 1 | 0.006 |
| ***Mentha arvensis* L.** | 1 | 0.006 | 55 | 0.366 |
| ***Mentha × piperata*** | 1 | 0.006 | 62 | 0.413 |
| ***Mikania cordata* (Burm.f.) B.L.Rob.** | 2 | 0.013 | 45 | 0.300 |
| ***Mimosa pudica* L.** | 1 | 0.006 | 28 | 0.186 |
| ***Morinda citrifolia* L.** | 3 | 0.020 | 8 | 0.053 |
| ***Musa balbisiana* Colla** | 2 | 0.013 | 27 | 0.180 |
| ***Myristica fragrans* Houtt.** | 1 | 0.013 | 5 | 0.033 |
| ***Nyctanthes arbor-tristis* L.** | 1 | 0.006 | 19 | 0.126 |
| ***Ocimum canum* Sims** | 1 | 0.006 | 17 | 0.113 |
| ***Ocimum gratissimum* L.** | 3 | 0.020 | 49 | 0.326 |
| ***Ocimum kilimandscharicum* Gurke** | 1 | 0.006 | 3 | 0.020 |
| ***Ocimum sanctum* L.** | 3 | 0.020 | 78 | 0.520 |
| ***Ocimum tenuiflorum* L.** | 1 | 0.006 | 66 | 0.440 |
| ***Oryza sativa* L.** | 1 | 0.006 | 18 | 0.120 |
| ***Oxalis corniculata* L.** | 1 | 0.006 | 8 | 0.053 |
| ***Parkia speciosa* Hassk.** | 2 | 0.013 | 42 | 0.280 |
| ***Phyllanthus acidus* (L.) Skeels** | 1 | 0.006 | 3 | 0.020 |
| ***Phyllanthus emblica* L.** | 1 | 0.006 | 37 | 0.246 |
| ***Phyllanthus niruri* L.** | 1 | 0.006 | 5 | 0.033 |
| ***Piper betle* L.** | 1 | 0.006 | 29 | 0.193 |
| ***Piper nigrum* L.** | 1 | 0.006 | 23 | 0.153 |
| ***Plumeria alba* L.** | 2 | 0.013 | 7 | 0.046 |
| ***Polygonum odoratum* Lour.** | 3 | 0.020 | 124 | 0.826 |
| ***Portulaca oleracea* L.** | 1 | 0.006 | 3 | 0.020 |
| ***Psidium guajava* L.** | 2 | 0.013 | 35 | 0.233 |
| ***Santalum album* L.** | 1 | 0.006 | 33 | 0.220 |
| ***Scoparia dulcis* L.** | 1 | 0.006 | 7 | 0.046 |
| ***Senna alata* Linn.** | 1 | 0.006 | 2 | 0.013 |
| ***Senna tora* (L.) Roxb.** | 1 | 0.006 | 26 | 0.173 |
| ***Stephania hernandifolia* Walp.** | 1 | 0.006 | 1 | 0.006 |
| ***Syzygium cumini* (L.) Skeels.** | 2 | 0.013 | 57 | 0.380 |
| ***Tagetes sp.*** | 1 | 0.006 | 55 | 0.366 |
| ***Tridax procumbens* L.** | 1 | 0.006 | 6 | 0.040 |
| ***Zingiber officinale* Roscoe** | 2 | 0.013 | 19 | 0.126 |
| ***Ziziphus mauritiana* Lam.** | 1 | 0.006 | 18 | 0.120 |

**Family Use Value (FUV)**

The FUV ranges from (0.006) to (0.040), recorded in the Table 4. The families with high use values are Meliaceae (0.040) with 1 species, Polygonaceae and Rubiaceae (0.020) with 1 species each, Zingiberaceae (0.019) with 2 species, and the lowest use values are Costaceae, Amaranthaceae, Plantaginaceae, etc., with a value of (0.006) with 1 species each. But the highest number of species was reported from Asteraceae (9), Lamiaceae (9) and Fabaceae (8) families, with (FUV= 0.009). This shows that the importance of family is attributed to the use value of the species rather than the higher occurrence of species from a particular family (Muthukrishnan & Ramachandran, 2025).

Table 4. The number of occurrences of plant species in a particular family and their Family Use Value (FUV)

| Family | UVs | Ns | FUV |
|---|---|---|---|
| Acanthaceae | 0.032 | 3 | 0.011 |
| Amaranthaceae | 0.006 | 1 | 0.006 |
| Amaryllidaceae | 0.026 | 2 | 0.013 |
| Apiaceae | 0.026 | 2 | 0.013 |

| | | | |
|---|---|---|---|
| Apocynaceae | 0.019 | 2 | 0.009 |
| Araceae | 0.012 | 2 | 0.006 |
| Araliaceae | 0.013 | 1 | 0.013 |
| Asphodelaceae | 0.013 | 1 | 0.013 |
| Asparagaceae | 0.006 | 1 | 0.006 |
| Asteraceae | 0.081 | 9 | 0.009 |
| Bromeliaceae | 0.013 | 1 | 0.013 |
| Caricaeae | 0.006 | 1 | 0.006 |
| Crassulaceae | 0.006 | 1 | 0.006 |
| Cucurbitaceae | 0.012 | 2 | 0.006 |
| Cyperaceae | 0.013 | 1 | 0.013 |
| Convolvulaceae | 0.006 | 1 | 0.006 |
| Costaceae | 0.006 | 1 | 0.006 |
| Euphorbiaceae | 0.006 | 1 | 0.006 |
| Fabaceae | 0.069 | 8 | 0.009 |
| Lamiaceae | 0.082 | 9 | 0.009 |
| Malvaceae | 0.025 | 3 | 0.008 |
| Meliaceae | 0.040 | 1 | 0.040 |
| Menispermaceae | 0.006 | 1 | 0.006 |
| Moraceae | 0.018 | 3 | 0.006 |
| Musaceae | 0.013 | 1 | 0.013 |
| Myristicaceae | 0.013 | 1 | 0.013 |
| Myrtaceae | 0.026 | 2 | 0.013 |
| Nyctaginaceae | 0.013 | 1 | 0.013 |
| Oleaceae | 0.006 | 1 | 0.006 |
| Oxalidaceae | 0.006 | 1 | 0.006 |
| Phyllanthaceae | 0.018 | 3 | 0.006 |
| Piperaceae | 0.012 | 2 | 0.006 |
| Plantaginaceae | 0.006 | 1 | 0.006 |
| Poaceae | 0.019 | 2 | 0.009 |
| Polygonaceae | 0.020 | 1 | 0.020 |
| Portulacaceae | 0.006 | 1 | 0.006 |
| Rhamnaceae | 0.006 | 1 | 0.006 |
| Rubiaceae | 0.020 | 1 | 0.020 |
| Rutaceae | 0.013 | 1 | 0.013 |
| Santalaceae | 0.006 | 1 | 0.006 |
| Saururaceae | 0.013 | 1 | 0.013 |
| Zingiberaceae | 0.039 | 2 | 0.019 |

**Informant consensus factor (ICF)**

The reported disease conditions were categorized based on primary physiological systems affected and similarity of symptoms, considering both biomedical and ethnomedicinal perspectives. Categories included gastrointestinal, respiratory, dermatological, musculoskeletal, and general health disorders, reflecting traditional knowledge structures and enabling comparative analysis of plant use patterns. To compute the informant consensus factor values, ailments reported to be cured by different ethnomedicinal plants were grouped into 10 ailment categories based on disease characteristics and treatment resemblances (Table 5). The values of ICF range from (0.333) to (1), recorded in Table 8. The highest value of ICF was noted for Sexual disorder (1) with 2 use reports for a single species, Respiratory disorders (0.483) with 30 use reports for 16 species, General Health (0.482) with 57 use reports for 30 species, Endocrine ailment (0.476) with 22 use reports for 12 species. Whereas the lowest values of ICF were noted for Gastro intestinal (0.333) with 49 use reports for 33 species and Circulatory disorder (0.333) with 10 use reports for 7 species. The high value of ICF for the particular ailments denotes a high degree of agreement among the local practitioners regarding the use of these species for the treatment of the respective ailment. These species could be further evaluated to discover novel therapeutic drugs. But the lower ICF value denotes disagreement and lack of communication among them (Najem et al., 2019).

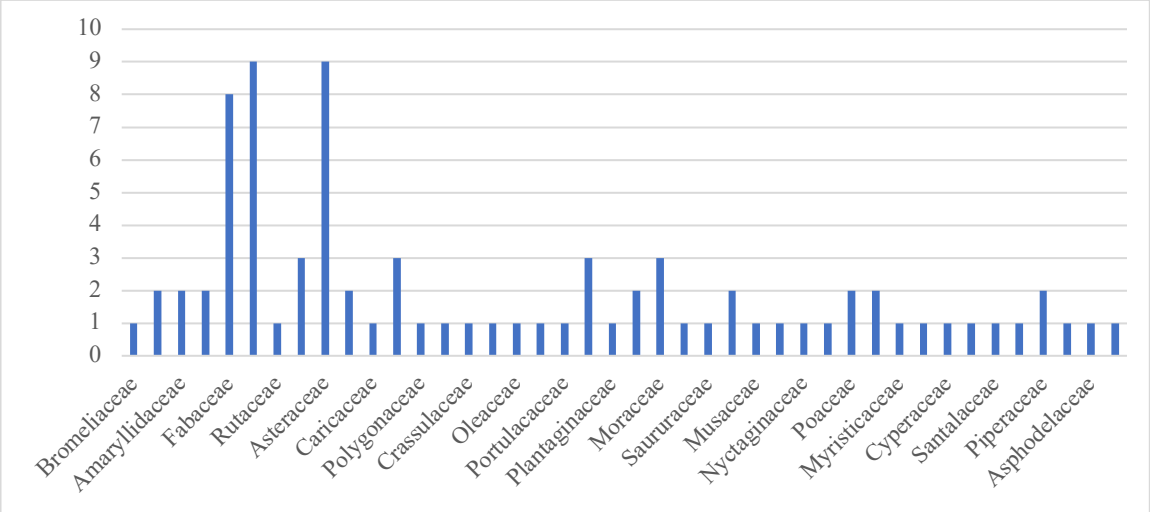


Figure 8. Graph reflecting the number of plant species reported from each famil

Table 5: Highlights informant consensus factors (ICF) values for 10 ailment categories that were recorded in 4 districts of Tripura

| Ailment Category | Total no of species used for a disease category (Nt) | No of use reports (Nur) | IFC (Informant Consensus Factor) |
|---|---|---|---|
| Dermatological implications | 27 | 43 | 0.381 |
| Wound healing | 7 | 12 | 0.455 |
| Gastrointestinal issues | 33 | 49 | 0.333 |
| Respiratory disorders | 16 | 30 | 0.483 |
| Circulatory disorder | 7 | 10 | 0.333 |
| Endocrine ailment | 12 | 22 | 0.476 |
| Muscular pain/Fracture | 3 | 4 | 0.333 |
| General health | 30 | 57 | 0.482 |
| Sexual disorder | 1 | 2 | 1 |
| Other | 11 | 20 | 0.474 |

**Fidelity level (FL)**

The species with the highest fidelity is *Polygonum odoratum* (Mill.) Druce with (FL= 79.33%) for the treatment of general health problems like fever and the same species also has high fidelity (FL=58.67%) for the treatment of Respiratory disorders recorded in Table 6. Another species with high fidelity is *Centella asiatica* (L.) with (FL= 59.33%) as a laxative and (FL=46.67%) as stomachic for the treatment of Gastrointestinal issues. *Tagetes sp.* have high fidelity (36.67%) for the treatment of wounds, *Azadirachta indica* A. Juss. has high fidelity (FL=28.00%) for the treatment of Dermatological problems and *Eclipta alba* (L.) Hassk. has (FL=25.33%) for the treatment of Circulatory disorders. Species with high fidelity are more often used to treat a particular group of ailments, and this shows a higher cultural significance of the species (Reang et al., 2023). Here, the result depicts a higher cultural significance of *Polygonum odoratum* among the Bishnupriya Manipuri community of Tripura.

The Bishnupriya Manipuri community of Tripura has gathered the knowledge of vast floral diversity and its utilization in traditional medicinal practices over the years. Herbal medicines are considered to be non-toxic and mostly used to get relief from common diseases like fever, common cold, gastrointestinal ailments etc. The current report provides overall data regarding the ethnomedicinal knowledge of the Bishnupriya Manipuri community of Tripura. This enumerates 83 ethno-botanical floral species that belong to 41 different families. This information could be extensively utilized for further research and will also provide scopes for a new field of research from this traditional knowledge.

Table 6. Fidelity Level (%) values for some plant species used by informants against corresponding ailments

| Categories of Ailment | Disease/ Health benefits | Number of plant species used for a particular health issue | Informants | Fidelity Level (%) |
|---|---|---|---|---|
| **Dermatological implications** | Measles | 2 | 40 | *Phyllanthus acidus* (L.) Skeels (3/150 = 2.00%)<br>*Phyllanthus emblica* L. (37/150 = 24.67%) |
| | Ringworm | 2 | 12 | *Senna alata* Linn. (2/150= 1.33%), *Ocimum canum* Sims (10/150= 6.67%) |
| | Eczema | 1 | 2 | *Senna alata* Linn. (2/150= 1.33%) |
| | Pimples | 1 | 22 | *Mimosa pudica* L. (22/150=14.67%) |
| | Blisters, rashes, other skin problems and boost skin health | 12 | 190 | *Adenanthera pavonina* L. (7/150=4.67%)<br>*Aloe barbadensis* Mill. (20/150=13.33%)<br>*Azadirachta indica* A. Juss. (42/150= 28.00%)<br>*Curcuma longa* L. (33/150=22.00%)<br>*Cuscuta spp.* (3/150=2.00%)<br>*Lablab purpureus* (L.) Sweet (15/150=10.00%)<br>*Mimosa pudica* L. (10/150=6.67%)<br>*Ocimum canum* Sims (9/150=6.00%)<br>*Phyllanthus emblica* L. (17/150=11.33%)<br>*Plumeria alba* L. (7/150=4.67%)<br>*Santalum album* L. (26/150=17.33%)<br>*Senna alata* Linn. (1/150=0.67%) |
| | Dandruff | 1 | 5 | *Morinda citrifolia* L. (5/150=3.33%) |
| | Hair fall | 1 | 6 | *Tridax procumbens* L. (6/150=4.00%) |
| | Hair & scalp health booster | 4 | 40 | *Hibiscus rosa-sinensis* L. (20/150=13.33%)<br>*Morinda citrifolia* L. (4/150=2.67%)<br>*Oryza sativa* L. (14/150=9.33%)<br>*Tridax procumbens* L. (2/150=1.33%) |
| | Swollen fingertip | 1 | 26 | *Senna tora* (L.) Roxb. (17.33%) |
| | Thorn penetration stiffness | 2 | 32 | *Colocasia esculenta* (L.) Schott (5/150= 3.33%)<br>*Mimosa pudica* L. (27/150=18.00%) |
| **Wound Healing** | Wounds, Cuts | 7 | 149 | *Chromolaena odorata* (L.) R.M. King & H. Rob. (22/150=14.67%)<br>*Cynodon dactylon* (L.) Pers. (17/150=11.33%)<br>*Mikania cordata* (Burm.f.) B.L.Rob. (16/150=10.67%)<br>*Morinda citrifolia* L. (8/150=5.33%)<br>*Piper betle* L. (29/150=19.33%)<br>*Plumeria alba* L. (2/150=1.33%)<br>*Tagetes sp.* (55/150= 36.67%) |
| **Gastro intestinal Issues** | Diarrhoea | 7 | 97 | *Aegle marmelos* (L.) Corrêa (1/150=0.67%)<br>*Artocarpus heterophyllus* Lam. (5/150=3.33%)<br>*Ficus hispida* L.f. (*Ficus hispida* L.f. (1/150=0.67%)<br>*Houttuynia cordata* Thunb. (15/150=10.00%)<br>*Scoparia dulcis* L. (4/150=2.67%)<br>*Syzygium cumini* (L.) Skeels. (53/150=35.33%)<br>*Ziziphus mauritiana* Lam. (18/150=12.00%) |
| | Dysentery | 6 | 85 | *Aegle marmelos* (L.) Corrêa (1/150=0.67%)<br>*Ficus hispida* L.f. (*Ficus hispida* L.f. (1/150=0.67%) |

| | | | | |
|---|---|---|---|---|
| | | | | *Kalanchoe pinnata* (Lam.) Pers. (15/150=10.00%)<br>*Musa balbisiana* Colla (23/150=15.33%)<br>*Psidium guajava* L. (35/150=23.33%)<br>*Ziziphus mauritiana* Lam. (10/150=6.67%) |
| | Bloody stool | 4 | 20 | *Aegle marmelos* (L.) Corrêa (2/150=1.33%)<br>*Lasia spinosa* (L.) Thwaites (1/150=0.67%)<br>*Musa balbisiana* Colla (12/150=8.00%)<br>*Scoparia dulcis* L. (5/150=3.33%) |
| | Laxative | 1 | 89 | *Centella asiatica* (L.) Urb. (89/150=59.33%) |
| | Carminative | 7 | 193 | *Allium sativum* L. (2/150=1.33%)<br>*Centella asiatica* (L.) Urb. (27/150=18.00%)<br>*Eryngium foetidum* L. (1/150=0.67%)<br>*Mentha arvensis* L. (55/150=36.67%)<br>*Mentha × piperata* (62/150=41.33%)<br>*Parkia speciosa* Hassk. (42/150=28.00%)<br>*Zingiber officinale* Roscoe (4/150=2.67%) |
| | Stomachic | 8 | 118 | *Andrographis paniculata* (Burm.f.) Wall. ex Nees (5/150=3.33%)<br>*Centella asiatica* (L.) Urb. (70/150=46.67%)<br>*Eryngium foetidum* L. (2/150=1.33%)<br>*Eupatorium birmanicum* DC. (13/150=8.67%)<br>*Kalanchoe pinnata* (Lam.) Pers. (11/150=7.33%)<br>*Oxalis corniculata* L. (8/150=5.33%)<br>*Phyllanthus niruri* L. (4/150=2.67%)<br>*Scoparia dulcis* L. (5/150=3.33%) |
| **Circulatory disorder** | Hypertension | 4 | 30 | *Calliandra haematocephala* Hassk. (3/150=2.00%)<br>*Piper nigrum* L. (23/150=15.33%)<br>*Lagenaria siceraria* (Molina) Standl. (3/150=2.00%)<br>*Stephania hernandifolia* Walp. (1/150=0.67%) |
| | Cerebral Hyperfusion | 1 | 1 | *Stephania hernandifolia* Walp. (1/150=0.67%) |
| | poor circulation | 1 | 1 | *Leucas aspera* (Willd.) Link (0.67%) |
| | Anaemia | 1 | 38 | *Eclipta alba* (L.) Hassk. (38/150=25.33%) |
| **Endocrine ailments** | Diabetes | 7 | 33 | *Andrographis paniculata* (Burm.f.) Wall. ex Nees (1/150=0.67%)<br>*Catharanthus roseus* (L.) G. Don (5/150=3.33%)<br>*Clitoria ternatea* L. (9/150=6.00%)<br>*Coccinia grandis* (L.) Voigt (2/150=1.33%)<br>*Leucas aspera* (Willd.) Link (1/150=0.67%)<br>*Morinda citrifolia* L. (2/150=1.33%)<br>*Syzygium cumini* (L.) Skeels. (13/150=8.67%) |
| | Kidney disorders | 3 | 58 | *Allium hookeri* Thwaites (15/150=10.00%)<br>*Boerhavia diffusa* L. (19/150=12.67%)<br>*Kalanchoe pinnata* (Lam.) Pers. (24/150=16.00%) |
| | Jaundice | 2 | 41 | *Eclipta alba* (L.) Hassk. (28/150=18.67%)<br>*Hydrocotyle sibthorpioides* Lam. (13/150=8.67%) |
| **Muscular Pain/Fracture** | Bone fracture | 3 | 18 | *Allium sativum* L. (8/150=5.33%)<br>*Blumea sinuata* (Lour.) Merr. (9/150=6.00%)<br>*Ficus sagittata* Vahl (1/150=0.67%) |
| **General Health** | Fever | 9 | 169 | *Andrographis paniculata* (Burm.f.) Wall. ex Nees (5/150=3.33%)<br>*Clerodendrum trichotomum* Thunb. (2/150=1.33%)<br>*Houttuynia cordata* Thunb. (10/150=6.67%) |

| | | | | |
|---|---|---|---|---|
| | | | | *Hydrocotyle sibthorpioides* Lam. (5/150=3.33%)<br>*Justicia adhatoda* L. (3/150=2.00%)<br>*Myristica fragrans* Houtt. (5/150=3.33%)<br>*Ocimum gratissimum* L. (19/150=12.67%)<br>*Ocimum kilimandscharicum* Gurke (1/150=0.67%)<br>*Polygonum odoratum* Lour. (119/150= 79.33%) |
| | Dizziness & Physical Weakness | 4 | 71 | *Aloe barbadensis* Mill. (8/150=5.33%)<br>*Lagenaria siceraria* (Molina) Standl. (2/150=1.33%)<br>*Phyllanthus niruri* L. (2/150=1.33%)<br>*Eclipta alba* (L.) Hassk. (59/150=39.33%) |
| | Increase appetite | 1 | 7 | *Corchorus capsularis* L. (4.67%) |
| | Headache | 2 | 32 | *Adenanthera pavonina* L. (8/150=5.33%)<br>*Santalum album* L. (24/150=16.00%) |
| | Insomnia | 1 | 5 | *Corchorus capsularis* L. (3.33%) |
| | Increase haemoglobin levels | 2 | 97 | *Eclipta alba* (L.) Hassk. (85/150=56.67%)<br>*Hygrophila auriculata* (Schumach.) Heine (12/150=8.00%) |
| | Toothache | 1 | 1 | *Cyperus rotundus* L. (0.67%) |
| | Anthelminthic | 4 | 98 | *Ananas comosus* (L.) Merr. (12/150=8.00%)<br>*Andrographis paniculata* (Burm.f.) Wall. ex Nees (7/150=4.67%)<br>*Azadirachta indica* A. Juss. (60/150=40.00%)<br>*Nyctanthes arbor-tristis* L. (19/150=12.67%) |
| | Ear pain | 3 | 94 | *Ananas comosus* (L.) Merr. (23/150=15.33%)<br>*Costus pictus* D.Don (56/150=37.33%)<br>*Dracaena trifasciata* (Prain) Mabb. (15/150=10.00%) |
| | Cleans eye dirt | 2 | 39 | *Centella asiatica* (L.) Urb. (19/150=12.67%)<br>*Ocimum sanctum* L. (20/150=13.33%) |
| | Heat stress | 1 | 7 | *Corchorus capsularis* L. (4.67%) |
| **Respiratory disorders** | Asthma | 2 | 4 | *Leucas aspera* (Willd.) Link (1/150=0.67%)<br>*Plumeria alba* L. (3/150=2.00%) |
| | Cough & Cold | 9 | 272 | *Aegle marmelos* (L.) Corrêa (2/150=1.33%)<br>*Clitoria ternatea* L. (30/150=20.00%)<br>*Euphorbia neriifolia* L. (11/150=7.33%)<br>*Hydrocotyle sibthorpioides* Lam. (5/150=3.33%)<br>*Justicia adhatoda* L. (12/150=8.00%)<br>*Ocimum gratissimum* L. (15/150=10.00%)<br>*Ocimum sanctum* L. (50/150=33.33%)<br>*Ocimum tenuiflorum* L. (59/150=39.33%)<br>*Polygonum odoratum* Lour. (88/150= 58.67%) |
| | Expectorant | 5 | 52 | *Euphorbia neriifolia* L. (16/150=10.66%)<br>*Hydrocotyle sibthorpioides* Lam. (3/150=2.00%)<br>*Justicia adhatoda* L. (15/150=10.00%)<br>*Ocimum kilimandscharicum* Gurke (3/150=2.00%)<br>*Zingiber officinale* Roscoe (15/150=10.00%) |
| **Sexual disorders** | Leukorrhea | 1 | 5 | *Cyperus rotundus* L. (3.33%) |
| **Other** | Delayed onset of lactation | 2 | 9 | *Chrysanthemum spp.* (2/150=1.33%)<br>*Cyanthillium cinereum* (L.) H.Rob. (7/150=4.67%) |
| | Dog bite | 1 | 14 | *Carica papaya* L. (9.33%) |
| | Tetanus | 1 | 12 | *Alternanthera brasiliana var. villosa* (Moq.) Kuntze (8.00%) |
| | Chickenpox | 1 | 25 | *Azadirachta indica* A. Juss. (16.67%) |

| | | | |
|---|---|---|---|
| | Typhoid | 4 | 45 | *Clerodendrum trichotomum* Thunb. (6/150=4.00%)<br>*Euphorbia neriifolia* L. (19/150=12.67%)<br>*Hydrocotyle sibthorpioides* Lam. (12/150=8.00%)<br>*Polygonum odoratum* Lour. (8/150=5.33%) |
| | Piles | 2 | 33 | *Mikania cordata* (Burm.f.) B.L.Rob (30/150=20.00%)<br>*Portulaca oleracea* L. (3/150=2.00%) |

## Conclusion

The present study is the first approach to document and quantitatively assess the folk usage of medicinal plant species employed by Bishnupriya Manipuri community across four districts of Tripura, India namely, Sipahijala, Dhalai, Unakoti, and North Tripura. The present research holds some major and long-lasting implications for the preservation of knowledge, conservation of plant species, and even for future drug discovery. A total of 83 ethnobotanical floral species, from 41 different plant families, are documented here. The documentation of traditional medicinal practices helps to preserve valuable ethnomedicinal knowledge from being lost. Identification of the most frequently used and culturally important plants via quantitative methodologies aids targeted conservation, and guides exploration of their pharmacological potentials. Lastly, the traditional use of certain species provides valuable insights for selecting plants in the drug discovery process, as ethnobotanical leads are very effective and trustworthy. The study strongly emphasizes the need for further scientific investigations to validate the reported uses and therapeutic effects of the plant species, involving phytochemical screening, compound isolation, identification, as well as assessment of biocompatibility and toxicity.

## Declarations

**List of abbreviations:** BM = Bishnupriya Manipuri; FL = fidelity level; FUV = family use value; IFC= informant consensus factor; Nur= number of use reports; RFC = relative frequency of citation; UV = use value.

**Ethics approval and consent to participate**: The data were concerning confidentiality and consent. All the informants were made aware of the purpose of the study prior to their involvement.

**Consent for publication:** Not applicable

**Availability of data and materials:** All data is available within the article and in the accompanying appendices.

**Competing interests:** The authors declare no conflict of interest.

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**Author contributions:** Chayan Dhar: study design, ethnobotanical surveys, methodology, manuscript writing, data analysis, Mayuri Bhagawati: interpretation of results and review editing, supervision, manuscript improvement and review editing. Barnita Debnath: manuscript writing, methodology, Badal Kumar Datta: manuscript improving and review editing and Supervising. All authors read, reviewed and approved the final version of the manuscript.

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## Literature cited

Bano A, Ahmad M, Hadda, TB, Saboor A, Sultana S, Zafar M, Khan MPZ, Ashraf MA. 2014. Quantitative ethnomedicinal study of plants used in the Skardu valley at high altitude of Karakoram-Himalayan range, Pakistan. Journal of Ethnobiology and Ethnomedicine 10: 43.

Basson DC, Teffo TK, Risenga IM. 2022. A phytochemical screening, antioxidant and antibacterial activity analysis in the leaves, stems and roots of Portulacaria afra. Journal of Herbmed Pharmacology 12(1): 109-117.

Bhagawati M, Dhar C, Sharma D, Datta BK. 2024. Medicinal plants used by the native inhabitants of Nandikeswar, Jamugurihat in the Sonitpur district of Assam, India. Journal of Bioresources 12(1): 48–56

Bhoi, DK, Ahirwar RK. 2025. Ethnopharmacological survey and GC-MS profiling of medicinal plants in Surguja district, Chattisgarh: bridging traditional knowledge and bioactive compound discovery. Pharmacological Research-Natural Products, 6: 100188.

Bhardwaj Y, Bhuyan B, Pulicherla Y, Nagayya S, Cheemanapalli S, Taboh M, Yehi T. 2025. Ethnomedicinal plants used for gastro-intestinal disorders (GIDs) by the tribal communities of Arunachal Pradesh (Eastern Himalayas), India: A comprehensive review. Ethnobotany Research and Applications 30: 1-39.

Deb DB. The Flora of Tripura State. Today and tomorrow's Printers and Publishers, New Delhi; c1983.

Debbarma M, Pala NA, Kumar M, Bussmann RW. 2017. Traditional knowledge of medicinal plants in tribes of Tripura in northeast, India. African Journal of Traditional, Complementary and Alternative Medicines 14(4): 156-168.

Devi KY, Devi MH, Singh PK. 2017. Survey of medicinal plants in Bishnupur District, Manipur, North Eastern India. International Journal of Applied Research 3(4): 462-471.

Devi KY, Singh SS, Devi MH, Dhabe AS, Singh PK. 2020. Ethno medicinal plants from Bishnupur district, Manipur, north eastern India. BIOINFOLET-A Quarterly Journal of Life Sciences 17(4a): 602-608.

Dhar C, Bhagawati M, Datta BK. 2025. Documentation of ethnomedicinal flora utilized by inhabitants of Barjala area of Agartala, West Tripura, Tripura, India. Journal of Medicinal Plant Studies 13(2): 01-07.

Heinrich M, Ankli A, Frie B, Weimann C, Sticher O. 2009. Medicinal plants in Mexico: Healers' consensus and cultural importance. Journal of Social Science & Medicine 47(11): 1859-1871.

Jha KK, Jha R. 2023. Uncodified system of animal health care in Eastern Himalaya and Indo-Burma hotspots of India: plant use and their distribution. Nova Geodesia 3(4): 155-155.

Kunwar RM, Nepal BK, Kshhetri HB, Rai SK, Bussmann RW. 2010. Ethnomedicine in Himalaya: a case study from Dolpa, Humla, Jumla and Mustang districts of Nepal. Journal of Ethnobiology and Ethnomedicine 2(1): 27.

Ministry of Environment, Forest and Climate Change, Government of India. 2023. Indian forest report 2023. Forest Survey of India. isfr_book_eng-vol-1_2023.pdf

Muthukrishnan S, Ramachandran A. 2025. Ethnobotanical study of the medicinal plants used by rural communities in the foothill villages of the Alagar Hills region, Eastern Ghats, Tamil Nadu, India. Ethnobotany Research and Applications 30: 1-41.

Najem M, Daoudi A, Bouiamrine EH, Ibijbijen J, Nassiri L. 2019. Biodiversity of poisonous medicinal plants solicited in the traditional phytotherapy of the central Middle Atlas-Morocco. Ethnobotany Research and Applications, 18: 1-22.

POWO, 2025, Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. http://www.plantsoftheworldonline.org/ [Accessed on 15.01.2025].

Rana MP, Sohel, MSI, Akhter S, Islam MJ. 2010. Ethno-medicinal plants use by the Manipuri tribal community in Bangladesh. Journal of Forestry Research, 21(1): 85-92.

Reang M, Banik B, Debbarma S, Datta BK. 2023. Quantitative assessment of ethnobotanical resources and medicinal plants utilization patterns in Tripura, India. Journal of Bioresources, 10(1): 14-24.

Reang M, Banik B, Majumdar K, Datta BK. 2022. Original Research Article Quantitative Assessment of Bioresource Utilization Patterns by the Ethnic Communities of Tripura, India. Journal of Bioresearch, 1(1): 27-48.

Reang M, Banik B, Majumdar K, Datta BK. 2022. Original Research Article Quantitative Assessment of Bioresource Utilization Patterns by the Ethnic Communities of Tripura, India. Journal of Bioresearch 1(1): 27-48.

Singh B, Singh B, Kishor A, Singh S, Bhat MN, Surmal O, Musarella CM. 2020. Exploring plant-based ethnomedicine and quantitative ethnopharmacology: Medicinal plants utilized by the population of Jasrota Hill in Western Himalaya. Sustainability 12(18): 7526.

Singh K, Chandu KD, Thattantavide A, Gour VS, Gairola S, Kumar A. 2024. Indigenous ecological knowledge and the usage of medicinal plants in Polavaram Mandal of Andhra Pradesh, India. Ethnobotany Research and Applications, 29(65): 1-27.

Singh SS. 2024. Ethnobotanical studies of medicinal plants in tribal communities of Manipur. World Journal of Pharmaceutical Research 12(21): 946-964.

Sinha S, Rajkumari P, Sinha S, Lohar BP. 2024. Sustainable livelihood prospects: Bishnupriya Manipuri ethnic community's handloom and handicrafts in Assam. Educational Administration: Theory and Practice 30(5): 9308-9313.

Sinha S, Sinha P, Acharjee S, Das D. 2023. Ethnomedicinal Knowledge of Bishnupriya Manipuri Community of Unakoti District of Tripura, North East India. The American Journal of Science and Medical Research 9(2): 1-4.

Sumant S, Baidya S, Singha D, Thakur B, Bhuyan A, Hazarika, NJ, Gogoi N, Prakash A, Devi A. 2025. Plant bioresource dependency and climate perspectives in tropical forests of the Eastern Himalaya. Ethnobotany Research and Applications 30(3): 1-27.

Hasan GM, Hossain D, Ahmed M, Jui NN, Mia MF, Malek I, Rahmatullah M. 2014. Traditional phytotherapy among the Manipuri tribe in Kamalganj Upazila of Moulvibazar district, Bangladesh. American-Eurasian Journal of Sustainable Agriculture 8(9): 41-50.

WHO (World Health Organisation) 2013. WHO Traditional Medicine Strategy: 2014-2023.Genera of World Health Organization.