



RESEARCH ARTICLE

Medicinal plants used by the native inhabitants of Nandikeswar, Jamugurihat in the Sonitpur district of Assam, India

Mayuri Bhagawati*, Chayan Dhar, Dipan Sarma, Badal Kumar Datta

Plant Taxonomy and Biodiversity Laboratory, Department of Botany, Tripura University, Suryamaninagar – 799022, Tripura, India.

Corresponding author email: mayuribot13@gmail.com

Article No.: MBJBR114; Received: 20.08.2024; Peer-reviewed: 10.09.2024; Accepted: 10.09.2024; Published: 30.09.2024

Doi: <https://doi.org/10.5281/zenodo.14800562>

Abstract

Northeast India is a part of East Himalaya and Indo-Burma Biodiversity Hotspot region with rich floristic elements and traditional knowledge. Nandikeswar is a village in Sonitpur district of Assam where the inhabitants till use and preserve their traditional knowledge of native medicinal flora that they acquired from their ancestors. Present study documents medicinal plants and associated traditional knowledge used for treating various ailments of their localities. A total 13 informants including 6 traditional healers (Bej) and 7 elderly people of the village were interviewed. Ethnomedicinal data collected were analyzed and presented in graphs and tabulated form. This study recorded 75 species of medicinal plants belonging to 51 families which were found to be utilized by respondents for treating various ailments. Highest application of medicinal plants was recorded for skin problems (14%), which is followed by cough-cold (11%), hair problems (7%), jaundice (6.66%), etc. Majority of the species were found belonging to Euphorbiaceae, Lamiaceae family with 5 species each which is followed by Zingiberaceae (4), Fabaceae (4), Rutaceae (3), Apocynaceae (3), Apiaceae, Phyllanthaceae, Poaceae, Rubiaceae, Combretaceae with 2 species each. Herbaceous species were found recorded in maximum number which is followed by trees, shrubs and climbers while majority of the herbal treatment employs fresh leaves.

Keywords: Assam; Ethnomedicine; Medicinal plants; Nandikeswar; Northeast India; Sonitpur; Traditional healers.

1. Introduction

Plants are the most essential source of herbal medicines used for the treatments of various ailments among the local traditional healers (Tariq et al., 2015). In the earliest time, medicinal plants were abundant, mainly in forest areas. However, the situation has been reversed in some areas due to the over-exploitation leading to loss of species diversity. The World Health Organization (WHO) estimates that up to 80% of the world's population relies on traditional medicines and that 60% of rural Indians utilize herbal remedies for their local healthcare needs (Sarma and Datta, 2021). Only 10% of the medicinal plants found in India are distributed along open fields, horticultural fields, squatter land, and in and around freshwater bodies. Around 90% of India's medicinal plants are found in woodland (Mazid et al., 2012). Hence, the extinction of each plant species could result in eliminating age-old traditional knowledge regarding curing of diseases from that particular medicinal plant species. The traditional uses of many medicinal plants by different tribes may be regarded as the main knowledge for scientific documentation studies. Therefore, in the last few years, traditional knowledge of medicinal plants has gained momentum for indepth research and the development of other value-added products (Phukan et al., 2016). Also, there is a realization not only the need for preservation of flora but also protection of the secret healing knowledge of the traditional healers. Northeast India is referred to as richest reservoir of plant diversity. This region consists of 8 states i.e., Manipur, Mizoram, Sikkim, Tripura, Assam, Meghalaya, Nagaland and Arunachal Pradesh (Dutta and Dutta, 2005). This region falls under Himalaya and Indo-Burma Biodiversity Hotspot which is one of the 36 recognized biodiversity hotspots and thus have a great variety and variability of climate and biodiversity (Hrdina and Romportl, 2017). Among them, Assam is situated in a unique geographical location and comprises tropical forests. Assam is the

second largest state of northeast India, situated between 22°19'–28°16' N latitude and 89°42'–96°30' E longitude covering 78,438 sq.km area of which 26,832 sq.km area is covered by forest. Nandikeswar village is situated in the Na-Dua subdivision of Sonitpur district in Assam, India. The village also supports a diverse range of flora adapted to the ecosystem of Assam. Present study documents medicinal plants and associated traditional knowledge of the Nandikeswar village, Jamugurihat, Assam.

2. Materials and methods

2.1. Study area

Nandikeswar village is located in the Na-Duar subdivision of Sonitpur district in Assam, India (Figure 1). It has a total geographical area of 202.86 hectares, and falls within a geographical coordinates 26.8557° N and 92.7373° E. Nandikeswar has a total population of 1,022 peoples with rich heritage of traditional knowledge system. This area is a part of the greater landscape of Assam which includes plains, river, and forested areas. The village experiences a tropical monsoon climate with significant rainfall, particularly during the monsoon season from June to September. The village has a population primarily comprising Assamese speaking people belonging to various ethnic communities indigenous to Assam.

2.2. Demographic profile of the informants

A total of 6 traditional healers (Bej) and 7 elderly informants were interviewed for documentation of traditional medicinal plant knowledge for treatment of ailments/diseases prevalent in their villages. More number of elderly age group of 60-70 years old were targeted and interviewed. The detailed demographic profile of the

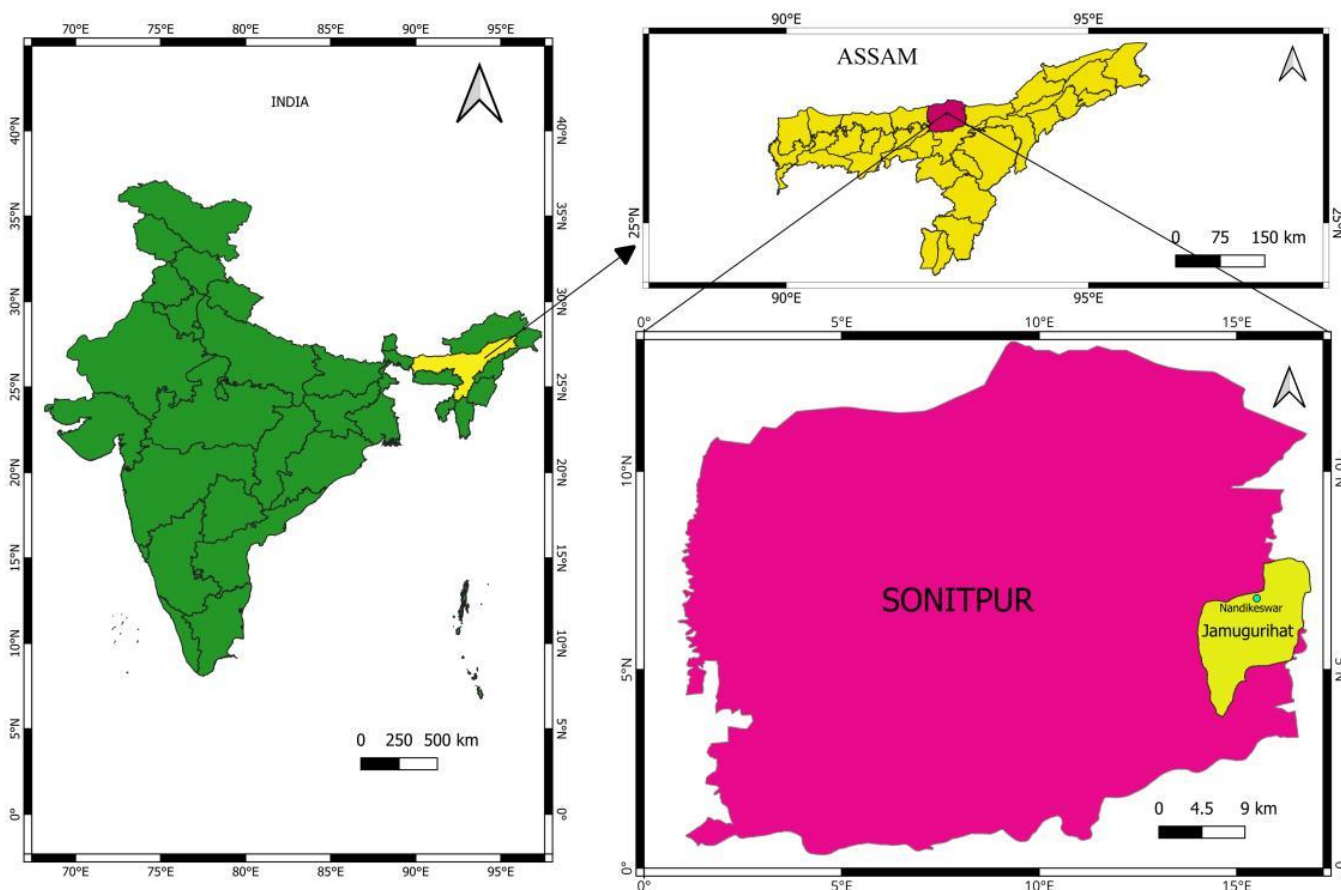


Figure 1. Map showing Nandikeswar, Jamugurihat area in the Sonitpur district, Assam.

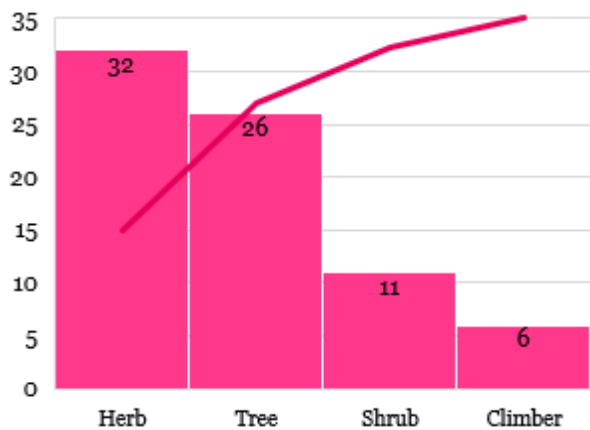


Figure 2. Habit category of medicinal plants in Nandikeswar area, Jamugurihat, Sonitpur, Assam.



Figure 3. Percentage of plant parts harvested for medicinal uses

inhabitants of Nandikeswar area were recorded during field visit which is mentioned in [Table 1](#).

2.3. Sample size, field interview and data collection

In the present study, 6 traditional healers (Bej) and 7 elderly informants were interviewed from November, 2022 to March, 2023 in Nandikeswar area for recording the ethnomedicinal plants using structured questionnaire format and focused group discussion. Information related to utilization of medicinal plants, part harvest,

formulation and ailments treated were recorded in the field notebook. The herbarium samples were collected for each plant species and were identified by consulting standard literatures and online sources (www.worldfloraonline.org). The accepted names were verified in the standard online sources (POWO, 2024). Voucher specimens bearing field collection numbers were deposited in the herbarium of Department of Botany, TU, Tripura for future references.

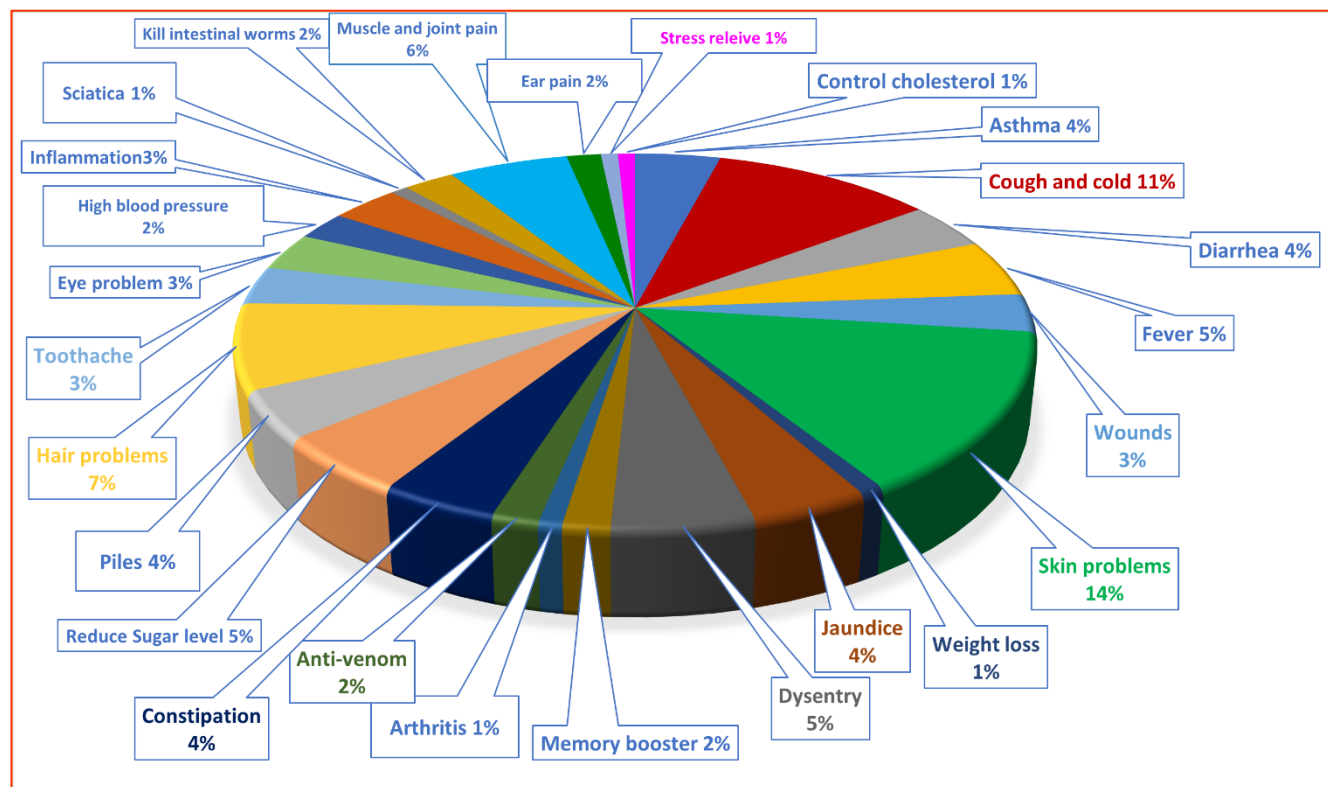


Figure 4. Chart showing percentage of ethnomedicine utilization against specific health issues by inhabitants of Nandikeswar, Jamugurihat, Sonitpur district, Assam.

3. Result and discussion

The present study has recorded 75 species of ethno-medicinally useful plants belonging to 51 families reported by the traditional healers and local informants of Nandikeswar area in Jamugurihat area of Sonitpur district, Assam, India (Table 2). Of the total 75 species recorded, 63 species are reported to be dicots while 12 species are reported as monocots. Highest number of species were reported under herbaceous category (42.67%) which is followed by trees, shrubs and climbers (Figure 2). A variety of plant parts were reported to be utilized which includes leaves, rhizome, flowers, fruits, some other parts like bulbs, tubers, barks, gums, latex, seeds, and even the whole plant parts were found to be used for treating variety of diseases including cough, cold, fever, jaundice, diarrhea, dysentery, constipation and many other stomach issues, skin problems, allergies, hair related issues, asthma, arthritis, different kinds of cuts and wounds, sciatica, increased sugar and cholesterol levels etc. Details of plant parts used and diseases treated are presented in Figure 3 and 4.

From the present study, it was observed that in majority of the cases more than one part of the plants were used by the traditional healers while in some cases, only single plant part was reported to be utilized. The use of multiple plant parts of single species was found in case of 22 medicinally important species (29.33%) while the use of single plant part was found to be 14.66%, 9.3%, 4%, 1.3% for leaves, fruit, rhizome and flower respectively. The whole plant parts of 16 species (21.33%) were observed to be employed in traditional medicine while, 37 plant species (49.33%) were found to be used in more than one plant part during treatment of ailments. Highest number of parts used were reported for skin related problems (14%) which is followed by cough and cold (11%), hair problems (7%) and others.

The Assamese communities of Nandikeswar area was found have rich indigenous knowledge related to utilization of plants and their healing properties (Figure 5). The most commonly used plant parts were leaf, root, fruit, bark, rhizome, flower, seed, stem, latex, bulb and sometimes entire plant for various treatments using 75 species of ethnomedicinal plant. The common ailments treated by the healers are: fever, cough, diabetes, jaundice, asthma, arthritis, skin ailments,

hair problems, various stomach related problems like diarrhea, dysentery, constipation and other ailments. Most of the medicinal plants used by the people of Assam were also reported in the previous ethnomedicinal plant literature from Gohpur sub-subdistrict of Biswanath District (Das and Pegu, 2023), while Choudhury et al (2010), Buragohain et al (2007) and Gogoi et al (2021) also reported ethnomedicinal plants used for treatment of skin ailments and other diseases prevalent in the Brahmaputra valley of Assam. Some of the important medicinal plant species are found to be threatened due to socioeconomic development, over harvesting of the medicinal plants from forest areas, uncontrolled deforestation which lead to habitat destruction. Assamese community living in the Nandikeswar area are rich in traditional knowledge related to utilization of medicinal plants (Kadam et al., 2020).

4. Conclusion

Present study revealed 75 species of medicinal plants belonging to 51 plant families used for the treatment of cold, cough, fever, hair issues, etc. and even fatal health issues like asthma, high blood pressure, diabetes, acute stomach issues utilized by herbal healers of Nandikeswar area. Some of the species and unique knowledge system need conservation and protection for sustainable future utilization. Findings of present study confers further opportunities for drug discovery following rigor scientific validation tools and methods.

Acknowledgments

The authors are indebted to the native people and traditional healers of Nandikeswar, Sonitpur district, Assam for sharing necessary information regarding their traditional knowledge on medicinally valuable plant species. The authors are extremely thankful to the Head, Department of Botany for providing all the necessary facilities. The first author is grateful to Tripura University for financial assistance.

Author contributions

The first author (MB) conducted the interviews, collected data and prepared the draft manuscript. MB and CD analysed the data and created the figures. DS assisted in preparation of initial draft manuscript. BKD is Ph.D. supervisor who conceptualize the idea and finalized the draft manuscript.

Conflict of interest

The authors have no conflict of interest.

Table 1. Demographic profile of the informants interviewed.

Indicators	Description	Number	Percentage
Age	30-40	1	7.69
	40-50	2	15.38
	50-60	3	23.08
	60-70	5	38.46
	70-80	1	7.69
	80+	1	7.69
Education	Illiterate	5	38.46
	Primary	2	15.38
	Secondary	5	38.46
	Senior secondary	1	7.69
Gender	Male	10	76.92
	Female	3	23.08
Locality	Rural area	13	100
Occupation	Traditional healer (Bej)	6	46.15
	Housewife	3	23.08
	Business/Entrepreneur	1	7.69
	Retired Teacher	1	7.69
	Farmer	2	15.38



Figure 5 (A-R). Medicinal plants used by inhabitants of Nandikeswar, Jamugurihat, Sonitpur, Assam for treatment of various diseases. **A.** *Magnolia champaca* (L.) Baill. ex Pierre; **B.** *Euphorbia nerifolia* L.; **C.** *Alstonia scholaris* (L.) R.Br.; **D.** *Houltuyenia cordata* thumb.; **E.** *Acalypha indica* L.; **F.** *Moringa oleifera* Lam.; **G.** *Terminalia bellirica* (Gaertn.) Roxb.; **H.** *Peperomia pellucida* (L.) Kunth; **I.** *Tinospora cordifolia* (Willd.) Miers; **J.** *Murraya koenigii* (L.) Spreng.; **K.** *Kalanchoe pinnata* (Lam.) Pers.; **L.** *Ananas comosus* (L.) Merr.; **M.** *Euphorbia hirta* L.; **N.** *Catharanthus roseus* (L.); **O-P.** Traditional herbalist of Nandikeswar, Jamugurihat; **Q.** *Cannabis sativa* L.; **R.** *Clitoria ternatea* L.

Table 2. Detailed information about the ethnomedicinal plants used by local healers of the Nandikeswar area of Jamugurihat, Sonitpur district, Assam.

SN	Scientific Name	Family	Plant types	Local /Assamese Name	Common Name	Used part	Local Uses
1.	<i>Acalypha indica</i> L. PN/35, 08-12-2023; Nandikeswar	Euphorbiaceae	Herb	Mukuta-monjuri	Indian nettle	Leaves, root	Wound healing, arthritis, anti-venom
2.	<i>Acorus calamus</i> L. PN/47, 12-01-2024; Nandikeswar	Acoraceae	Herb	Boch	Sweet flag	Leaves	Used in diarrhea & dysentery
3.	<i>Aegle marmelos</i> (L.) Corrêa PN/60, 28-01-2024; Nandikeswar	Rutaceae	Tree	Bel	Bael/Bilwa	Fruit	Diabetes, control body temperature.
4.	<i>Allium sativum</i> L. PN/36, 08-12-2023; Nandikeswar	Amaryllidaceae	Herb	Nohoru	Garlic	Bulb	Used to eat to control blood pressure level
5.	<i>Aloe vera</i> (L.) Burm.f. PN/54, 12-01-2024; Nandikeswar	Asphodelaceae	Herb	Sal-kuwori	Aloe	Entire plant	Induce skin brightness, dry skin treatment, used in hairs.
6.	<i>Alpinia galanga</i> (L.) Willd. PN/45, 26-12-2023; Nandikeswar	Zingiberaceae	Herb	Bogi tora	Siamese Ginger	Entire plant	Stomach disorders, reduce dandruff, gastric problems.
7.	<i>Jatropha curcas</i> L. PN/100, 12-03-2024; Nandikeswar	Euphorbiaceae	Shrub	Bhotera	Poison nut, Barbados nut	Entire plant	Dysentery
8.	<i>Alstonia scholaris</i> (L.) R.Br. PN/61, 28-01-2024; Nandikeswar	Apocynaceae	Tree	Chatiana	Devil Tree, Scholar Tree.	Leaves	Cure skin diseases, improve digestive power.
9.	<i>Alternanthera sessilis</i> (L.) DC. PN/91, 09-03-2024; Nandikeswar	Amaranthaceae	Herb	Mati-kanduri	Dwarf copper leaf, Brazilian spinach.	Entire plant	Cure night blindness, juice is beneficial to eye, helps in digestion.
10.	<i>Ananas comosus</i> (L.) Merr. PN/37, 08-12-2023; Nandikeswar	Bromeliaceae	Herb	Mati-kathal	Pineapple	Fruit	Reduce gastric problems, relieving constipation.
11.	<i>Andrographis paniculata</i> (Burm.f.) Nees PN/85, 27-02-2024; Nandikeswar	Gentianaceae	Shrub	Chirata tita	Chiretta	Leaves, Flowers.	Fever, cough, cold, boosting immunity, controls blood sugar
12.	<i>Annona squamosa</i> L. PN/68, 28-01-2024; Nandikeswar	Annonaceae	Tree	Atlas	Sugar apple	Leaves, Bark	Juice is used in hairs and used in infected skin.
13.	<i>Asparagus racemosus</i> Willd. PN/97, 09-03-2024; Nandikeswar	Asparagaceae	Herb	Sat mul	Shatavari, Shatamull	Entire plant	Stomach problems, constipation.
14.	<i>Averrhoa carambola</i> L. PN/73, 28-01-2024; Nandikeswar	Oxalidaceae	Tree	Kordoi	Star-fruit	Fruit, Leaves	Cure inflammation of skin, chickenpox.
15.	<i>Azadirachta indica</i> A.Juss. PN/29, 15-11-2023; Nandikeswar	Meliaceae	Tree	Maha-nim	Neem	Leaves, Seed	Infection, skin diseases, dental disorders.
16.	<i>Bacopa monnieri</i> (L.) Wettst. PN/55, 12-01-2024; Nandikeswar	Plantaginaceae	Herb	Brahmi	Brahmi, Water hyssop	Leaves	Good for concentration, cures cold cough, increase memory power, purifies blood, hair growth, helps to rejuvenate skin.
17.	<i>Bambusa balcooa</i> Roxb. PN/28, 15-11-2023; Nandikeswar	Poaceae	Tree	Bhaluka bah	Female Bamboo	Leaves, Shoot	Cough, skin inflammation.
18.	<i>Bombax ceiba</i> L. PN/32, 08-12-2023; Nandikeswar	Malvaceae	Tree	Simalu	red silk-cotton tree	Bark, Leaves, Root.	Reduce pimples, piles, purify blood.
19.	<i>Calotropis gigantean</i> (L.) Dryand. PN/72, 28-01-2024; Nandikeswar	Apocynaceae	Shrub	Akon	Crown flower	Leaves	Treats diabetes, diarrhoea, helps to reduce skin blemishes, cures ear pain, antidote to snake venom, treats toothache

20.	<i>Cannabis sativa</i> L. PN/75, 28-01-2024; Nandikeswar	Cannabaceae	Shrub	Bhaang-gos	Marijuana	Leaves, stem	skin burns, pain. Asthma.
21.	<i>Carica papaya</i> L. PN/78, 15-02-2024; Nandikeswar	Caricaceae	Tree	Omita	Papaya	Fruit, Leaves, Gums.	The gums applied on the infected skin, burn area, kills ringworm.
22.	<i>Catharanthus roseus</i> (L.) G.Don PN/83, 15-02-2024; Nandikeswar	Apocynaceae	Shrub	Nayantora	<i>Periwinkle</i>	Flowers, Leaves.	Blood dysentery, high blood pressure, sore throat.
23.	<i>Centella asiatica</i> (L.) Urb. PN/66, 28-01-2024; Nandikeswar	Apiaceae	Herb	Bor-manimuni	Indian Pennywort	Entire plant	Cure dysentery, improve memory, helpful in nerve diseases, reduce high blood pressure.
24.	<i>Citrus x limon</i> (L.) Osbeck PN/101, 12-03-2024; Nandikeswar	Rutaceae	Tree	Gul Nemu	Lemon	Fruit, Leaves	Juice used in dry skin, pimples and also orally taken.
25.	<i>Clitoria ternatea</i> L. PN/69, 28-01-2024; Nandikeswar	Fabaceae	Climber	Aparajita	butterfly pea	Leaves, Flower, Root	Reduce ear pain, kills ringworms, diabetes.
26.	<i>Colocasia esculenta</i> (L.) Schott PN/65, 28-01-2024; Nandikeswar	Araceae	Herb	Kola kosu	Taro	Corms, runners	Corms & runners are consumed to treat piles & tonsillitis.
27.	<i>Commelina benghalensis</i> L. PN/46, 26-12-2023; Nandikeswar	Commelinaceae	Herb	Kona shimolu	Benghal dayflower	Leaves, Flowers.	Used in burns, inflammation.
28.	<i>Curcuma caesia</i> Roxb. PN/76, 28-01-2024; Nandikeswar	Zingiberaceae	Herb	Kalia Haladi	Black turmeric	Rhizome	Wounds, toothache, skin problems, induce brain function.
29.	<i>Curcuma longa</i> L. PN/64, 28-01-2024; Nandikeswar	Zingiberaceae	Herb	Halodhi	Turmeric	Tuberous, rhizomes or underground stem	Used to control cholesterol level, cuts or wounds, skin infections
30.	<i>Cynodon dactylon</i> (L.) Pers. PN/87, 27-02-2024; Nandikeswar	Poaceae	Herb	Dubari bon	Bermuda grass	Leaves	Chronic diarrhea, preventing hair loss, useful for kidney stone.
31.	<i>Datura stramonium</i> L. PN/86, 27-02-2024; Nandikeswar	Solanaceae	Shrub	Kola-dhatura	Jimson weed	Fruit, Leaves	Used in toothache, Fruit juice is used to treat dandruff & falling hair.
32.	<i>Dendrocnide sinuata</i> (Blume) Chew PN/77, 28-01-2024; Nandikeswar	Urticaceae	Tree	Sorat	tree nettle	Leaves, Roots.	Fever, malaria, swelling
33.	<i>Dillenia indica</i> L. PN/84, 27-02-2024; Nandikeswar	Dilleniaceae	Tree	Ou-tenga	Elephant apple	Fruit	Reduce diabetes, bad odour from the mouth.
34.	<i>Dioscorea alata</i> L. PN/71, 28-01-2024; Nandikeswar	Dioscoreaceae	Herb	Kath alu	Purple yam	Tuber, Leaves	Kill stomach worms, reduce weakness.
35.	<i>Drymaria cordata</i> Willd. ex Schult. PN/92, 09-03-2024; Nandikeswar	Caryophyllaceae	Herb	Laijabori	Chickweed	Entire plant	Fever, stomach ache
36.	<i>Eclipta prostrata</i> Lour. PN/79, 15-02-2024; Nandikeswar	Asteraceae	Herb	Kehraj	False daisy	Entire plant	Kills worms of the gut, reduce fever, cure pains & jaundice, promote growth of hair.
37.	<i>Euphorbia hirta</i> L. PN/95, 09-03-2024; Nandikeswar	Euphorbiaceae	Herb	Gakhiroti Bon	Asthma weed	Leaves, stem	Asthma, cough.
38.	<i>Euphorbia nerifolia</i> L. PN/30, 15-11-2023; Nandikeswar	Euphorbiaceae	Shrub	Hiju	Indian Spurge Tree	Latex	Asthma, pimples, muscle pain
39.	<i>Ferula assa-foetida</i> L. PN/63, 28-01-2024; Nandikeswar	Apiaceae	Herb	Hing	Devil's Dung	Entire plant	Relieve stomach ache, boost active digestion.
40.	<i>Ficus religiosa</i> L. PN/90, 27-02-2024; Nandikeswar	Moraceae	Tree	Ahot	Peepul, Sacred Fig	Leaves, Fruits	Maintain blood sugar level, improving skin complexion.
41.	<i>Garcinia morella</i> (Gaertn.) Desr. PN/96, 09-03-2024; Nandikeswar	Clusiaceae	Tree	Kuji thekera	Indian Gamboge	Fruits, leaves	Dysentery, stomach problems.

42.	<i>Glycyrrhiza glabra</i> L. PN/74, 28-01-2024; Nandikeswar	Fabaceae	Shrub	Jesthamadhu	liquorice	Leaves, Rhizomes.	Jaundice, allergies, paralysis.
43.	<i>Hellenia speciosa</i> (J.Koenig) S.R.Dutta PN/99, 12-03-2024; Nandikeswar	Costaceae	Herb	Jomlakhuti	Crepe Ginger	Leaves, stem	Treat inflammation, pain.
44.	<i>Houttuynia cordata</i> Thunb. PN/82, 15-02-2024; Nandikeswar	Saururaceae	Herb	Masundari	Fishwort, Fishmint, Heart leaf	Entire plant	Used for constipation, weight loss, healing skin, reduce sugar blood level, helps in allergies.
45.	<i>Hydrocotyle sibthorpioides</i> Lam. PN/94, 09-03-2024; Nandikeswar	Araliaceae	Herb	Haru-manimuni	Lawn marsh pennywort	Aerial parts	Used in dysentery, jaundice, itching.
46.	<i>Kalanchoe pinnata</i> (Lam.) Pers. PN/48, 12-01-2024; Nandikeswar	Crassulaceae	Herb	Dupor tenga	Air plant, Life Plant, Miracle leaf.	Entire plant	Suppresses coughs, relieves pain, prevents gastric ulcers, cure piles.
47.	<i>Lawsonia inermis</i> L. PN/39, 26-12-2023; Nandikeswar	Lythraceae	Tree	Jetuka	Henna	Leaves	Reduce hair loss, used in smallpox, burns.
48.	<i>Leucas aspera</i> (Willd.) Link PN/40, 26-12-2023; Nandikeswar	Lamiaceae	Herb	Durun bon	Drona puspi	Flowers, Leaves	Used to treatment for snakebite, used in cold & cough, chronic malaria & Asthma.
49.	<i>Magnolia champaca</i> (L.) Baill. ex Pierre PN/98, 12-03-2024; Nandikeswar	Magnoliaceae	Tree	Titasopa	Champaca	Seed, Flower, Leaves	Diarrhea, cough, Stress relieving.
50.	<i>Mentha spicata</i> L. PN/93, 09-03-2024; Nandikeswar	Lamiaceae	Herb	Podina	Mint	Leaves	Cure kidney problem, urinary problems, stomach pain, gall bladder problems.
51.	<i>Mimosa pudica</i> L. PN/89, 27-02-2024; Nandikeswar	Fabaceae	Herb	Lajuki lota	Touch- me-not	Entire plant	Cure sinus, wounds.
52.	<i>Moringa oleifera</i> Lam. PN/62, 28-01-2024; Nandikeswar	Moringaceae	Tree	Sojina	Drumstick tee	Entire plant	Reduce diabetes, Joint pain.
53.	<i>Mucuna pruriens</i> (L.) DC. PN/81, 15-02-2024; Nandikeswar	Fabaceae	Climber	Bandar kekua	Velvet bean	Seed, Pod	Help to maintain nervous system, healthy digestion.
54.	<i>Murraya koenigii</i> (L.) Spreng. PN/27, 15-11-2023; Nandikeswar	Rutaceae	Tree	Narasingha	Curry leaf tree	Leaves	Treating cuts, piles, dysentery
55.	<i>Nyctanthes arbor-tristis</i> L. PN/31, 15-11-2023; Nandikeswar	Oleaceae	Tree	Sewali-phul	Night Blooming Jasmine	Seeds, leaves, flowers.	Sciatica, Relief hair fall, kill stomach worm.
56.	<i>Ocimum tenuiflorum</i> L. PN/43, 26-12-2023; Nandikeswar	Lamiaceae	Shrub	Tulosi	Tulshi, Holy Basil	Leaves	Cough, Fever, eye diseases.
57.	<i>Oroxylum indicum</i> (L.) Benth. ex Kurz PN/42, 26-12-2023; Nandikeswar	Bignoniaceae	Tree	Bhat ghila	Indian Trumpet Flower	Seeds, Leaves	Used to treat intestinal worms, pains, wounds.
58.	<i>Paederia foetida</i> L. PN/88, 27-02-2024; Nandikeswar	Rubiaceae	Climber	Bhebeli-lata/Bhedai lota	Chinese fever vine	Entire Plant	Stomach problem, constipation, used to reduce pains.
59.	<i>Peperomia pellucida</i> (L.) Kunth PN/44, 26-12-2023; Nandikeswar	Piperaceae	Herb	Ponounua	Hog weed	Entire Plant	Improve & protect eyesight, reduce fever, Swelling, cough & Asthma.
60.	<i>Persicaria glabra</i> (Willd.) M.Gómez PN/70, 28-01-2024; Nandikeswar	Polygonaceae	Herb	Bihlongoni	Denseflower Knotweed	Leaves	Used in skin itching.
61.	<i>Piper nigrum</i> L. PN/80, 15-02-2024; Nandikeswar	Piperaceae	Climber	Jaluk	Black Pepper	Seeds, leaves	Reduce toothache, sore throat, cold.
62.	<i>Phlogacanthus thyriformis</i> (Roxb. ex Hardw.) Mabb. PN/53, 12-01-2024; Nandikeswar	Acanthaceae	Shrub	Tita -bahok	Red Nongmangkha	Leaves	Kills ringworm, cough, diabetes.
63.	<i>Phyllanthus acidus</i> (L.) Skeels PN/56, 12-01-2024; Nandikeswar	Phyllanthaceae	Tree	Pora amlokhi	Star gooseberry	Fruit	Treats Diabetes, constipation.
64.	<i>Phyllanthus emblica</i> L. PN/52, 12-01-2024; Nandikeswar	Phyllanthaceae	Tree	Amlokhi	Indian gooseberry	Fruit	Treat Jaundice, Diarrhea.

65.	<i>Pogostemon benghalensis</i> Kuntze PN/51, 12-01-2024; Nandikeswar	Lamiaceae	Herb	Sukloti	Bengal Shrub-Mint	Aerial parts	Stomach problems, reduce blood sugar level.
66.	<i>Ricinus communis</i> L. PN/41, 26-12-2023; Nandikeswar	Euphorbiaceae	Shrub	Era-gos/Era	castor oil plant	Leaves, stem, roots, seeds	Joint pain, backache, muscle ache.
67.	<i>Scleromitron diffusum</i> (Willd.) R.J.Wang PN/49, 12-01-2024; Nandikeswar	Rubiaceae	Herb	Bon jaluk	Wild pepper	Entire plant	Cure itching of skin, ringworm infection, in various stomach related diseases.
68.	<i>Spondias pinnata</i> (L.f.) Kurz PN/50, 12-01-2024; Nandikeswar	Anacardiaceae	Tree	Amora	Hog plum	Leaves, Fruit, root, bark.	Prevent vomiting.
69.	<i>Syzygium cumini</i> (L.) Skeels PN/57, 12-01-2024; Nandikeswar	Myrtaceae	Tree	Jamu	Black plum, Jamun	Fruit	Reduce blood sugar level, cough.
70.	<i>Terminalia bellirica</i> (Gaertn.) Roxb. PN/59, 28-01-2024; Nandikeswar	Combretaceae	Tree	Bhumura	Baheda	Fruits, seed	Cough, piles.
71.	<i>Terminalia chebula</i> Retz. PN/34, 08-12-2023; Nandikeswar	Combretaceae	Tree	Hilikha	black- or chebulicmyrobalan	Fruit	Treat diabetes, sore throat.
72.	<i>Tinospora cordifolia</i> (Willd.) Miers PN/58, 12-01-2024; Nandikeswar	Menispermaceae	Climber	Amar-lata	Heart-leaved moonseed	Entire plant	Used in Jaundice, diabetes.
73.	<i>Vanda coerulea</i> Griff. ex Lindl. PN/33, 08-12-2023; Nandikeswar	Orchidaceae	Climber	Bhatou ful	Blue vanda	Flowers	Flower's juice is used for eye problems; cataract & blindness.
74.	<i>Vitex negundo</i> L. PN/67, 28-01-2024; Nandikeswar	Lamiaceae	Shrub	Pachatia	Chinese chaste tree	Leaves, bark, flower	Joint pain, muscle pain.
75.	<i>Zingiber officinale</i> Roscoe PN/38, 08-12-2023; Nandikeswar	Zingiberaceae	Herb	Ada	Ginger	Rhizome	Used in cough, sore throat, help in digestion.

Reference

Buragohain J and Konwar BK. 2007. Ethnomedicinal plants used in skin diseases by some Indo-Mongoloid communities of Assam. *Asian Journal of Experimental Sciences* 21(2): 281-288.

Choudhury MD, Bawari M, Singha LS. 2010. Some antipyretic ethno-medicinal plants of Manipuri community of Barak valley, Assam, India. *Ethnobotanical leaflets* 2010(1): 4.

Das M and Pegu A. 2023. An ethnobotanical survey of medicinal plants used by Mising tribe of the Gohpur sub-division of Biswanath district, Assam. *Journal of Complementary Medicine Research* 14(2): 233-233.

Dutta BK and Dutta PK. 2005. Potential of ethnobotanical studies in North East India: An overview. *Indian Journal of Traditional Knowledge* 4(1): 7-14.

Gogoi P and Nath N. 2021. Indigenous knowledge of ethnomedicinal plants by the Assamese community in Dibrugarh district, Assam, India. *Journal of Threatened Taxa* 13(5): 18297-18312.

Hrdina A and Romportl D. 2017. Evaluating global biodiversity hotspots – very rich and even more endangered. *Journal of Landscape Ecology* 10(1): 108-115.

Kadam ST and Pawar AD. 2020. Conservation of medicinal plants: A review. *International Ayurvedic Medical Journal* 8: 3890-3895.

Mazid M, Khan TA, Mohammad F. 2012. Medicinal plants of rural India: a review of use by Indian folks. *Indo Global journal of pharmaceutical sciences* 2(3): 286-304.

POWO. 2024. Plant of the World Online. <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:383520-1>. Board of Trustees of the Royal Botanic Gardens, Kew, UK.

Phukan B, Kumar A, Kakoti BB. 2016. Phytochemicals, Central Nervous System and Analgesic Activity of Ethyl Acetate Extract of *Casearia vareca* Roxb. Leaves. *Asian Journal of Chemistry* 28(5): 1127.

Sarma D and Datta BK. 2021. Plants used for jaundice among the ethnic people of north Tripura district (Tripura), Northeast India. *The Journal of Indian Botanical Society* 101(1-2): 82-89.

Tariq A, Mussarat S, Adnan M, Abd_Allah EF, Hashem A, Alqarawi AA, Ullah R. 2015. Ethnomedicinal evaluation of medicinal plants used against gastrointestinal complaints. *BioMed research international* 2015: 892947.

World Flora Online. "World Flora Online." <http://www.worldfloraonline.org/>.

