



Investigation of Medicinal Plants Utilized by Indigenous People in Saptari District of Madhesh Province, Nepal

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Abstract

The study has been carried out to investigate the traditional knowledge of ethnomedicine among the indigenous people of Saptari district, Nepal. The study has identified 83 plant species from 46 plant families overall. Out of the total number of plant species, 41 were domesticated and 42 were wild. Herbs account for the largest percentage of the 83 species of plants, followed by trees (31.32%), shrubs (20.48%), and climbers (6.024%). The Fabaceae family includes up to nine plant species that are used medicinally. Malvaceae, Moraceae, Solanaceae, and Lamiaceae all have four species apiece. From the Amaranthaceae, Apocynaceae, Apiaceae, and Poaceae plant families, three plant species were noted. From the Rutaceae, Amaryllidaceae, Araceae, Meliaceae, Brassicaceae, Zingiberaceae, Euphorbiaceae, Myrtaceae, and Combretaceae plant families, two species are noted. The remaining families each represent a different type of plant. The plant species that have been collected are renowned for their ability to treat ailments like tonsillitis, elephantiasis, tonsillitis, Alzheimer's, Parkinson's, colds, arthritis, gastritis, gonorrhoea, diarrhoea, dysentery, jaundice, and leprosy. Plant species from the list are reported to be effective in treating a variety of conditions, including arthritis, cancer, diabetes, asthma, bronchitis, leprosy, tuberculosis, intestinal worms, anemia, syphilis, skin disease, and others.

Keywords Ailments, conservation, fabaceae, herbal medicines, tuberculosis

1. Introduction

Indigenous communities have long utilized medicinal plants in their healthcare systems, relying on traditional knowledge and local ecosystems to treat various ailments (WHO, 2022). Medicinal plants are considered more effective than other medications due to their commonness and environmental awareness, making them safe and effective in treating various illnesses (Smruti, 2020). The global market for plant-based products is valued at 83 US dollars, with 60% of anticancer therapies and 25% of modern pharmaceuticals sourced from natural sources. According to the WHO, between 65% and 80% of the population in developing countries already employs medicinal herbs as a method of treatment (Palhares et al., 2015).

Nepal is home to 3.2% of the world's known flora despite making only just 0.1% of

the earth's total surface area (Government of Nepal 2014). There are 13, 067 plant species have been described from Nepal (Chaudhary et al., 2020), which includes 41 species of gymnosperm (Shrestha et al., 2018), and about 7000 species of flowering plants (Kunwar et al., 2010; Chaudhary et al., 2020), of which 2500 species are used medicinally (Kunwar et al., 2020). Nepal has a long history of using plants medicinally for subsistence, household economy, basic health care, and indigenous people's culture. This includes 3000 years of Ayurvedic usage (Singh et al., 1979; Bhattarai, 1993; Manandhar, 2002; Kunwar et al., 2018).

Despite advancements in herbal medicine, translating traditional practices into western medicine remains challenging due to lack of standardization incentives and market potential information (Oladaji, 2016). Modern medicine replaces direct use of medicinal plants, but underdeveloped countries still rely on traditional medicine due to low cost, as synthetic alternatives are unavailable (Salmeron-Manzaro et al., 2020). Recently, several studies on medicinal plants (Paudel et al., 2018a, Paudel et al., 2018b, Paudyal et al., 2021 & Das et al., 2021, Chaudhary et al., 2021) have been carried out in Nepal. This study investigates the misuse of medicinal plants in Saptari district of Nepal, highlighting the need to conserve these plants for future generations' access and preservation.

2. Materials and methods

2.1. Study area

Saptari is a part of the Madhesh province, one of the seventy-seven districts of Nepal. Rajbiraj is the district's administrative center. At latitude $26^{\circ}35'46.32''$ North and longitudinal $86^{\circ}45'05.40''$ East, the district is located. The total area of the district is $1,363 \text{ Km}^2$ with a total population of about 8,57,360 (Figure 1). The elevation ranges from below 300 meters to over 1000 meters above sea level. Rajbiraj, along with other little towns like Mahuli, Kathauna Bazar, Pato, and Ithari Bishnupur, serves as the district headquarters (Census, 2021).



Figure1. Map of study area (Saptari district).

2.2 Field methods and data collection

The study focuses on ethnomedical knowledge of therapeutic plants in Saptari district, involving local practitioners Bhaidhya and Dhammi to gather information on their uses, dosages, and additions.

2.3 Data collection

Primary data of medicinal plants were collected by practicing in Saptari district; a questionnaire was prepared for the collection of plants in the field visit. Interviews were taken using the Participatory Rural Appraisal (PRA) technique (Bazai et al. 2013) from 30 men and 20 women from various villages who had knowledge of medicinal plants and their use. Available answers of these questions were noted. Secondary data and map of Saptari district were obtained from district development committee.

2.4 Plant collection, herbarium preparation and identification

Primary data collection involved collecting plants during flowering and fruiting stages, with local healers' assistance. Specimens were pressed, dried, and pasted on a standard-sized herbarium sheet. The specimens were studied and identified with the aid of available literature (Haines, 1961; Hooker, 1872; Hara et al 1978, 1979, 1982) as well as herbarium sector. The medicinal plants were arranged in alphabetical order with their respective local name, followed by families and their medicinal use.

3. Results

The present investigation deals 83 plant species under 46 families. Among the total plant species, 41 plants were cultivated and 42 were wild (Table1). The maximum number of nine plant species used medicinally, belong to the family Fabaceae. Similarly, Malvaceae, Moraceae, Solanaceae, Lamiaceae each consist of four species. Three plant species were noted from Amaranthaceae, Apocynaceae, Apiaceae and Poaceae. Two plant species are noted from Rutaceae, Amaryllidaceae, Araceae, Meliaceae, Brassicaceae, Zingiberaceae, Euphorbiaceae, Myrtaceae and Combretaceae. The rest of the families each represent one plant species. Out of the 83 recorded plants, herbs are maximum (42.16%), tree (31.32%), shrub (20.48%) and climber (6.024%) (Figure2).

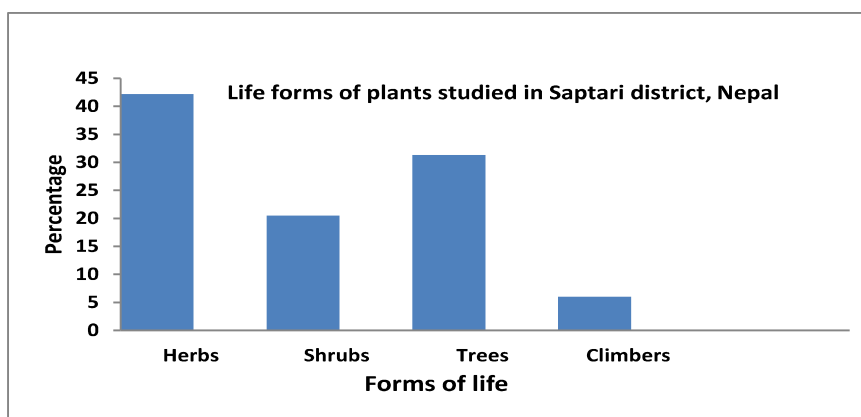


Figure 2. Chart shows life form of plants used by people of Saptari district.

The largest plant family used by people of Saptari district was Fabaceae (10.84%) which was followed by Malvaceae, Moraceae, Solanaceae and Lamiaceae (4.8%), Amaranthaceae, Apocynaceae, Apiaceae and Poaceae (3.6%) and Rutaceae (2.4%) (Figure 3).

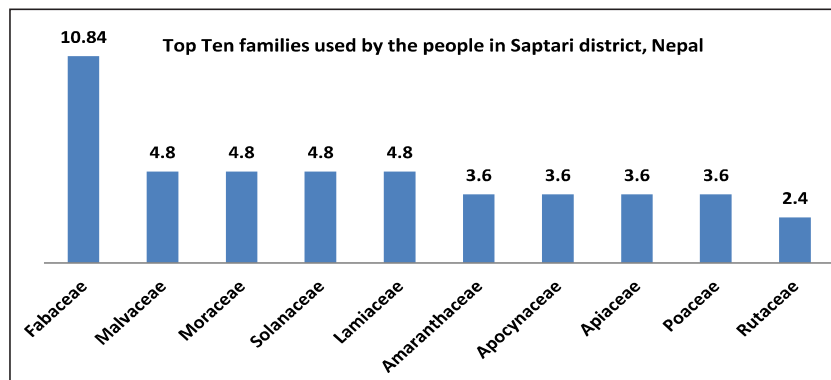


Figure 3. Top ten families used by local people

According to mode of preparation, mostly decoction form is used i.e., (33.85%) followed by juice (15.625%), paste (14.06%), oil (11.98%), powder (9.89%), extract (8.85%), raw (2.60%), infusion (1.56%), liquid drug (1.042%) and ashes (0.52%) (Figure-4).

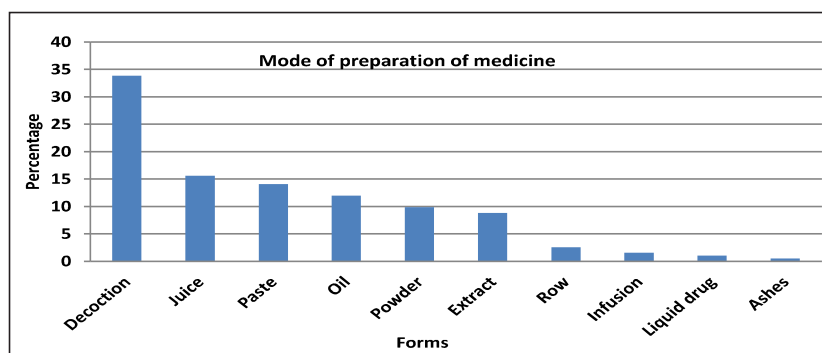


Figure 4. Mode of preparation of medicinal plants by people in Saptari district

Among the plant parts, the leaves (33.50%) are highly used followed by Roots (14.43%), Bark (12.37%), Fruit (11.85%), Seed (11.34%), Flower (6.185%), Stem (4.12%), Rhizome (3.092%), Pulp (1.030%), Bulb (1.030%), Latex (0.51%) and Petiole (0.51%) (Figure 5).

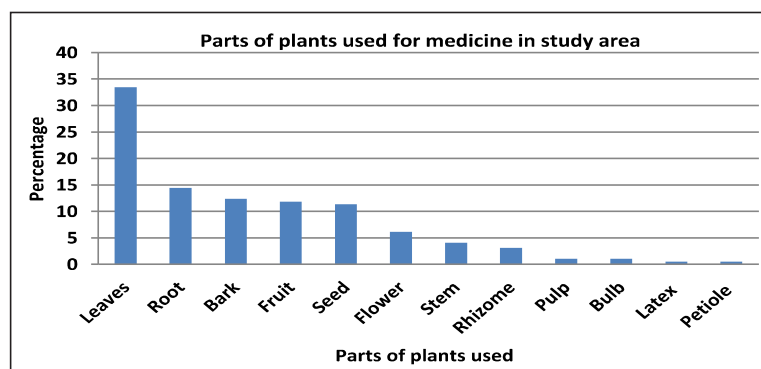


Figure 5. Parts of plants used for medicine in study area.

Table 1. List of documented plant species with their various applications from Saptari, Nepal

S. N.	Scientific name	Local name	Family	Habitat	Life form	Aliment	Part used	Mode of preparation
1.	<i>Abelmoschus esculentus</i> (L.) Moench	Bhindi	Malvaceae	Cultivated	Herb	Cancer, diabetes, stroke and heart disease	Seed, fruit	Oil, powder, decoction
2.	<i>Achyranthes aspera</i> L.	Chirchira	Amaranthaceae	Wild	Herb	Cough, bronchitis, rheumatism, malarial fever, dysentery, asthma, hypertension, diabetes and labor pain	Root, leaves	Paste, extract
3.	<i>Aegle marmelos</i> (L.) Correa	Bel	Rutaceae	Cultivated	Tree	Dysentery, constipation, gastritis, fever, worms, diarrhea, breast cancer	Leaves, roots, fruits	Oil, extract, juice, decoction
4.	<i>Allium cepa</i> L.	Piyaj	Amaryllidaceae	Cultivated	Herb	Cholesterol level, heart disease, lower blood pressure, reduces swelling/inflammation, cure acne, fever and skin disease.	Leaves, bulbs	Paste, decoction, powder, raw
5.	<i>Allium sativum</i> L.	Lasun	Amaryllidaceae	Cultivated	Herb	Fever, diabetes, intestinal worms, dysentery, lower blood pressure, bronchitis, tuberculosis, cramp and joint pain	Leaves, bulbs	Paste, powder, decoction, raw
6.	<i>Alocasia macrorrhizos</i> (L.) G. Don	Mankachu	Araceae	Cultivated	Herb	Cough, snakebites, scorpion stings	Petiole, rhizome, stem, leaves	Juice, paste
7.	<i>Aloe vera</i> (L.) Burm. f.	Ghyu Kumari	Asphodelaceae	Cultivated	Herb	Skin burn and wound, improve digestion, cure constipation, boost immune power and diabetes.	Leaves	Juice
8.	<i>Annona squamosa</i> L.	Sarifa	Annonaceae	Wild	Tree	Digestion, rheumatism, sleeplessness, boosts immune system.	Fruit, leaves	Infusion, oil
9.	<i>Artocarpus heterophyllus</i> Lam.	Kathar	Moraceae	Wild	Tree	Ulcers, diarrhea, fever, skin disease and asthma	Bark, root, leaves, fruit	Decoction, Juice, ashes
10.	<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae	Wild	Tree	Leprosy, eye disorders, bloody nose, intestinal worms, skin ulcer, heart disease, cardiovascular disease, blood purification, gum disease, gingivitis and abortion.	Leaves	Powder, extract, decoction, oil
11.	<i>Bacopa monnieri</i> L. Pennell	Brahmni	Plantaginaceae	Wild	Herb	Insomnia, lower blood pressure, diabetes, wound healing, asthma and boost our memory.	Leaves	Juice, powder, extract
12.	<i>Beta vulgaris</i> L.	Chukandar	Amaranthaceae	Cultivated	Herb	Anemia, jaundice, tonic, cancer, tumors of intestine, cure genital tumors and leukemia.	Root, seed	Juice, decoction
13.	<i>Boerhavia diffusa</i> L.	Punarawa	Nyctaginaceae	Wild	Herb	Ulcers and abscesses, dysentery, jaundice, gastritis, asthma, anemia, internal inflammation, snake bite.	Root, leaves	Decoction
14.	<i>Bombax ceiba</i> L.	Semal or Semar	Malvaceae	Wild	Tree	Diuretic, tonic, cholera, tubercular fistula, coughs, urinary complaints, abdominal pain due to dysentery, hemoptysis in pulmonary tuberculosis, influenza, dysentery, menorrhagia, leprosy, syphilis, spider and snake bite.	Leaves, root, flower, bark	Decoction

15.	<i>Brassica campestris</i> L.	Toris	Brassicaceae	Cultivated	Herb	Increase milk production in cattle, cold, slow cancer cell growth, reduce inflammation, reduces cardiovascular disease.	Leaves, seed	Oil, decoction
16.	<i>Brosimum guianense</i> (Aubl.) Huber	Kochila	Moraceae	Wild	Tree	Analgesic, antihelmintic, internal ulcers, asthma, cold, rabies.	Latex, bark	Extract, decoction, liquid drug
17.	<i>Calotropis gigantea</i> (L.) Dryand	Aak	Apocynaceae	Wild	Shrub	Arthritis, cancer, snakebite, skin disease, elephantiasis.	Bark, root	Extract
18.	<i>Canabis sativa</i> L.	Bhang or Hemp	Cannabaceae	Wild	Herb	Tumors, cancerous ulcers	Seed, root	Decoction, paste
19.	<i>Carica papaya</i> L.	Mewa	Caricaceae	Cultivated	Tree	Lower blood sugar level, dengue fever, cancer cell growth inhibition, malaria, digestion, intestinal worm and urinary trouble.	Root, fruit, leaves	Juice, infusion, decoction
20.	<i>Catharanthus roseus</i> (L.) G. Don	Sadabahar	Apocynaceae	Cultivated	Shrub	Ocular inflammation, diabetes, hemorrhage, insect stings, cancers, tonsillitis and chest pain	Leave, flower	Decoction, powder
21.	<i>Chenopodium album</i> L.	Bethusag	Amaranthaceae	Wild	Herb	Rheumatism, bug bites, urinary problem, skin disease, round worms and hookworms, blood purification.	Seed	Oil, decoction
22.	<i>Chrysopogon zizanioides</i> (L.) Roberty	Khus or Vetiver	Poaceae	Wild	Herb	Skin disease, calming effect on nervous system, relieving stress, insect's repellent, arthritis, stings, burns, insomnia, muscle pain.	Leaves, roots	Oil
23.	<i>Cinnamomum tamala</i> (Buch.-Ham) T. Nees and C.H. Eberm	Tejpatra	Lauraceae	Cultivated	Tree	Astringent, carminative qualities, Rheumatism, Colic, diarrhea, nausea and vomiting, diuretic and cardiac or heart disease.	Leaves, barks	Oil, raw
24.	<i>Citrus limon</i> (L.) Osbeck	Nimboo or Kagati	Rutaceae	Cultivated	Shrub	Scurvy, sore throats, fever, rheumatism, lower blood pressure, chest pain, coughs, weight loss, heart disease, anemia, kidney stones, cancer, digestive issues.	Fruit, leaves	Oil, juice
25.	<i>Clitoria ternatea</i> L.	Aprajita	Fabaceae	Wild	Climber	Enhance memory, antistress, antidepressant, sedative, strengthen our hair, anticancer, treat urinary problems, improve eye sight, night vision, and improve spermatogenesis.	Root, leaves, flower, bark, seeds	Oil, decoction
26.	<i>Cocos nucifera</i> L.	Nariwal	Areaceae	Cultivated	Tree	Diuretic, laxative, diarrhea, counter the effect of poison, skin disease, teeth, soften hair and prevent dandruff, diabetes, control high cholesterol.	Fruit	Oil, raw
27.	<i>Colocasia esculenta</i> (L.) Schott	Kachu	Araceae	Cultivated	Herb	Asthma, arthritis, diarrhea, internal hemorrhage, neurological disorders, skin diseases and body ache.	Leaves, stem, rhizome	Juice, decoction
28.	<i>Coriandrum sativum</i> L.	Dhania	Apiaceae	Cultivated	Herb	Digestion, boost metabolism, reduce anxiety, constipation, diabetes, diarrhea, insomnia, worms	Leaves, seeds	Paste, juice, decoction, extract

29.	<i>Curcuma longa</i> L.	Hardi	Zingiberaceae	Cultivated	Herb	Reduces inflammation, gastritis, hepatic and blood disorders. Heart diseases, Alzheimer's cancer, improve depression and arthritis.	Rhizome	Powder
30.	<i>Cuscuta reflexa</i> Roxb.	Amarlatti	Custutaceae	Wild	Climber	Fever, body pains, itchy skin, Jaundice, muscle pain, cough, urinary disorder, anti-fertility effect.	Stem	Decoction, powder
31.	<i>Cymbopogon citratus</i> (DC) stapf	Lemongrass	Poaceae	Cultivated	Herb	Aromatherapy, lowering blood pressure, antifungal, antibacterial, antiprotozoal against Leishmania	Leaves	Oil, leaf extract, decoction
32.	<i>Cynodon dactylon</i> (L.) Pers.	Dubbo	Poaceae	Wild	Herb	Laxative, brain and heart disease, tonic, inflammation, toothache, bleeding, skin troubles, fever, ulcers, stomach infection and kidney stone.	Leaves, rhizomes	Decoction, paste, juice
33.	<i>Cyprus rotundus</i> L.	Motha	Cyperaceae	Wild	Herb	Diuretic, sedative, tonic, antibacterial, treatment of diarrhea, diabetes, inflammation, malaria, menstrual irregularities.	Rhizome	Oil, decoction
34.	<i>Dalbergia sissoo</i> Roxb.	Sissoo	Fabaceae	Wild	Tree	Gonorrhea, skin disease, eye disease, eye disease, anthelmintic, antipyretic, analgesic, leprosy, nausea, itching, burning of skin, scabies, ulcers, leukoderma and dysentery.	Leaves, bark	Paste, Juice, oil
35.	<i>Datura stramonium</i> L.	Dhatura	Solanaceae	Wild	Herb	Skin disease, ear pain, cough, fever, asthma, body pain, injuries; wound bleeding, pain, hair fall and antidandruff.	Leaves, fruit	Extract, juice
36.	<i>Daucas carota</i> L.	Gajar	Apiaceae	Cultivated	Herb	Urinary tract problem, kidney stones, bladder problem, excess uric acid in the urine, treat a painful joint problem caused by excess uric acid, severe diarrhea(dysentery), indigestion and intestinal gas.	Seed, root	Oil, decoction, paste, juice, raw
37.	<i>Desmostachya bipinnata</i> (L.) Stapf	Halfa grass	Poaceae	Wild	Herb	Dysentery, diarrhea, skin disease, jaundice, improve breast milk during lactation, fever, wounds and abdominal pains.	Leaves, root	Decoction
38.	<i>Ficus benghalensis</i> L.	Banyan	Moraceae	Wild	Tree	Ulcers, vomiting, vaginal complains, fever, inflammation, leprosy, syphilis, dysentery, lower cholesterol, inflammation of liver.	Leaves, bark, root	Decoction
39.	<i>Ficus religiosa</i> L.	Peepal	Moraceae	Wild	Tree	Jaundice, gonorrhea, skin diseases, asthma, cough, diabetes, wound healing, diarrhea, blood -related problem, burning sensation, vomiting and sexual disorders.	Bark, leaves, seed, fruit	Decoction, paste
40.	<i>Gossypium hirsutum</i> L.	Kapas	Malvaceae	Cultivated	Shrub	Skin rashes, fungal infection, menstrual disorders, nausea, fever, headache, diarrhea, dysentery, nerve pain and bleeding.	Leaves, seed	Decoction
41.	<i>Jatropha curcas</i> L.	Baghandi	Euphorbiaceae	Wild	Shrub	Antimicrobial, anticancer, anti-HIV, expel internal parasites, wound ulcers, scabies, malarial disease, diarrhea, gonorrhea.	Root, leaves, seed	Decoction, extract, oil

42.	<i>Lepidium sativum</i> L.	Chamsur	Brassicaceae	Cultivated	Herb	Asthma, Bronchitis, cough, heal bone fractures, heal bone, eye disorder and diarrhea.	Leaves, seed	Decoction, oil, powder
43.	<i>Leucas aspera</i> (Willd.) Link	Dulfi	Lamiaceae	Wild	Herb	Pneumonia, Rheumatism, cold, coughs, nasal disorder, chronic skin eruption, mosquito repellent, insects and scorpion sting.	Leaves, root	Decoction, paste, juice, liquid drug
44.	<i>Mangifera indica</i> L.	Aam	Anacardiaceae	Cultivated	Tree	Diabetes, lower blood pressure, fight restlessness, treat gall and kidney stone, dysentery, heal burns, heart health improves, boost immunity power, cancer.	Fruit, leaves	Decoction, juice, powder
45.	<i>Melia azedarach</i> L.	Bakayan	Meliaceae	Wild	Tree	Remove internal parasite, treat malaria, blood purification, skin disease, insect repellent, rheumatism.	Bark, fruit, leaves	Decoction, extract
46.	<i>Memoradica charantia</i> L.	Karaila	Cucurbitaceae	Cultivated	Climber	Diabetes, skin disease, wound, ulcers, cough, respiratory disease, heart disease like tachycardia.	Fruit, leaves	Decoction
47.	<i>Mentha spicata</i> L.	Pudina	Lamiaceae	Cultivated	Herb	Fevers, headaches, digestive disorders, balance hormone, lower blood sugar level, improve digestion, reduce stress, improve our memory.	Leaves	Decoction, powder, oil
48.	<i>Mimosa pudica</i> L.	Lajauni	Fabaceae	Wild	Herb	Urinogenital disorders, piles, dysentery, sinus, wounds, antibacterial, antidepressant, constipation, leprosy, reduces stomach acidity.	Leaves	Decoction, extracts
49.	<i>Moringa oleifera</i> Lam.	Sohijan	Moringaceae	Cultivated	Tree	Bone healing, nourishing skin and hair, antioxidant, improve fertility in male, maintain blood sugar level, promote prostatic health, wound and skin disease.	Leaves, seeds, roots, fruit	Decoction, powder
50.	<i>Musa paradisiaca</i> L.	Banana	Musaceae	Cultivated	Herb	Ulcers, dysentery, bronchitis, diabetes, diarrhea, malignant ulcers.	Flower, leaves	Decoction, extract
51.	<i>Nelumbo nucifera</i> Gaertn.	Kamal ful	Nelumboaceae	Wild	Herb	Diarrhea, sunstroke, treat premature ejaculation, abdominal cramps, bloody discharge or bleeding, gastric ulcers, excessive menstruation, cancer.	Leaves, flower, root	Decoction, juice
52.	<i>Neolamarkia cadamba</i> (Roxb.) Bosser	Kadam	Rubiaceae	Wild	Tree	Uterine disorders, blood disease, leprosy, diabetes, hemoptysis and fever.	Stem, bark, leaves	Decoction, paste, juice
53.	<i>Nicotiana tabacum</i> L.	Khaini	Solanaceae	Cultivated	Herb	Antispasmodic, diuretic, rheumatism, inflammation, skin disease, scorpion stings, Parkinson's disease, Alzheimer's, mouthwash.	Leaves	Decoction, paste
54.	<i>Nyctanthes arbor-tristis</i> L.	Parijat or Singarful	Oleaceae	Cultivated	Shrub	Digestion, antidote to reptile venom, scurvy, infection of scalp, piles, skin disease relieve menstrual cramp, rid of worm infection, eczema, ringworm, helps in micturition.	Leaves, bark, flower	Powder, juice, paste, infusion

55.	<i>Ocimum sanctum</i> L.	Tulsi	Lamiaceae	Cultivated	Shrub	Colds, cough, sore throat, asthma, lower blood pressure, reduces stress, gastro intestinal disorders, arthritis, antiseptic, bronchitis, malaria, dysentery, skin disease, prevent lung cancer.	Leaves	Powder, Decoction, paste
56.	<i>Opuntia basilaris</i> Engelm and J.M bigelow	Nagphani	Cactaceae	Wild	Shrub	Lower cholesterol, obesity, alcohol hangover, colitis, diarrhea, Benign prostatic hypertrophy (BPH), viral infection, relieve inflammation, joint pain, hypoglycemia, diabetes.	Leaves, fruit	Juice, paste
57.	<i>Phyllanthus emblica</i> L.	Amala	Phyllanthaceae	Cultivated	Tree	Diarrhea, jaundice, inflammation, boost up immunity of skin against antibacterial infection, anti-ageing, anti-ulcerogenic, dysentery, fever.	Fruit, leaves, bark	Decoction, juice
58.	<i>Piper betle</i> L.	Paan	Piperaceae	Cultivated	Climber	Indigestion, constipation, bronchitis, congestion, coughs, asthma, antiseptic, wounds, ulcers, lower blood glucose level, diabetes mellitus, acne, kidney and bladder stone.	Leaves	Decoction, extract
59.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Jebebi	Fabaceae	Wild	Tree	Muscular swelling, indigestion, abortion, chest congestion, internal ulcers, diarrhea and dysentery.	Leaves, seed, bark	Decoction, paste, juice
60.	<i>Punica granatum</i> L.	Aanar	Puniaceae	Cultivated	Shrub	Sore throats, cough, urinary infection, digestive disorders, arthritis, expel internal parasite, insomnia, abdominal pain, dysentery, jaundice, mouth ulcers, skin ageing, eczema, lower blood pressure, improve cholesterol.	Fruit, seed, leaves, flower	Decoction, juice
61.	<i>Psidium guajava</i> L.	Guava or Amba	Myrtaceae	Cultivated	Tree	Diabetes, hypertension, wound, pain relief, fever, diarrhea, lung disease, ulcers, improve liver damage, inflammation.	Leaves, bark, fruit	Decoction, juice
62.	<i>Pterocarpus santalinus</i> L.f.	Raktchandan	Fabaceae	Wild	Tree	Digestive tract problems, fluid retention, coughs, blood purification, treat blemishes, rashes and acne, eye diseases, ulcer, dysentery and hemorrhage.	Bark, fruits, stem	Decoction, paste
63.	<i>Ricinus communis</i> L.	Andi/Castor	Euphorbiaceae	Wild	Shrub	Abdominal disorders, arthritis, backache, muscle aches, chronic headache, constipation, gall bladder, period pain, menstrual cramps, sleeplessness, leprosy, syphilis, start labor pain, to start the flow of milk.	Leaves, root, seed	Decoction, oil, paste
64.	<i>Rosa chinensis</i> Jacq	Gulab ful	Rosaceae	Cultivated	Shrub	Arthritis, cough, hematuria, ulcers and wounds, irregular menstruation, severe pain, cramping.	Leaves, fruits, roots	Decoction, juice, extracts
65.	<i>Hibiscus rosa sinensis</i> L.	Ghantiful	Malvaceae	Cultivated	Shrub	Mump, fever, sores, cough and cold, venereal disease, dysentery and diarrhea, constipation, cancer, liver disease, heal wound.	Root, leaf, flower	Decoction, paste
66.	<i>Rauwolfia serpentina</i> (L.) Benth. ex kurtz	Sarpagandha	Apocynaceae	Wild	Shrub	Wounds and itches, snake and scorpion sting, induce uterine contraction during birth, treat mental disorders, slow the heart rate, to dilate the blood vessels.	Bark, leaves, root	Decoction, juice

67.	<i>Saraca asoca</i> (Roxb.) Willd.	Ashoka tree	Fabaceae	Wild	Tree	Internal bleeding, infertility, insomnia, female disorders like dysmenorrhea and menorrhagia, menstrual irregularities, increase uterine contraction, kidney stone, arthritis, severe uterine bleeding.	Bark, stem, root, seed	Decoction, paste
68.	<i>Selaginella bryopteris</i> (L.) Baker	Sanjeevanibooti or Laxman booti	Selaginellaceae	Cultivated	Herb	Wounds, irregular menstruation, uterine disorders, internal injuries, jaundice, relief from burning sensation during urination, cancer, neuro degenerative disease such as atherosclerosis, Alzheimer's, Parkinson's and tuberculosis.	Stem, leaves, flower	Decoction, powder
69.	<i>Sesamum indicum</i> L.	Til	Pedaliaceae	Cultivated	Herb	Blood cell formation, lower cholesterol level, blood pressure, inflammation, anxiety, insomnia, cure burn, headache, ear pain, tendonitis, decrease the blood lipid and heart disease.	Seed	Oil
70.	<i>Solanum nigrum</i> L.	Bhutka	Solanaceae	Wild	Shrub	Pneumonia, aching teeth, stomachache, tonsillitis, pain inflammation, cure cancer, ulcer, asthma, whooping cough, tonic, hepatoprotective ear ache.	Root, fruit	Juice
71.	<i>Syzygium cumini</i> (L.) Skeels	Jamun	Myrtaceae	Wild	Tree	Treat digestive disorder, diarrhea, piles and enhance immune system, antibacterial, strengthen teeth and gums, diabetes mellitus.	Fruit, leaves	Powder, juice
72.	<i>Tamarindus indica</i> L.	Tetair or Titri	Fabaceae	Wild	Tree	Lower blood sugar, lose body weight, constipation, fever, gall bladder disorder, disorder affecting bile flow in liver, wound healing, snakebite, abdominal pain, lower cholesterol level.	Leaves, bark, pulp, seed	Decoction, extract
73.	<i>Tagetes patula</i> L.	Saipatri	Asteraceae	Cultivated	Herb	Treat digestive tract problem like loss of appetite, gas stomach pain, intestinal worms and dysentery, start menstruation, treat sore breast (mastitis), protect against miscarriage, strengthen our heart.	Leaves, flower	Decoction, oil
74.	<i>Terminalia arjuna</i> W. and A.	Arjun tree	Combretaceae	Wild	Tree	Diabetes, anemia, tumors, hypertension, prevent heart failure, chest pain, lower cholesterol, asthma, bile duct disorders, scorpion stings.	Barks, leaves	Decoction, powder
75.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bahera	Combretaceae	Wild	Tree	Leprosy, cough, bronchitis, insomnia, edema, eye disease, dropsy, piles, diarrhea, protect liver, sore throat and treat respiratory condition.	Seed, bark, pulp, fruit	Decoction, oil
76.	<i>Tinospora cordiflora</i> (Thunb.) Miers	Guraj lati/ Giloy	Menispermaceae	Wild	Climber	Diabetes, high cholesterol, cancers, hepatitis, fever, gonorrhea, syphilis, boost immune system, jaundice, dengue fever, swine flu, malaria.	Leaves, stem	Decoction, paste
77.	<i>Trachyspermum ammi</i> (L.) Sprague exTurill	Jawain	Apiaceae	Cultivated	Herb	Lower blood pressure, improve cholesterol level, abdominal pains, piles, asthma, lack of appetite, indigestion, relief joint pain, cure wounds, relief cramp pain.	Seed	Decoction, oil, paste

78.	<i>Trigonella foenum-graecum</i> L.	Methi	Fabaceae	Cultivated	Herb	Diabetes, reduce cholesterol level, inflammation, boosting testosterone, increasing milk production, arthritis, constipation, polycystic ovary syndrome and obesity.	Leaves, seed	Decoction, powder, paste
79.	<i>Vachellia nilotica</i> (L.) P.J.H. Hurter and Mabb.	Babul	Fabaceae	Wild	Tree	Treatment of HIV, hepatitis C, cancer, venereal disease, nausea, burns, wounds, diarrhea, relieves pain, promotes oral health, restricts blood loss, treats urinary problems such as UTI and bleeding of the uterus.	Leaves, root, bark	Decoction, paste
80.	<i>Vitex negundo</i> L.	Sinwair	Lamiaceae	Wild	Shrub	Indigestion, improve vision, ophthalmia, piles, jaundices, fever, body pain, skin disease, excessive vaginal discharge.	Leaves, root, bark, fruit	Decoction, juice
81.	<i>Withaniasomnifera</i> (L.) Dunal	Ashwagandha	Solanaceae	Wild	Shrub	Asthma, diabetes, hypertension, arthritis, stress, cancer, anxiety, boost fertility, anti-depressant, treatment of male fertility, Parkinson disease, sexual dysfunction.	Fruit, leaves, root	Decoction, paste, powder
82.	<i>Ziziphus jujuba</i> Mill	Bayer	Rhamnaceae	Cultivated	Shrub	Muscular strength, liver and bladder disease, ulcers, sedative, constipation, digestion, treat dry and itchy skin.	Fruit, root, bark	Decoction, juice, powder
83.	<i>Zingiber officinale</i> Roscoe	Ginger/ Aduwa	Zingiberaceae	Cultivated	Herb	Arthritis, cramps, sprains, sore throats, muscular aches, pains, vomiting, constipation, indigestion, hypertension, fever, dysentery, diarrhea, loss of appetite, reduces blood sugar, eases period pains.	Rhizome, leaves	Decoction, paste

4. Discussion

Plant species are known for treating various health issues, including Alzheimer's, Parkinson's, elephantiasis, arthritis, and more. They are effective in treating various skin diseases, cancer, diabetes, asthma, and more. In Saptari district, locals use various plant species to treat 162 health conditions, demonstrating their expertise in traditional medicine. These plants have no negative side effects, boost immune function, and generally improve health, leading to increased curiosity about medicinal plant treatments. Different medicinal plants have been reported for the treatment of different kinds of diseases such as *Azadirachta indica* A. Juss. for leprosy, *Bacopa monnieri* L. Pennell for diabetes and asthma, *Boerhavia diffusa* L. nam. cons. for jaundice and snake bite, *Bombax ceiba* L. for cholera, tuberculosis and leprosy, *Ricinus communis* L. for arthritis, backache, muscle aches, chronic headache and constipation, *Rauwolfia serpentina* (L.) Benth. ex Kurtz for snake and scorpion sting, induce uterine contraction during birth, and mental disorders, *Vitex negundo* L. for Indigestion, improve vision, ophthalmia, piles, jaundices, fever, body pain, skin disease, excessive vaginal discharge, *Withania somnifera* (L.) Dunal for Asthma, diabetes, hypertension, arthritis, stress,

cancer, anxiety, boost fertility, anti-depressant, treatment of male fertility, Parkinson disease, sexual dysfunction are the significant information of the investigation.

5. Conclusion

The aforementioned data were gathered from reliable local Dhami, Jhakri, and Baidhya sources. Due to its contribution to the development of novel medications and significance for the proper preservation of medicinal plants, indigenous knowledge on plants is gaining popularity on a global scale. People in the Saptari area still use a variety of traditional treatments today. People from the Saptari district offer handmade medical preparations in several locations. This improves their financial situation while also preserving endangered species and biodiversity through the cultivation of traditional medicinal herbs. This aids in educating future generations about medical usage. This ethnobotanical practice of observing plants for their therapeutic properties gives knowledge to help with the growing need for healthcare for people. These plants give researchers interested in biological and pharmacological processes the chance to work with the medicine plants that the Saptari district's residents utilize.

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