Short Research Article

An Ethnobotanical study to document the indigenous knowledge of Buksa tribe of Uttarakhand, India

ABSTRACT

The present paper aimed at reporting the traditional ecological knowledge related to the preparation of medicines by a primitive tribe of Uttarakhand i.e., the Buksa tribe. In this study 103 plant species are recorded which belongs to 54 families. The Buksa tribe uses the plant to make the medicines in order to cure many diseases. Herbs are most used plant type. It has been noticed that leaves are most used part of the plant for the preparation of the medicines by the tribe. The Family Fabaceae (25%) followed by Malvaceae (19%) and Moraceae (19%) were the dominant family of plants utilised by the tribe. It has been noticed that the knowledge related to the ethnobotany is only bound to the old agers. The young generation is lacking this knowledge. Buksa's are used to be the best medical healers but passing of knowledge from one generation to other generation is decreasing. The traditional knowledge which passes from one generation to another orally is now in a disappearing state. Thus it is the need of the hour to document the precious knowledge which can be used by the future generations.

Keywords: Buksa tribe; Ethnobotanical Knowledge; Conservation; Uttarakhand

1. INTRODUCTION

Since the existence of humans on earth, nature has given incredible boons to them. One such wonderful boon is the biodiversity. The intelligence of humans made them able to use biodiversity for the preparation of different things like medicines, fibres, food, etc. from the ancient era, tribal communities have close association with the nature to utilize every possible component of the biological resources. There started a traditional system of medicines having indigenous knowledge of preparing the medicines to cure different diseases. Although due to the modernisation, the traditional system of medicines is disappearing but still in rural parts of India as well as whole world, still use the traditional system of medicines. These ethnic people are still preparing the medicines from the plants and providing many remedies to the people to conserve their indigenous knowledge. Most of the people of the rural areas are poor, so they find themselves unable to buy the allopathic system of medicine [1-2]. The knowledge of the ethnic people towards the plants is due to the obligation to the nature, close association with nature, long experience, observations and errors [3]. The traditional knowledge of preparation of the medicines from the plants to cure different types of diseases is known as Ethnobotany [4].

Globally 60% population and 80% population of developing countries rely on the traditional medicinal system. In India, about 80% of the rural population and 20% of the urban population relies on the

traditional system of medicines [5]. India is one of the major eco diverse country of the world and it has about 645 tribes which are closely linked with the biodiversity. India is known as the birth place of Ayurveda (a natural system of medicine which originated more than 3000 years ago). The time-to-time documentation of the ancient literature regarding to plants led to the Ayurveda. It is said that Ayurveda was originated from Vedas–Atharveda and Rigveda [6]. The codified documents on Ayurveda i.e., *Charaka Samhita and Sushruita Samhita.* Charak Samhita mentions- "The goat-herds, cow-herds, shepherds, and the tribals are acquainted with identification of medicinal herbs. Other than Ayurveda, Unani, Siddha and Amchi (Ladakhi traditional medicinal practice) medicines system also uses the plants for the preparation of the medicines [7]. Before the introduction of allopathic system of medicine, the tradition of preparing the medicines from the plants was there and there used to be many traditional healers known as *Vaidya's* but nowadays the use of the traditional system of medicines is disappearing because of the modernisation and allopathic system of medicine. People believed that the traditional system of cure for any disease take large time while the modern method take short time.

The Himalayas known as the 'Roof of the World' has number of biodiversity hotspots and has presence of number of floral species which can be used for the preparation of medicines. As stated in the Valmiki Ramayana*,* God Hanuman flew from Lanka to Himalayas to take Sanjeevani *(Selaginella bryopteris)* in order to save God Lakshmana, brother of God Rama, after being attacked by the demon Meghnatha. Being a God, He was saved by a small herb. Over the ages, people are obtaining different types of herbs from the Himalayas.

On the north of Indo-Gangetic plain and south of outer foothills of Himalayas, exists a lowland region known as Terai which is one of the diverse and rich eco region of India [8] and there exists the Buksa – a primitive tribe having a population of about 85000 [9]. This region is ethnobotanically rich and that's why the Buksa tribe is one of the best traditional medicinal practitioners. The Buksa community spread among the district of Uttarakhand (Dehradun, Nainital, Haridwar, Pauri Garhwal) and also in the Bijnor district of Uttar Pradesh. The name 'Boksa' was derived from 'burqa', a root found in the Terai [10]. They had grown long beards, resembling the unkept growth of mountain goats called the 'bok' and hence came to be known as 'bhoksha' 'boksa' 'bora' or 'bura' [11-12]. In Kumaon and Garhwal, a black magician is called Bhoksha [13]. Buksa's are known for their herbal medical practicians and for the exorcism [14]. They have the knowledge of plants and can prepare different of medicines by their knowledge. The knowledge was being shared by the ancestors to their younger generation orally but over the time, due to modernisation the younger generations are not showing any interest to keep this knowledge and grow with it. Only small number of people have this knowledge and if not documented early, the huge and glorious past of the Buksa will be disappeared from the society. Many ethnobotanical studies have been conducted throughout the country over the years [15-18], but still there is lot of work in order to document the plants and their traditional uses [19-21]. The documentation and further research on medicinal plants is highly required for the preparation of plant-based drugs [22-23]. The aim of the present study was to documents the

ethnomedicinal knowledge of Buksa tribe of Uttarakhand to conserve their knowledge for future generation.

2. MATERIALS AND METHODS

The study was conducted in the Dehradun district of Uttarakhand. Three Buksa dominant villages were selected i.e., Sheeshambada ($30^0$19'16''N, $77^0$52'18''E), Sherpur ($30^0$20'37''N $77^0$50'39''E) and Singhniwala ($30^0$20'16''N, $77^0$50'46''E) (Fig.1). The study area witnesses monsoon type of climate with three different seasons; winter (Nov-Feb), summer (April-June) and rainy (July-Sept). The average temperature of the area ranges from 35^0 C to 42^0 C in summer and from 7^0 C to 25^0 C in winters. Area mostly covered by Sal tree (Shorea *robusta*) forest from one side and agricultural (mostly paddy) fields from other sides. The main occupation of the villagers is farming. Extensive and frequent field surveys were conducted during the summer of 2022 based on the semi structures and pre-designed questionnaire [24]. Randomly selected household surveys and Focussed Group Discussions (FGD) were conducted. Prior Information Consent (PIC) was taken before the discussion.

With the help of semi structured questionnaire's, the traditional and indigenous ethnobotanical knowledge of tribal people was recorded with regards to the plant which they use in their daily life, its local name, part used, medicinal uses and preparation of the medicine. Other uses of plants such as religious use, edible purpose, medico-religious beliefs were also recorded.

Figure 1: Map showing the study area

3. RESULTS AND DISCUSSION

This study which was being conducted on the summer of 2022 enumerates the medical importance of 103 plant species (54 families) being used by the Buksa tribe for the preparation of medicines. *Acacia nilotica* L., *Acorus calamus* L., *Allium sativum* L., *Azadirachta indica* A. Juss, *Bombax ceiba* L., *Butea monosperma* (Lam.) taub., *Cannabis sativa* L., *Celosia argentea* L., *Chenopodium album* L., *Curcuma longa* L., *Cryptolepis dubia* (Burm.f.) M.R. Almeida, *Cynadon dactylon* (L.) Pers., *Dalbergia sissoo* Roxb. Ex DC., *Euphorbia hirta* L., *Ficus racemose* L., *Ficus religiosa* L., *Grewia optiva* J.R. Drumm. Ex Burret, *Helicteres isora* L., *Madhuca longifolia* J.F.Macbr., *Moringa oleifera* Lam., *Murraya koenigii* (L.) Spreng., *Nicotiana rustica* L., *Psidium guajava* L., *Ricinus communis* L., *Rauvolfia serpentina* Benth. ex Kurz., *Sonchus arvensis* (L.), *Semecarpus anacardium* L., *Telosma cordata* (Burm.f.) Merr., *Terminalia chebula* (Retz.), *Tinospora cordifolia* (Wild.) Miers, *Trianthema portulacastrum* L., *Withania somnifera* (L.) Dunal, *Ziziphus mauritiana* Lam. are some of the highly used tree species by the Buksa tribe (Table 1 & Fig.2). *Tinospora cordifolia* to be favourite plant among the tribe which is used for making tea, decoction etc. as it is easily available to the tribals. *Acorus calamus* is also favourite among the tribals. The family wise compilation represent Fabaceae with 8 species is highly used family followed by Apocynaceae (6), Moraceae and others. Percentage wise, Fabaceae (25%) followed by Apocynaceae, Malvaceae, Moreaceae each (19%) and Poaceae and Solanaceae each (9%) (Fig 3a & b).

It was being found that Herb (31%) are most used plant type followed by tree (31%), shrub (23%). Other type such as creeper, climbers and grass are also used by the tribe (Fig.4a). Majority of the herbs are obtained from the upper Himalayan region, therefore only the traditional healers have knowledge of most of these herbs. Other plant type can be found easily around the region.

It was found that the leaves (30%) are most used part of the plant used by the tribe for the preparation of the medicine followed by fruit (20%), Bark (18%) and Whole plant (18%) (Fig 4b). Other parts such as stem, roots, rhizome, twigs are also used by the tribe. The tribals either make the powder by crushing the parts of the plant and saving it for future or use the fresh plant parts such as *Tinospora cardifolia* where the fresh stem is crushed and then boil it in hot water in order to make decoction. Some plants such as *Euphorbia hirta* when cut from the stem extract milk like, the tribals directly used them.

It was also found that Dysentery (16%) is the most prevalent disease in the tribals followed by Skin (15%), Rheumatism (13%), Diarrhoea (12%). Other diseases such as Hair, Asthma, Cough, Piles, Bowel, Ulcers are also cured by the tribal healers (Fig.5).

In this study it was noticed that the majority of the tribals are lacking the knowledge of their community, they are busy in other chores. Only old age persons have the knowledge of the plants and its associated knowledge. It came to know that the younger generation is not interested in keeping this knowledge as they find it not useful due to the allopathic system of medicine. Most of the tribals are poor and they just wanted to get money in order to get food two times a day. Some tribals migrated from the area to new areas in search of work and education for their kins. When asked to

the traditional healers about the passing of traditional knowledge from one generation to another, they replied that the younger generation find it difficult to learn the process and said that it is a waste of time as people use the modern practices in order to cure the disease so it's a waste of time to learn these traditions. At first the traditional healers hesitated to share their experience with us as they thought that by sharing this, the impact of their medicines will decrease.

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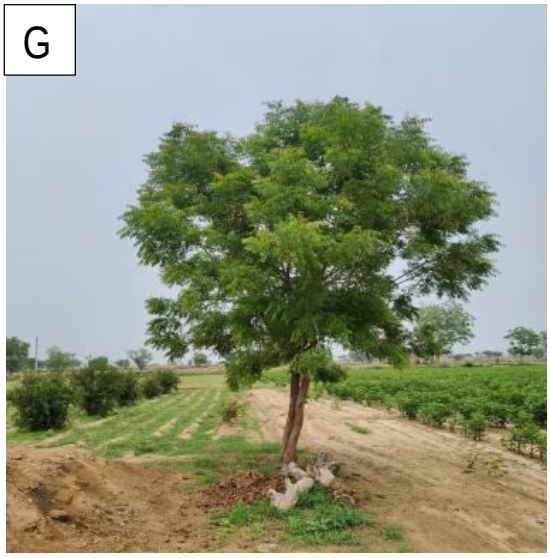

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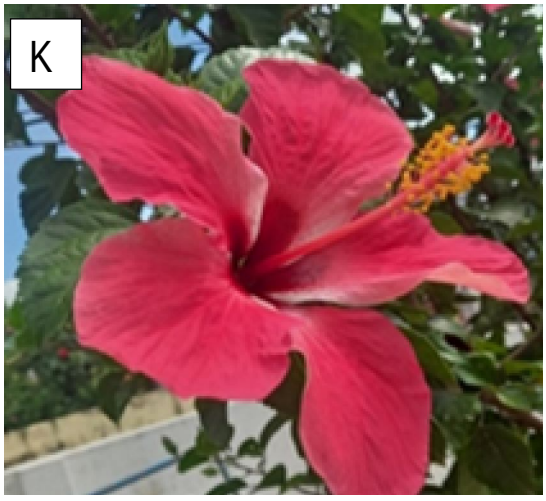

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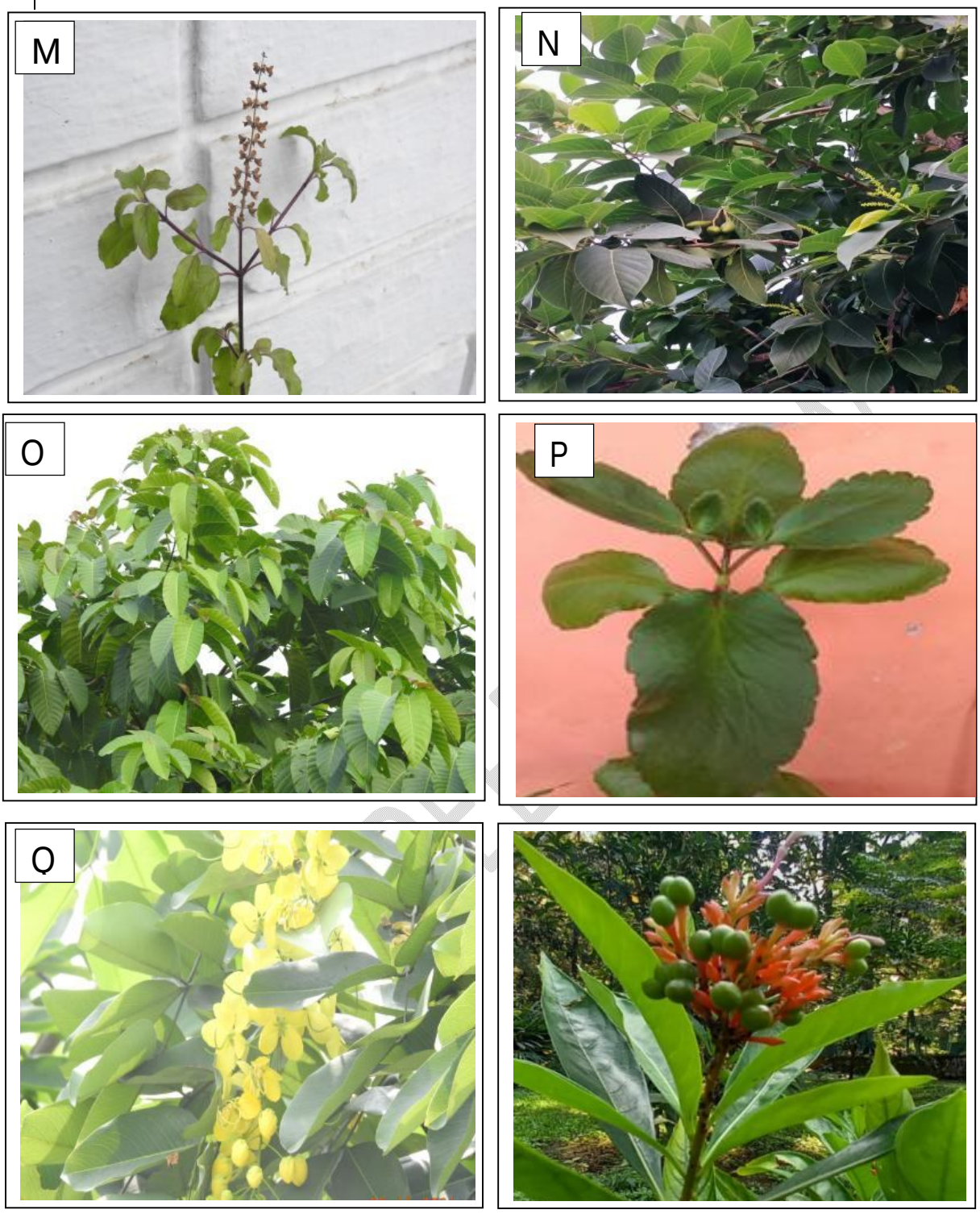

Figure 2 (A-R)- Some important plant species used by the Buksa tribe. A) *Tinospora cardifolia* (Wild.) Miers B) *Acorus calamus* L. C) *Withania somnifera* (L.) Dunal, D). *Pinus roxburghii* Sarg, E) *Murraya koenigii* (L.) Spreng. F) *Psidium guajava* L. G) *Azadirachta indica* A.Juss H) *Phyllanthus emblica* L. I) *Euphorbia hirta* L, J) *Mentha longifolia* L, K) *Hibiscus sabdariffa* L, L) *Ricinus communis* L, M) *Ocimum tenuiflorum* L. N) *Terminalia chebula* (Retz.) O) *Neolamarckia cadamba* Roxb. P) *Bryophyllum pinnata* (Lam.) Pers, Q) *Cassia fistula* L. R) *Rauvolfia serpentina* Benth. ex Kurz

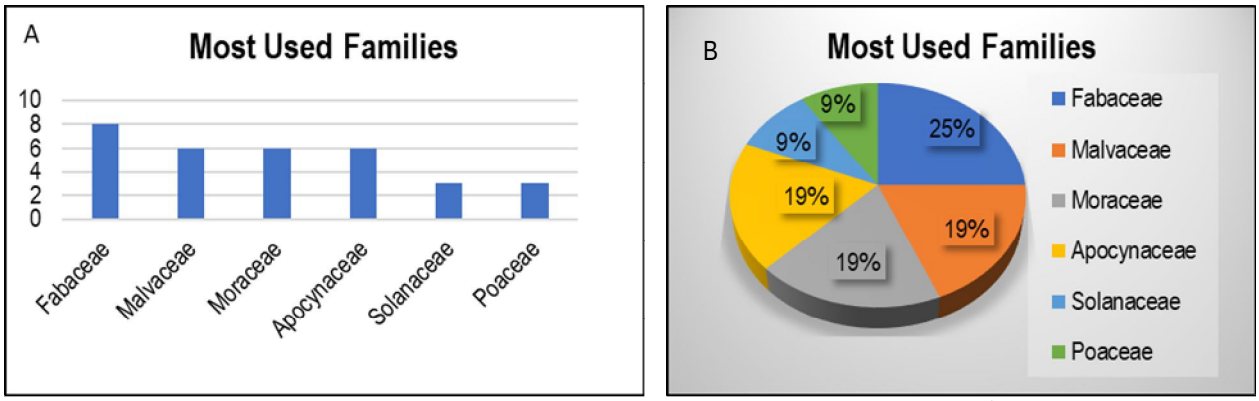

Figure 3. (A) Family by number of species and (B) percentage of most used families by the Buksa tribe for the preparation of medicines

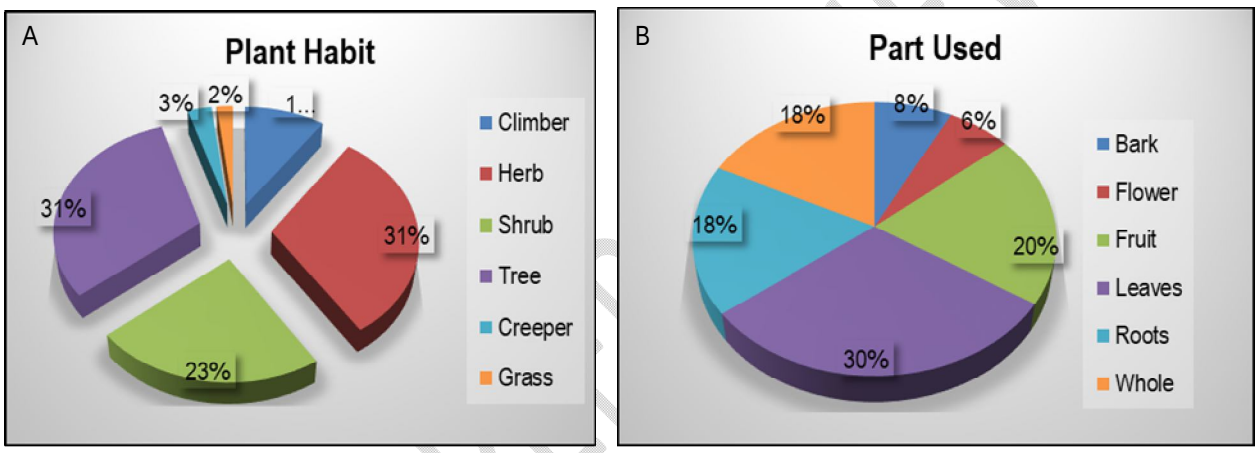

Figure 4. (A) The image represents the habit of plant; (B) Different parts of the plant used by the Buksa tribe for the preparation of the medicine

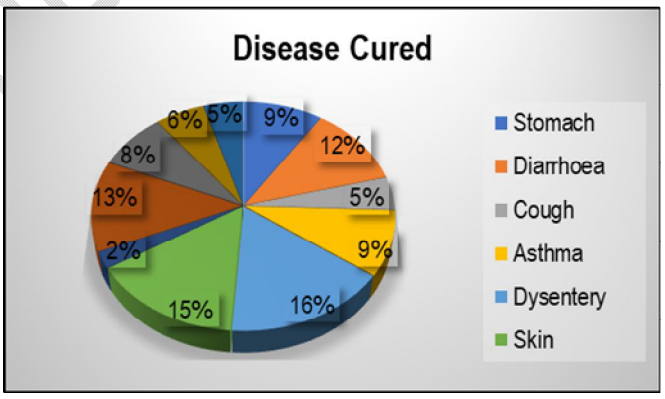

Figure 5: Image represent the percentage wise different diseases cure by Buksa tribe

4. CONCLUSIONS

The Buksa which was known for their practices of medicinal plants and exorcism are today in a state of dilemma that whether to keep it or not. The use of medical plants in this tribal community used to best but it is very sad that this glorious knowledge is declining rapidly. Therefore, it is the need of the hour to document the indigenous medicinal knowledge of the tribals in order to use it in the future. The study suggests to provide training to the youth of the tribals and also to other people in order to save the traditional knowledge.

ETHICAL STATEMENT

Ethical approval was not required for this study because the present study based on observation and respondent based

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Table 1: Enlisting the documented plant species with their local name, botanical name and their uses by the Buksa tribe

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Common name	Botanical name	Family	Habit	Part used	Disease cured	Status
Gunja	*Abrus precatorius* L.	Fabaceae	Climber	Whole	Leukoderma, Oil extract from leaves used for hair growth, Seed powder for intestinal worms	LC
Kanghai	*Abutilon indicum* (L.) Sweet	Malvaceae	Herb	Whole	Ulcers, Headaches, for safe and quick pregnancy the dried powder is given to the bride before 6 months.	LC
Babool	*Acacia nilotica* L.	Fabaceae	Tree	Bark/ Twigs	Oral and Dental hygiene	LC
Meethavish	*Aconitum lethale* Griff.	Ranunuculaceae	Shrub	Roots	Amnesia, Skin problems	LC
Bacch (Sweet Flag)	*Acorus calamus* L.	Acoraceae	Herb	Roots	Diarrhoea, Rib pain	LC
Basinghu/ Basaka	*Adhatoda Vasica* Ness	Acanthaceae	Herb	Whole	Cough, Asthma, Nasal congestion, heavy menstruation	LC
Siris/Shreesh	*Albizia lebbeck (*L.) Benth.	Fabaceae	Tree	Whole	Bark decoction is used as gargle, Twig for brushing teeth, Flower for migraine, Leaves for skin lesions	LC
Piyaz (Onion)	*Allium cepa* L.	Amaryllidaceae	Herb	Bulb	Dandruff, Spice, good for liver and heart	LC
Lehsun (Garlic)	*Allium sativum* L.	Amaryllidaceae	Herb	Bulb	Intestinal infection, Dysentery, Shortness of breath.	LC
Sitawar/Sataw ar	*Asparagus racemosus* Wild.	Asparagus	Climber	Roots	Diarrhoea	EN
Kathal	*Artocarpus heterophyllus* Lam.	Moraceae	Tree	Fruit	Asthma, ringworm, heal cracking of the feet, diabetes, gall stones.	LC
Satyanashi	*Argemone Mexicana* L.	Papaveraceae	Herb	Flower	Warts, skin diseases, leprosy	LC
Neem	*Azadirachta indica* A.Juss	Meliaceae	Tree	Leaves	Ulcers, Skin diseases, Antiworm, Antibacterial, Anticlotting	LC

Brahmi	*Bacopa monnieri* (L,) Wettst.	Scrophulariaceae	Herb	Whole tree	Mental compliance, headache, skin disease	LC
Kala Bansa (Porcupine flower/Vajradanti)	*Barleria prionitis* L.	Acanthaceae	Shrub	Fruit/Flower/ Bark/Leaves	Black Cough, Weakness, increase appetite	NE
Pashana Bheda or Patharphor Buti	*Bergenea ciliata* (Haw.) Sternb.	Saxifragaceae	Herb	Roots	Kidney Stone, fever, dysentery	NE
Bhojpatra	*Betula utilis* D.Don	Betulaceae	Tree	Bark/leaf	Nose bleeding, Dysentery, Diarrhoea.	NE
Semal	*Bombax ceiba* L.	Malvaceae	Tree	Fruit/Flower	Dysentery/Diarrhoea	LC
Patharchatta	*Bryophyllum pinnata* (Lam.) Pers.	Crassulaceae	Herb	Leaves	Kidney Stone	NE
Palash	*Butea monosperma* (Lam.) taub.	Fabaceae	Tree	Flowers	Eye, Chronic fever, Leucorrhoea, leprosy, gout etc	LC
Aankda/aak	*Calotropis gigantea* (L.) Dryand.	Apocynaceae	Shrub	Whole tree	Anti-inflammatory, wound healing, worm infestations, eczema	LC
Rakta Ark/aak	*Calotropis procera* (Aiton) Dryand	Apocynaceae	Shrub	Whole tree	Eye tonics, eczema, wound healing	LC
Bhang	*Cannabis sativa* L.	Cannabaceae	Herb	Leaf	Diarrhoea, Headache	LC
Gotu kola	*Centella asiatica* (L.) Urb.	Apiaceae	Herb	Whole	It boosts memory, removes stains from teeth's, cure skin diseases.	LC
Amaltash	*Cassia fistula* L.	Fabaceae	Tree	Root/Bark/fruits	Migraine, Chest pain, Blood dysentery, Bark is used in skin complaints, fruit in Rheumatism.	NE
Deodar	*Cedrus deodara* (Roxb. Ex D.Don) G.Don	Pinaceae	Tree	Resin/Stem	Bowel, rheumatism, piles	LC
Salera	*Celosia argentea* L.	Amaranthaceae	Herb	Seed/leaves	Diarrhoea, Dysentery	LC
Bathua	*Chenopodium album* L.	Amaranthaceae	Herb	Leaves	Constipation, Cleaning of Stomach	NE
Safed Musli	*Chlorophytum borivilianum* Santapau	Asparagaceae	Herb	Leaves	Spermatohorrhoea,	CE

	& R.R.Fern				Energy booster.	
Kapoor	*Cinnamomum camphora*	Lauraceae	Tree	Leaves	Skin problems	
Dalcheeni/kikhudu	*Cinnamomum zeylanicum*	Lauraceae	Tree	Bark	Sore throat, common cold	LC
Kaduri/Kundru	*Coccinia grandis (*L.) Voigt	Cucurbitacea	Climber	Fruits	Anti-diabetic, good for liver	LC
Jaljamuni/Bajerbel	*Cocculus hirsutus* L.	Menispermaceae	Shrub	Leaf	Dysentery, Diarrhoea	LC
Shankhpushpi	*Convolvulus pluricaulis* Forssk	Convolvulaceae	Herb	Whole tree	Increasing brain memory, headache, stress	VU
Baana/Barna	*Crataevae adansonii*	Capparaceae	Tree	Leaf	Rheumatism	LC
Dhudi	*Cryptolepis dubia* (Burm.f.) M.R. Almeida	Apocynaceae	Shrub	Bark	Rheumatism	LC
Kali Musli/shyam Musli	*Curculigo orchioides* Gaertn.	Hypoxidaceae	Herb	Roots	Testosterone enhancer	NT
Jangalihaldi	*Curcuma longa* L.	Zingiberaceae	Herb	Rhizome	Skin disorders, injury, Indigestion, Heart problems.	LC
Aakash Bel/Amarbel	*Cuscutare flexa* Roxb.	Convolvulaceae	Climber	Leaves/roots	Pneumonia, Bilious disorder	LC
DubhGhas/Dubh	*Cynadon dactylon* (L.) Pers.	Poaceae	Creeper	Whole tree	Rheumatism, Nasal bleeding, Dysentery	NE
Murya ghaas	*Cyperus rotundus* L.	Cyperaceae	Herb	Rhizome	Diarrhoea, Bowel disorder	LC
Makdaghas	*Dactyloctenium aegyptium* (L.) Wild	Poaceae	Grass	leaves	Wounds and ulcers	LC
Sheesham	*Dalbergia sissoo* Roxb. Ex DC.	Fabaceae	Tree	leaf	Dysentery, diarrhoea	LC
Dhatura	*Datura stramonium* L.	Solaneceae	Shrub	Fruit	Headaches, menstural cramps, Asthma	LC
Suralu/ Varahikanda	*Dioscorea bulbifera* L.	Dioscoreaceae	Climber	Rhizome	Improves sperm quality, digestion strength, immunity	LC
Bringhraj	*Eclipta prostrata* Lour.	Asteraceae	Herb	Seed oil	Hair	LC
Bari Dudhi	*Euphorbia hirta* L.	Euphorbiacea	Herb	Extract	Antimalarial, Antifertility, Diarrhoea,	LC

		e			Asthma	
Naagdon	*Euphorbia Tithymaloides L.*	Euphorbiacea e	Shrub	Extract	Diarrhoea, Antimalarial, Asthma	LC
Faguda/Dimru	*Ficus auriculata* Lour.	Moraceae	Tree	Bark	Hydrophobia	LC
Bargad/Banya n	*Ficus benghalensis* L.	Moraceae	Tree	Roots/Leave s/ Latex/Bark	Sexual problems, Women infertility, leukorrhea, Anti diabetic	NE
Gular/Fig	*Ficus racemose* L.	Moraceae	Tree	Latex	Cuts, Boils, Muscular pain, pimples, Scabies, Mouth Ulcers	LC
Peepal	*Ficus religiosa* L.	Moraceae	Tree	Fruit/leaves/b ark	Spermatohorrhoea, Nausea, Diarrhoea	LC
Agnishikha/Ind ra-pushpi	*Gloriosa superb* L.	Colchicaceae	Climber	Leaves	Asthma, juice is effective against lice	LC
Bhimal	*Grewia optiva* J.R. Drumm. Ex Burret	Malvaceae	Shrub	Bark	Shampoo	LC
Marora/ Marorphali	*Helicteres isora* L.	Malvaceae	Shrub	Fruit	Dysentery, Diarrhoea	LC
Ken/kemuk/ku shta/Crepe Ginger	*Hellenia speciosa* (J.Koenig) Govaerts	Zingiberaceae	Herb	Root	Rheumatism	NE
Gurdhal	*Hibiscus sabdariffa* L.	Malvaceae	Shrub	Flower	Hairfall	LC
Inderjoo	*Holarrhena Pubescens* Wall. & G.Don	Apocynaceae	Shrub	Whole tree	Stomach disorder	NE
Papri/Kanju	*Holoptelea integrifolia* (Roxb.)	Ulmaceae	Tree	Seed oil	Rheumatism	NE
Vasa/Adathod a/ Basinga	*Justicia adhatoda* L.	Acanthaceae	Shrub	Leaves/flowe r	Haemorrhage, fever, cough, asthma	LC
Bhondara/ Bakli/Jarul	*Lagerstroemia parviflora* Roxb.	Lythraceae	Tree	Leaves	Fungitoxic	LC
Gumma (Dron-pushpi)	*Leucas aspera* Link.	Lamiaceae	Herb	Flower	Stomach disorders	LC
Mahua	*Madhuca longifolia* J.F.Macbr.	Sapotaceae	Tree	Flower	Diarrhoea, Headache	LC
Aam	*Mangifera indica L.*	Anacardiacea e	Tree	Bark/Fruit	Rheumatism, Dysentery	LC
Bakayan	*Melia azedarach* Linn	Meliaceae	Tree	Leaves	Kidney stones	LC

Pudina	*Mentha longifolia* (L.)	Lamiaceae	Herb	Leaves	Stomach cramps, Acidity, Skin cleanser.	LC
Sharmili/Chui mui/Lajvanti	*Mimosa pudica* L.	Fabaceae	Shrub	Whole tree	Dysentery, Heartburn	LC
Karela	*Momordica charantia* L.	Cucurbitacea	Climber	Fruit/Leaf	Jaundice, for healthy liver, measles, scabies	LC
Sehjan/sarojna /moringa	*Moringa oleifera* Lam.	Moringaceae	Shrub	Fruit/flower	Sugar, Antifungal Hair care.	LC
Shehtoot	*Morus alba* L.	Moraceae	Shrub	Fruits/Leaves	Good for Liver	LC
Gandhela/Curr y patta	*Murraya koenigii* (L.) Spreng.	Rutaceae	Shrub	Stem/bark/Le af	Boils, Dysentery, Diarrhoea	NE
Kela	*Musa acuminata* L.	Musaceae	Climber	Bud/Fruit	Useful in Bile, Antioxidant	LC
Jatamansi	*Nardostachys Jatamansi* (D.Don) DC	Caprifolliaceae	Herb	Root/rhizome	Hair growth, Decoction	CE
Cadamba	*Neolamarckia cadamba* (Roxb.)	Rubiaceae	Tree	Fruit/Leaf/bar k	Diabetes, extract of leaf and bark is used to cure the skin infection	LC
Tambakku/tob acco	*Nicotiana rustica* L.	Solanaceae	Shrub	Leaf	Ring worm, Scorpion stings	NE
HaarSinghaar	*Nyctanthes arbor-tristis* L.	Oleaceae	Shrub	Leaves/Flow ers	Decoction for malaria, intestinal worms etc. also used for hair growth	NE
Tulsi	*Ocimum tenuiflorum* L.	Lamiaceae	Herb	Leaves	Headache/stomach disorders	LC
Bhilmori/Chan geri	*Oxalis corniculata* L.	Oxalidaceae	Creepe er	Leaves	Vitamin C, Jaundice, Insomnia	LC
Amla	*Phyllanthus emblica* L.	Phyllanthacae	Tree	Fruit	Antioxidant, Hair growth.	LC
Chir	*Pinus roxburghii* Sarg.	Pinaceae	Tree	Resin/Stem	Boils, Bone fracture, skin disorder, ulcer	NT
Kuttaghas	*Polypogonmon speliensis* L.	Poaceae	Grass	Roots	To cure mouth ulcers	LC
Aaru	*Prunus persica* (L.) Batsch	Rosaceae	Tree	Seed oil, leaf	Rheumatism, dysentery	NE
Amroodh	*Psidium guajava* L.	Myrtaceae	Tree	Leaves/Fruit	Leaves along with leaves of Sissoo and babool are used in curing of Sugar	NE

Jungli Nashpati	*Pyrus pashia* Buch. - Ham. Ex D.Don	Rosaceae	Tree	Fruit	Conjunctivitis	LC
Sarpgandha	*Rauvolfia serpentina* Benth. ex Kurz	Apocynaceae	Shrub	Root/Fruits	Snake Bite, Arthritis Pain, Fever	EN
Arandi	*Ricinus communis* L.	Euphorbiacea	Shrub	Root	Rheumatism	NE
Gulab/rose	*Rosa* L.	Rosaceae	Climber	Leaf	Skin wounds	LC
Pili-dudhi	*Sonchus arvensis* (L.) Hill	Asteraceae	Herb	Extract	Plant extract is applied to fresh injuries.	LC
Bhilao	*Semecarpus anacardium* L.	Anacardiaceae	Tree	Seed	Rheumatism	NE
Bala/Barial/Jangli Methi	*Sida cordifolia*	Malvaceae	Herb	Whole	Numbness, Muscular pain, joint pain.	LC
Jamun	*Syzygium cumini* (L.) Skeels	Myrtaceae	Tree	Fruit	Immunity, bones strengthening, Asthma.	LC
Kapasi	*Telosma cordata* (Burm.f.) Merr.	Apocynaceae	Creeper	Leaves/Fruits	Anti-Diabetic properties, Stomach problems	NE
Arjun	*Terminalia arjuna* (Roxb.) Ex DC. Wight and Arn	Combretaceae	Tree	Bark	Bone fracture, dysentery	NE
Bahera	*Terminalia bellirica* (Gaertn.) (Roxb.)	Combretaceae	Herb	Leaf	Diarrhoea	DD
Harad	*Terminalia chebula* (Retz.)	Combretaceae	Tree	Fruit	Stomach disorder	LC
Giloy ki Bel	*Tinospora cordifolia* (Wild.) Miers	Menispermaceae	Climber	Stem/branch	Pneumonia/fever/cold	LC
Santhi (sweet punarnava)	*Trianthema portulacastrum* L.	Aizoaceae	Herb	Roots/leaves	Stomachic laxative/ Anaemia	LC
Gokhru (Puncture vine)	*Tribulus terrestris* L.	Zygophyllaceae	Shrub	Fruit/flower/roots	Kidney stone, piles, hormone secretion, urinary problems	LC
Prishthaparni/ Pithavan	*Uraria picta* (Jacq.) Desv.ex DC	Fabaceae	Herb	Whole tree	Healing fractured bones, Gonorrhea, Sexual health	LC
Sambhalu/Sinwali	*Vitex negundo* L.	Verbenaceae	Shrub	Root/leaf/fruit	Rheumatism, Arthritis, Anthelmenthic, Sprain, Eye inflammation	LC
Ashwagandha	*Withania somnifera* (L.) Dunal	Solanaceae	Herb	Fruit/roots	Stress resistant, immune system, supports healthy back	EN

					and joints	
Adrak	*Zingiber officinale* Roscoe	Zingiberaceae	Herb	Rhizome	Cough, Cold	LC
Ber	*Ziziphus mauritiana* Lam.	Rhamnaceae	Shrub	Bark	Diarrhoea	LC
NT- Near Threatened, LC -Least Concern, DD – Data deficient, CE – Critically Endangered, EN- Endangered, VU – Vulnerable						