



Ethnobotanical Study of Village Darangal Kambat Tehsil Samarbagh, District Dir Lower, Khyber Pakhtunkhwa Pakistan

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ABSTRACT

A total of 50 species of plants belonging to 35 families were collected from the research area Darangal Dir Lower. Details about their local names, descriptions of plants, and ethno-medicinal uses were also recorded. These medicinal plants are used for different types of diseases such as respiratory disease, colds, diabetes, kidney disease, fever, pain, hair problems, anti-bacterial, anti-ulcer, cough, and skin disease. The results indicated that the medicinal plants in the study area a wide medicinal uses and important value as recorded by the local community. These plants have much importance and medicinal uses for local people and are a cheap source of cures because these are mostly used by the poor mass of the community. The composed plant's species were utilized as remedial plants pursued via vegetables along with food, 12 species were used for fuel and wood, 10 species were used for furniture, 4 species were used as thatching, 2 species were used as a hedge, 2 species were used for fruits and 6 species were used for ornamental purposes. The dominant families of the research area were Rosaceae have 10 species, Fabaceae and Poaceae each have 9 species. Lamiaceae and Solanaceae each have 8 species. Brassicaceae, Cucurbitaceae, Moraceae, Papilionaceae, Ranunculaceae and Rotaceae each have 5 species. Euphorbiaceae, Labiatae, Malvaceae and Rhamaceae each have 4 species. Leaves of the plant were mostly utilized in the preparation of therapeutic recipes. These medicinal recipes were used mostly orally in the form of decoction. Traditional methods of collection and poor post-harvest also decreased the quality of these medicinal plants. Deforestation, soil erosion as well as increase in inhabitants were also solemn intimidation to the valuable plants of the region. The current work is an initiation step toward the documentation of these valuable plants. The flora of the area requires proper conservation for the better future of Darangal.

1. INTRODUCTION

1.1 Introduction to study area:

District Dir Lower is located between 340-370 to 350-07 North Latitudes and 710-310 to 720-14 East longitudes, (Ullah et al., 2022). District Lower Dir is located in the north-western part of Khyber Pakhtunkhwa province and is spread over an area of 1583 square kilometers. This area is superficially hilly. This region is connected on the north with Upper Dir, and Swat on the east, in the South borders with Malakand District, while Afghanistan and Bajaur districts lie on the west side (Ullah et al., 2021). At the time of independence, Dir was a princely state ruled by Nawab Shah Jehan Khan. It was merged with Pakistan in 1969 and later declared a district in 1970. On 13 August 1996, Districts Dir was bifurcated into two separate states, i.e., District Upper Dir and District Lower Dir (Ullah et al., 2017). The district is divided into two main Subdivisions; Samar Bagh and Timergara. The district has seven Tehsils i.e., Balambat, Adenzai, Lal Qilla, Munda, Khall, Samar Bagh, and Timergara (Ullah et al., 2023.). District Dir Lower is further divided into 37 UCs and 1,023 villages (census report of District in, 1998). Peshawar is connected to Dir via Charsadda and Malakand. (Ahmad et al., 2023). Kambat is a union council of the Lower Dir District in the Khyber Pakhtunkhwa province of Pakistan. Lower Dir District has 37 union councils with a population of 797,852, according to the 1998 census report. The population growth rate of the Lower Dir District was 3.42% per annum between the 1981 and 1998 censuses (Ajaib et al., 2010). The major tribes are Yousafzai, Mashwani, Saddat, Tarran, Tajak, Atrafi, Khilji, Sahibzadgan, Mast Khel, Shinwari, Umer Khel, Swati, Mayar, Gujar, Sadat, Mashwani, Tajak, Wardag and Sultan Kheel etc (zaman et al., 2022). Ethnobotany is the study of the interaction between plants and people, with a particular emphasis on traditional tribal cultures. According to the World Health Organization (WHO) about 65-80% of the world's population in developing countries depends essentially on plants for their primary healthcare due to poverty and lack of access to modern medicine (Usma et al., 2022). Plants are significant sources of medicines that are used in the treatment of various categories of human diseases (Ahmad et al., 2023). Historically all medicinal preparations were derived from plants, whether in the simple form of plant parts or in the more complex form of crude extracts, mixtures, etc. Today a

substantial number of drugs are developed from plants that are active against a number of diseases (Principe, et al, 2005) and the use of medicinal plants is well known among the indigenous people in rural areas of many developing countries. Plants, especially the higher ones have been described as the sleeping giants of drugs and these medicinal plants have been screened for their chemicals that are potentially potent (Bahadur et al. 2023). In 2002, herbal therapy was the leading CAM (complementary and alternative medicine) modality, consumed by 38 million U.S. adults. In 1997, 12.1% of the U.S. population used herbal medicine, whereas, by 2002, this figure increased to 18.6 % (Zaman et al., 2022). Moreover, sales of herbal medicines skyrocketed from \$200 million in 1988 to \$3.5 billion in 1997 and \$4.4 billion in 2005. The naturopathic doctor Michael Murray has fittingly pointed to a “herbal renaissance” resulting from advances in pharmacological techniques, increased scientific knowledge of medicinal compounds, and enhanced public acceptance of natural, or complementary, therapies (Hameed et al., 2022). Using ethnobotanical medicines from various global traditions for the treatment of cancer as examples, this article examines the utilitarian and anthropocentric ethics surrounding therapeutic flora. While several key ethnobotanical species for cancer treatment will be foregrounded in this article, I recognize that the ethics of reciprocity relate to all therapeutic uses of medicinal plants (Ajayi and Moody, 2015). However, ethnobotanical species for cancer treatment offer salient examples of the need for reciprocity ethics; conventional medical practices prioritize the alleviation of human suffering, but marginalize the importance of giving back to plants, of returning the favor, in the spirit of reciprocity. The conservation of medicinal plants in the wild ensures an ongoing reservoir of therapeutic plant compounds in the future (Arshad, 2021). However, while we consume ethnobotanical plants and contribute to (or subtract from) the viability of their habitats, what do we return to the plants from which the medicines have been derived? In contrast to the utilitarian ethics of medicinal plants, the value of reciprocity foregrounds appropriate and sustained exchanges between people and flora that are not based on use-value or virtue-theoretic alone. Leslie Francis defines reciprocity as “the idea of actions-in-return that are not founded in voluntary agreements or contracts” and “doing one’s part to produce a common good when especially because others are doing theirs (Ahmad, 2023).

2. MATERIALS AND METHODS:

The present study was carried out from April 2021 to April 2022. During this time the project area was visited once a month for the collection of data pertinent to the ethnobotany, conservation and plant diversity of the area. Each study trip was planned and executed effectively. The research project was completed in three phases. These include literature collection, field trips for data collection and documentation of the data obtained from Darangal Kambat Tehsil Samarbagh Dir Lower.

2.1. Field Work

Fieldwork was carried out in order to investigate the ethnobotany, plant diversity, and conservation status of the flora of Darangal Kambat Tehsil Samarbagh Dir Lower. The fieldwork included interviews, observations, and guided field walk/transect walks. Two methods were frequently used during the fieldwork.

2.2. Observations

This method was based on observations in the field conditions. These observations were made while visiting different villages. During this process, local methods of medicinal plant collection, storage, drying, harvesting time, processing, and utilization were observed and noted. In the meantime, all the plants during the flowering/fruitlet stage, were collected, pressed, and preserved.

2.3 Botanical Identification

Plant samples collected throughout the fieldwork were taxonomically identified by using Flora of Pakistan and placed in the Herbarium of Govt Ghazi Umara Khan Degree College Samarbagh. The voucher specimens were kept after broad documents for future reference. From Medicinal Plants Names Services (mpns.kew.org/mpns) the correct name of plants was confirmed.

2.4. Interviews

During fieldwork, interviews were conducted with the local inhabitants, selected informants, the herbalists

Plant No: 2

Habitat: Dry places

Flowering Season: March-April

'hakims' (local physicians of the eastern system of medicine), pansaries (medicinal plants sellers in the local markets). Questionnaires were being adopted during the surveys in order to get a qualitative and participatory approach about the plant resources and their utilization by the local people. Questions concerning the utility of different plants, quantity of plants used, rate of consumption, availability, economics/market value, and fuel wood /fodder head loads were asked.

2.5. Ethnobotany

The plants of ethnobotanical importance were collected and classified on the basis of their utility in the area. Local people including plant collectors and others on the basis of age group were interviewed for ethnobotanical information about the area. The timings for fieldwork were selected according to the growth and collection season of the plants. Population size and its distribution, languages, ethnic affiliation, history of settlement, major social groups or classes, productive activities, subsistence crops, migration trends etc. were also explored during the fieldwork.

3. RESULTS

A total of 50 species of plants belonging to 35 families were collected from the research area Darangal Dir Lower. Details about their local names, description of plant, and ethno medicinal uses were also recorded. The details description is given below.

Plant No: 1

Botanical Name: *Ajuba bracteosa* Wall. Ex Benth

English Name: Bugle

Local Name: Khwaga bootei, Gooti

Family: Lamiaceae

Habit: Shade-loving herb growing in crevices

Habitat: Dry Place

Flowering Season: February – June

Parts used: Whole plant

Medicinal uses:

The plant is used in internal colic, angina cough, and fever and for the treatment of achnaes. Decoction is useful for curing jaundice, hypertension, refrigerant and sore throat.

Parts used: Leaves, shoots, and seeds

Local Name: Jaukay

Family: Asteraceae (Compositae)

English Name: Viagte wormwood

Habit: Herb

Botanical Name: *Artemisia scoparia* Linn

Medicinal uses: Respiratory stimulant, anthelmintic and purgative. Used as a cure for earache

Plant No: 3

Botanical Name: *Isodon rugosus* (Wall. ex Bth.) Codd

English Name: Ajwain

Local Name: Spairkay

Family: Lamiaceae

Habit: Herbs

Habitat: Dry place

Parts used: Leaves

Medicinal uses:

The filtrate is kept for the whole night in the open sky and is drunk early in the morning before breakfast for sore throat. Some people extract juice from its leaves, mix it with water, shake it well, and give it to children for cough.

Plant No: 4

Botanical Name: *Mentha arvensis* L.

English Name: Corn Mint

Local Name: Pudina

Family: Lamiaceae

Habit: Herb

Habitat: Moist places

Flowering season: July-August

Parts used: Whole plant

Medicinal uses:

The green and dried leaves are used as antispasmodic, refrigerant, stimulant, diuretic, and aromatic. The decoction of the leaves and lemon grass prepared and used as febrifuge in fever. It is a honey- bee species.

Plant No: 5

Botanical Name: *Melia azedarach* L.

English Name: Chain berry Tree

Local Name: Hindustanai Shandai (Toora Shandai)

Family: Meliaceae

Habit: A medium sized tree

Habitat: Dry soil

Flowering season: May-July

Parts used: Whole plant

Medicinal uses:

The bark used as cathartic, emetic and vermifuge. The fruit used as anthelmintic and sexual tonic. The decoction of leaves employed in hysteria and skin diseases. The leaves extract and fruit powders used

for liver complaints, night blindness, vomiting in fever and worms.

Plant No: 6

Botanical Name: *Olea ferruginea* Royle

English Name: Indian olive

Local Name: Khona

Family: Oleaceae

Habit: Tall tree

Habitat: Dry places

Flowering Season: April – May

Parts used: Fruits, leaves and trunk

Medicinal uses:

The fruit is antidiabetic. The leaves are used for toothache and throats soar. The leaves and bark are bitter and used as an astringent, antiseptic, antiperiodic, diuretic and tonic.

Plant No: 7

Botanical Name: *Monotheca buxifolia* (Falc.) A. D

English Name: Sideroxylon

Local Name: Gorgowara

Family: Sapotaceae

Habit: Medium sized tree

Habitat: Dry, exposed, sunny places

Flowering season: April-June

Parts used: Whole plant

Medicinal uses:

Fruits are edible, used as an astringent, refrigerant and to improve digestion. The plant grazed by goats, is used as fuel wood and as a hedge plant. The plant is used as fodder and for fencing.

Plant No: 8

Botanical Name: *Paeonia emodi* Wall. Ex Royle

English Name:

Local Name: Mamaikh

Family: Paeoniaceae

Habit: A perennial herb

Habitat: Dry place

Flowering Season: April-May

Parts used: Rhizomes, roots and seeds

Medicinal uses:

Roots and rhizomes are used to cure backache, dropsy and epilepsy. It is also a tonic, emetic, cathartic, blood purifier and colic. The tubers are used medicinally in uterine and nervous Diseases. The seeds are used as purgative and emetic.

Plant No: 9

Botanical Name: *Tribulus terrestris* L.
English Name: Land caltrops
Local Name: Markondai
Family: Zygophyllaceae
Habit: Herb
Habitat: Dry Place
Flowering period: April-August
Parts used: Fruits, roots
Medicinal uses:
The fruits and roots are given for urinary disorders and chronic cystitis. Its general use is an aphrodisiac. The fruits and seeds are mixed with honey and used for curing impotence.

Plant No: 10

Botanical Name: *Verbascum thapsus* L.
English Name: Kashmir Salvia
Local Name: Kharghwag
Family: Scrophulariaceae
Habit: An annual herb
Habitat: Dry Place
Flowering Season: May to August
Parts used: Leaves, flowers, seeds
Medicinal uses:
Leaves and flowers are used against cough and pulmonary diseases in the form of a paste. The seeds are narcotic and used as a fish poison. Medicinally the plant used as demulcent, emollient, stimulant and vermifuge.

Plant No: 11

Botanical Name: *Accacia nilotica* (L.) Delile
English Name: Gum Arabic
Local Name: Kikar
Family: Mimosaceae
Habit: Tree
Habitat: Dry places
Flowering Season: May to August
Parts used: Flower
Medicinal uses:
Flower along with sugar is used for cough. In traditional medicine, *Acacia nilotica* is widely used. This plant has anti-microbial, anti-plasmodial and antioxidant activity and used for treatment of human immunodeficiency virus, hepatitis C virus and cancer.

Plant No: 12

Botanical Name: *Acacia modesta* Wall
English Name: Senglia Modesta

Local Name: Palosa
Family: Mimosaceae
Habit: Tree
Habitat: Dry Places
Flowering Season: May to August
Parts used: Gum and wood
Medicinal uses:
Gum is used as a tonic. And used for cough. Traditionally, *Acacia modesta* Wall has been used to treat a number of ailments, such as leprosy, wound healing, dysentery, cough, venereal diseases, bacterial infection, and backache. In the present study, the work has been extended to examine the anti-diabetic, cytotoxic, and proliferative potential of this valuable plant.

Plant No: 13

Botanical Name: *Chenopodium batrys* L.
English Name: Goosefoot
Local Name: Kharawa Sarmay
Family: Chenopodiaceae
Habit: Herb
Habitat: Dry place
Flowering Season: April to August
Parts used: Whole plant
Medicinal uses:
Use for washings of utensils, fuel, cooling agent and for infection with water and used for blood purification. *Chenopodium botrys* has been used as an antispasmodic, anti-asthmatic, anthelmintic, and spice in traditional medicine.

Plant No: 14

Botanical Name: *Dodonea viscosa* (L.) Jacq
English Name: Hop bush
Local Name: Ghwarrasky
Family: Sapindaceae
Habit: Shrub
Habitat: Dry place
Flowering Season: April to August
Parts used: Whole plant
Medicinal uses:
Ash is used to treat burns and skin infections. Water extracts of leaves is used as antihelmentic.

Plant No: 15

Botanical Name: *Zanthoxylum armatum* DC
English Name: Winged prickly ash
Local Name: Dambara
Family: Rutaceae

Habit: Shrub
Habitat: Dry place
Parts used: Fruit
Flowering Season: April to August
Medicinal uses:
Fruit is used for treating stomach disorders. *Zanthoxylum armatum* used as a medicine from ancient time for cure of various diseases such as toothache and problems related to tooth, asthma, used for gum bleeding, fever, dyspepsia, and tonics.

Plant No: 16

Botanical Name: *Diospyros kaki* L
English Name: Japanese persimmon
Local Name: Amlook
Family: Ebenaceae
Habit: Tree
Habitat: Dry Place
Flowering Season: April to August
Parts used: Fruit
Medicinal uses:
Fruit is suitable for eating; Leaves are utilized as food and fuel. Leaves, known as Shi Ye (in Chinese), have a long history as a Chinese traditional medicine for the treatment of ischemia stroke, angina, internal hemorrhage, hypertension, atherosclerosis and some infectious diseases

Plant No: 17

Botanical Name: *Eucalyptus lanceolatus* L.
English Name: Eucalyptus
Local Name: Laachi
Family: Myrtaceae
Habit: Tree
Habitat: Dry place
Parts used: Seed and wood
Flowering Season: April to August
Medicinal uses:
The powdered seeds are used to suppress cough. Herbal remedies recommend using fresh leaves in a gargle to relieve a sore throat, sinusitis, and bronchitis. Also, eucalyptus oil vapor appears to act as a decongestant when inhaled. It is a popular home remedy for colds and bronchitis.

Plant No: 18

Botanical Name: *Morchella esculenta* L.
English Name: Morel
Local Name: Khosay
Family: Helvelaceae

Habit: Mushroom
Habitat: Dry Place
Flowering Season: April to August
Parts used: Whole body
Medicinal uses:
Used as body tonic and nutritive food and also edible. It may be used as a purgative, laxative, body tonic, emollient and also used for stomach problems, healing the wound and for general weakness. It can be poisonous if eaten raw and produces so many adverse reactions if not used properly.

Plant No: 19

Botanical Name: *Ricinus communis* L.
English Name: Castor been
Local Name: Herhanda
Family: Euphorbiaceae
Habit: Shrub
Habitat: Dry Place
Flowering Season: April to August
Parts used: Seed and leaves
Medicinal uses:
Seeds are used for stomachache and in bowels problems. Seed oil is specifically used therapeutic for constipation. Leaves are emetic, narcotic.

Plant No: 20

Botanical Name: *Viola canscens* Wall. Ex Roxb
English Name: Himalayan White Violet
Local Name: Benafsha
Family: Violaceae
Habit: Herb
Habitat: Dry Place
Flowering Season: April to August
Parts used: Whole plant
Medicinal uses:
Plants were used during cold, cough, asthma, headache and .and leaves are also mix in tea and used against chest disease.

Plant No: 21

Botanical Name: *Rose indica* L.
English Name: Rose
Local Name: Gulab
Family: Rosaceae
Habit: Shrub
Habitat: Found in most part of the country
Flowering Season: April to August
Parts used: Flower, leaf and stems
Medicinal uses:

It is useful in heart disease, eye problem and improves high blood pressure. Herbal tea prepared from rose petal is very suitable to control acidity. Rose petals are used for the formation of perfume.

Plant No: 22

Botanical Name: *Equisetum arvense* L.

English Name: Field Horsetail

Local Name: Bandakay

Family: Equisetaceae

Habit: Herbs

Habitat: Dry Place

Parts used: Shoots

Spring Seasons: March to April

Medicinal uses:

The extracts of shoots are mixed with mustard oil and used as a hair tonic and against lice. It is used for cleaning and washing utensils.

Plant No: 23

Botanical Name: *Helianthus annuus* L.

English Name: Sun Flower

Local Name: Nwar parast

Family: Asteraceae

Habit: Shrubs

Habitat: Agricultural Field

Flowering Season: April to August

Parts used: Whole plant

Medicinal uses:

Oil is used for cooking. Plant is ornamental. use as a remedy for pulmonary affections, a preparation of the seeds has been widely used for cold and coughs, in the Caucasus the seeds have served as a substitute for quinine in the treatment of malaria

Plant No: 24

Botanical Name: *Hibiscus esculentus* (L.) Moench

English Name: Lady Finger

Local Name: Bandai

Family: Malvaceae

Habit: Herbs

Habitat: Agricultural Land

Flowering Season: April to August

Parts used: whole plant

Medicinal uses:

Used for wounds and boils. Leaves are diuretic, emollient. Fruit is edible. An infusion of the roots is used in the treatment of syphilis. The juice of the roots is used externally in Nepal to treat cuts, wounds and boils. The leaves furnish an emollient

poultice. A decoction of the immature capsules is demulcent, diuretic and emollient.

Plant No: 25

Botanical Name: *Plantago lanceolata* L.

English Name: Ribwort plantain

Local Name: Ghawajabai

Family: Plantaginaceae

Habit: Herbs

Habitat: Dry Place

Flowering Season: April to August

Parts used: Leaves, fruits, seeds

Medicinal uses:

Extract of leaves is applied to sores, wounds and inflamed surfaces. The seeds are laxative and are used for dysentery and mouth diseases. The leaves slightly rubbed and used as antifungal in athlete's foot disease.

Plant No: 26

Botanical Name: *Zizyphus oxyphylla* Edgew

English Name: Pointed-Leaf jujube

Local Name: Elanai

Family: Rhamnaceae

Habit: Shrubs

Habitat: Dry Place

Flowering Season: April to August

Parts used: Roots, fruits

Medicinal uses:

The roots are used for curing jaundice. The fruits are edible and used for gas troubles. Also grown as hedge plant.

Plant No: 27

Botanical Name: *Solanum nigrum* L

English Name: European black nightshade

Local Name: Karmacho

Family: Solanaceae

Habit: Herbs

Habitat: Dry place

Flowering Season: April to August

Parts used: Vegetative parts

Medicinal uses:

Fodder of low quality. Drinking water after eating this plant may cause flatulence and prove fatal to cattle. It has been used traditionally for the treatment of bacterial infections, cough and indigestion. This plant has also been investigated for ant proliferative.

Plant No: 28

Botanical Name: *Datura stramonium* L.
English Name: Jimsonweed
Local Name: Batura
Family: Solanaceae
Habit: Herbs
Habitat: Dry place
Flowering Season: April to August
Parts used: Leaves, seeds
Medicinal uses:
Green leaves are used for softening the boils. Seeds are smoked for narcotic action. Seeds and leaves are used as anodyne. The juices of flowers are useful for earache.

Plant No: 29

Botanical Name: *Brassica campestris* L.
English Name: Mustard
Local Name: Sharrsham
Family: Brassicaceae
Habit: Herb
Habitat: Moist, dry and sandy places
Flowering Season: March - April
Parts used: Leaves, seeds and whole plant
Medicinal uses:
Used for headache, used for hair growth, used for hair thickness and used for muscular pain of the body. Oil is obtained from seeds and used for body massaging and hairs.

Plant No: 30

Botanical Name: *Solanum virginisnum* L.
English Name: Thorny Nightshade or Yellow Berried Nightshade
Local Name: Maraghony
Family: Solanaceae
Habit: Herb
Habitat: Dry place
Flowering Season: March – April
Parts used: Fruit extract
Medicinal uses:
Used for the treatment of teeth ache. Used for the opening of sneezing. Fruit is to be chewed and stayed in mouth. Fruit extract in put into nose for opening sneezing

Plant No: 31

Botanical Name: *Cyperus rotundus* L.
English Name: Coco Grass

Local Name: Drab
Family: Cyperaceae
Habit: Herb
Habitat: Dry place
Flowering Season: May to August
Parts used: Whole plant
Medicinal uses:
Use for fodder and fuel. *Cyperus rotundus* L. is a medicinal herb traditionally used to treat various clinical conditions at home such as diarrhea, diabetes, paresis, and inflammation, malaria, and stomach and bowel disorders.

Plant No: 32

Botanical Name: *Vigna unguiculata* L.
English Name: Cowpea
Local Name: Lobya
Family: Fabaceae
Habit: Shrub
Habitat: Cultivated Fields
Parts used: Seeds
Medicinal uses:
Used as food and for kidney stone. Used to treat epilepsy, bilharzia, chest pains and constipation.

Plant No: 33

Botanical Name: *Typha angustata* Bory & Chaub.
English Name: Typha Angustifolia
Local Name: Lokha
Family: Typhaceae
Habit: Herb
Habitat: Moist place
Parts used: Whole plant
Medicinal uses:
It is used as thatching material. Leaves are use as fodder. is an Ayurvedic herb used to treat bleeding disorders, difficulty to pass urine. It detoxifies breast milk, semen, ovum, menstrual blood and urine. It acts as diuretic and hemostatic.

Plant No: 34

Botanical Name: *Oryza sativa* L.
English Name: Rice
Local Name: Shoola
Family: Poaceae
Habit: Herb
Habitat: Moist place
Flowering Season: May to August
Parts used: Whole plant
Medicinal uses:

It is used for heart diseases, diabetes and also used for a food and fodder. Sticky rice often is used to treat heart-burn, stomach upsets and indigestion. Brown rice extracts had been utilized to treat warts, breast and stomach cancer and also many parasitic diseases.

Plant No: 35

Botanical Name: *Vitex negundo* L.

English Name: Chines chaste tree

Local Name: Marvandai

Family: Lamiaceae

Habit: Shrub

Habitat: Dry Place

Parts used: Whole plant

Medicinal uses:

Used as digestive problems and fuel. These bioactive compounds exhibit anti-inflammatory, antioxidant, and antidiabetic, anticancer, antimicrobial. Typically known for its role in the modulation of cellular events like apoptosis, cell cycle, and motility of sperms, polycystic ovary disease, and menstrual cycle.

Plant No: 36

Botanical Name: *Cestrum nocturnum* L.

English Name: Lady of the Night

Local Name: Rat ki rani

Family: Solanaceae

Habit: Shrub

Habitat: Dry Place

Parts used: Whole plant

Medicinal uses:

Used for decorative purposes. It is also used as a hedge plant and cultivated as a medicinal plant. The medicinal properties of night blooming jasmine include antioxidant, anti-hyperlipidemia, hepatoprotective, analgesic, antifungal, anti-convulsant, anti-HIV and larvicidal activities.

Plant No: 37

Botanical Name: *Tagetes minuta* L.

English Name: Tagetes

Local Name: Dambar Gully

Family: Asteraceae

Habit: Herb

Habitat: Moist Place

Flowering Seasons: June – July

Parts used: Whole plant

Medicinal uses:

Different plants can be safe from nematodes and use ornamentally. Remedy for colds, respiratory inflammations, stomach problem, anti-spasmodic, anti-parasitic, anti-septic, insecticide and sedative.

Plant No: 38

Botanical Name: *Parthenium hysterophorus* L.

English Name: Santa Maria fever few

Local Name: Zangley Tarkha

Family: Asteraceae

Habit: Herb

Habitat: Dry Place

Parts used: Whole plant

Medicinal uses:

Fodder and fuel. Remedy for skin inflammation, rheumatic pain, diarrhea, urinary tract infections, dysentery, malaria and neuralgia.

Plant No: 39

Botanical Name: *Ficus carica* L.

English Name: Fig

Local Name: Inzar

Family: Moraceae

Habit: Medium sized cultivated tree

Habitat: Dry Place

Flowering Season: Summer.

Parts used: Fruits, latex

Medicinal uses:

Fruits, both in dry or fresh form, are edible. It is laxative and demulcent, used in constipation, piles and urinary bladder problems. The latex is used against warts and to remove spines and thorns easy.

Plant No: 40

Botanical Name: *Nasturtium officinale* R. Br

English Name: watercress

Local Name: Tarmira

Family: Brassicaceae (Cruciferae)

Habit: A perennial herb of moist habitats

Habitat: Moist Place

Flowering Season: March-Aug.

Parts used: Vegetative portion

Medicinal uses:

A vegetable, salad and pot-herb. It is antiscorbic, appetizer, diuretic and used in chest infections and stomachache. Some people also used in heart and kidney troubles.

Plant No: 41

Botanical Name: *Narcissus poeticus* L
English Name: poet's daffodil
Local Name: Goli Nargas
Family: Amayrlidaceae
Habit: Herb
Habitat: Moist and Dry Place
Parts used: Flowers
Medicinal uses:
It is used for ornamental purposes. Indeed, powerful anticancer properties of *Narcissus poeticus* L. were already known to the Father of Medicine, Hippokrates, who recommended a pessary prepared from narcissus oil for the treatment of uterine tumors.

Plant No: 42

Botanical Name: *Papaver somniferum* L
English Name: bread seed poppy
Local Name: Apium or Opium
Family: Papaveraceae
Habit: Shrub
Habitat: Dry Place
Parts used: Leaves and fruit
Medicinal uses:
The capsule is cut with blade and removes "charse" farm them. Relive pain, Hypnotic, Sedative, Headache, Diarrhea and Dysentery. Seed are nutritive and also used for cough.

Plant No: 43

Botanical Name: *Amaranthus viridis* L.
English Name: slender amaranth
Local Name: Chorlai
Family: Amaranthaceae
Habit: Herb
Habitat: Dry Place
Parts used: Leaves
Medicinal uses:
For Diuretic, lithasis, headache swelling and used food and fodder. Traditional Ayurvedic medicine as antipyretic agents, also for the treatment of inflammation, ulcer, diabetic, asthma and hyperlipidemia.

Plant No: 44

Botanical Name: *Fumaria indica* (Husskn.) H.N.
Pugsley
English Name: Fumitory

Local Name: Shahtra
Family: Fumariaceae
Habit: Herb
Habitat: Dry Place
Parts used: Whole plant
Medicinal uses:
It is used as a fodder as well as fuel. Shoots are also used in diarrhea, blood purifier and fever. *Fumeria indicia* is used in aches and pains, diarrhea, fever, influenza, liver complaints, vomiting, constipation, dyspepsia, blood purification, leucoderma, anthelmintic, diuretic, diaphoretic and, in combination with black pepper, for jaundice.

Plant No: 45

Botanical Name: *Medicago denticulata* Willd
English Name: California bur clover
Local Name: Feshtary
Family: Fabaceae
Habit: Herb
Habitat: Moist Place
Parts used: Leaves
Medicinal uses:
Used as food and for sugar control. It is used in the treatment of heart disease, stroke, cancer, diabetes, indigestion, halitosis, constipation, and menopausal disorders in women.

Plant No: 46

Botanical Name: *Taraxicum officinale* (L.)
English Name: dandelion
Local Name: Ziar gully
Family: Asteraceae
Habit: Herb
Habitat: Dry Place
Parts used: Roots
Medicinal uses:
Roots are used in diabetes and for kidney problems. Fresh or dried dandelion herb is also used as a mild appetite stimulant, and to improve upset stomach. The root of the dandelion plant may act as a mild laxative and has been used to improve digestion. Preliminary research suggests that dandelion may help improve liver and gallbladder function.

Plant No: 47

Botanical Name: *Pinus roxburghii* Sargent
English Name: Chir pine or longleaf Indian pine
Local Name: Nakhtar

Family: Pinaceae

Habit: Tree

Habitat: Dry Place

Parts used: Whole tree

Medicinal uses:

The resin locally known, as "Jaula" is a stimulant used for ulcers, snakebites, scorpion stings and skin diseases. It is a blood purifier. Wood is an aromatic, antiseptic, deodorant, and diaphoretic, stimulant and is used in the burning the body, cough, fainting and ulceration. Wood is used as timber in construction, and makes a good fuel.

Plant No: 48

Botanical Name: *Euphorbia helioscopia* L

English Name: Sun spurge

Local Name: Mandarro

Family: Euphorbiaceae

Habit: Herb

Habitat: Moist and damp places

Parts used: Juice of leaves and root

Medicinal uses:

Leaves juice is used against scorpions and snack biting. Used for the removal of intestinal parasites. Help in the treatment of chronic coughing and dysentery. Seed are purgative. Latex is used for skin diseases and to extract spine from skin.

Plant No: 49

Botanical Name: *Artemisia maritime* L.

English Name: Sea wormwood

Local Name: Tarkha

Family: Asteraceae

Habit: Herbs

Habitat: Dry Place

Parts used: Whole plant

Medicinal uses:

Use as shelter, fuel, Cough, cold, and anemia. It is used mainly as a tonic to the digestive system, in treating intermittent fevers and as a vermifuge. The leaves and flowering shoots are anthelmintic, antiseptic, antispasmodic, carminative, cholagogue, emmenagogue, febrifuge, stimulant, stomachic, tonic and vermifuge

Plant No: 50

Botanical Name: *Indigofera articulate gouan* (L)

English Name: Indigo

Local Name: Ghwarega

Family: Papilionaceae.

Habit: Shrub

Habitat: Mountain Areas

Parts used: Whole plant

Medicinal uses:

Use as a fuel and shelter also used is fodder of cattle. Pain, respiratory diseases, diarrhea, wound healing. Is *Indigofera* a medicinal plant *Indigofera* species are widely employed in traditional medicine all around the world, against many ailments.

Table: 1 Plants used for Fuels

S.NO	Botanical Name	Local name	Family
1.	<i>Melia azedarach</i> L	Toora shandai	Meliaceae
2.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
3.	<i>Monothecha buxifolia</i>	Gorgowara	Sapotaceae
4.	<i>Verbascum thapsus</i> L	Kharghwag	Scrophulariaceae
5.	<i>Accacia nilotica</i>	Kikar	Mimosaceae
6.	<i>Acacia modesta</i> Wall	Palosa	Mimosaceae
7.	<i>Chenopodium batrys</i> L	Kharawa Sarmay	Chenopodiaceae
8.	<i>Zanthoxylum armatum</i> DC	Dambara	Rutaceae
9.	<i>Diospyros kaki</i>	Amlook	Ebenaceae
10.	<i>Eucalyptus lanceolatus</i> L	Laachi	Myrtaceae
11.	<i>Zizyphus oxyphylla</i> Edgew	Elanai	Rhamnaceae
12.	<i>Cyperus rotundus</i> L	Drab	Cyperaceae
13.	<i>Vitex negundo</i> L.	Marvandai	Lamiaceae
14.	<i>Parthenium hysterophorous</i> L.	Zangley Tarkha	Asteraceae
15.	<i>Amaranthus viridis</i> L	Chorlai	Amaranthaceae
16.	<i>Pinus roxburghii</i> Sargent	Nakhtar	Pinaceae
17.	<i>Artemisia maritime</i> L.	Tarkha	Asteraceae

18.	<i>Indigofera articulate</i> gouan (L	Ghwarega	Papilionaceae.
19.	<i>Fumaria indica</i>	Shahtra	Fumariaceae

Table: 2 Plants used for Furniture

S.NO	Botanical Name	Local name	Family
1.	<i>Melia azedarach</i> L	Toora shandai	Meliaceae
2.	<i>Pinus roxburghii</i> Sargent	Nakhtar	Pinaceae
3.	<i>Acacia modesta</i> Wall	Palosa	Mimosaceae
4.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
5.	<i>Monothea buxifolia</i>	Gorgowara	Sapotaceae

Table: 3 Plants Used for Fodder

S.NO	Botanical Name	Local name	Family
1.	<i>Monothea buxifolia</i>	Gorgowara	Sapotaceae
2.	<i>Solanum nigrum</i> L	Karmacho	Solanaceae
3.	<i>Cyperus rotundus</i> L.	Drab	Cyperaceae
4.	<i>Typha angustata</i> Bory & Chaub.	Lokha	Typhaceae
5.	<i>Oryza sativa</i> L	Shoola	Poaceae
6.	<i>Parthenium hysterophorous</i> L.	Zangley Tarkha	Asteraceae
7.	<i>Amaranthus viridis</i> L.	Chorlai	Amaranthaceae
8.	<i>Fumaria indica</i>	Shahtra	Fumariaceae

Table: 4 Plant used as Vegetable

S.NO	Botanical Name	Local name	Family
1.	<i>Mentha arvensis</i>	Pudina	Lamiaceae
2.	<i>Hibiscus esculentus</i> (L.) Moench	Banda	Malvaceiae
3.	<i>Brassica campestris</i> L	Sharrsham	Brassicaceae
4.	<i>Nasturtium officinale</i> R. Br	Tarmira	Brassicaceae
5.	<i>Amaranthus viridis</i> L.	Chorlai	Amaranthaceae

Table: 5 Plants used for Shelter

S.NO	Botanical Name	Local name	Family
1.	<i>Artimisia maritime</i> L.	Tarkha	Asteraceae
2.	<i>Indigofera articulate</i> gouan	Ghwarega	Papilionaceae
3.	<i>Melia azedarach</i> L	Toora shandai	Meliaceae
4.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
5.	<i>Monothea buxifolia</i>	Gorgowara	Sapotaceae
6.	<i>Verbascum thapsus</i> L	Kharghwag	Scrophulariaceae
7.	<i>Accacia Nilotica</i> L.	Kikar	Mimosaceae
8.	<i>Acacia modesta</i> Wall	Palosa	Mimosaceae
9.	<i>Chenopodium batrys</i> L	Kharawa Sarmay	Chenopodiaceae
10.	<i>Melia azedarach</i> L	Toora shandai	Meliaceae

Table: 6 Plants used for Ornamentals

S.NO	Botanical Name	Local name	Family
1.	<i>Helianthus annuus</i> L.	Nwar parast	Asteraceae
2.	<i>Tagetes minuta</i> L	Dambar Gully	Asteraceae
3.	<i>Narcissus Poeticus</i> L	Goli Nargas	Amayrlidaceae

Table: 7 Plants Used for Food

S.NO	Botanical Name	Local name	Family
1.	<i>Mentha arvensis</i>	Pudina	Lamiaceae
2.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
3.	<i>Monothecha buxifolia</i>	Gorgowara	Sapotaceae
4.	<i>Zanthoxylum armatum</i> DC	Dambara	Rutaceae
5.	<i>Diospyros kaki</i> L	Amlook	Ebenaceae
6.	<i>Morchella esculenta</i> L.	Khosay	Helvelaceae
7.	<i>Hibiscus esculentus</i> (L.)	Banda	Malvaceiae
8.	<i>Solanum nigrum</i> L	Karmacho	Solanaceae
9.	<i>Brassica campestris</i> L.	Sharrsham	Brassicaceae
10.	<i>Vigna unguiculata</i> L	Loby	Fabaceae
11.	<i>Oryza sativa</i> L	Shoola	Poaceae
12.	<i>Ficus carica</i> L.	Inzar	Moraceae
13.	<i>Nasturtium officinale</i>	Tarmira	Brassicaceae
14.	<i>Amaranthus viridis</i> L.	Chorlai	Amaranthaceae
15	<i>Medicago denticulata</i> Willd	Feshтары	Fabaceae

Table: 8 Plants used for Medicine

S.NO	Botanical Name	Local name	Family
1.	<i>Ajugba bracteosa</i> Wall. Ex Benth	Gooti	Lamiaceae
2.	<i>Artemisia scoparia</i> Linn	Jaukay	Asteraceae
3.	<i>Isodon rugosus</i>	Spairkay	Lamiaceae
4.	<i>Mentha arvensis</i>	Pudina	Lamiaceae
5.	<i>Melia azedarach</i> L	Toora Shandai	Meliaceae
6.	<i>Olea ferruginea</i> Royle	Khona	Oleaceae
7.	<i>Paeonia emodi</i> Wall. Ex Royle	Mamaikh	Paeoniaceae
8.	<i>Verbascum thapsus</i> L.	Kharghwag	Scrophulariaceae
9.	<i>Zanthoxylum armatum</i> DC	Dambara	Rutaceae
10.	<i>Eucalyptus lanceolatus</i> L	Laachi	Myrtaceae
11.	<i>Morchella esculenta</i> L.	Khosay	Helvelaceae
14	<i>Ricinus communis</i> L.	Herhanda	Euphorbiaceae
15	<i>Viola canscens</i> Wall. Ex Roxb	Benafsha	Violaceae
16	<i>Rose indica</i> L.	Gulab	Rosaceae
17	<i>Equisetum arvense</i> L.	Bandakay	Equisetaceae
18	<i>Plantago lanceolata</i> L.	Ghawajabai	Plantaginaceae
20	<i>Datura stramonium</i> L.	Batura	Solanaceae
21	<i>Brassica campestris</i> L.	Sharrsham	Brassicaceae
22	<i>Solanum virginisnum</i> L	Maraghony	Solanaceae
23	<i>Oryza sativa</i> L.	Shoola	Poaceae
24	<i>Vitex negundo</i> L	Marvandai	Lamiaceae
25	<i>Ficus carica</i> L.	Inzar	Moraceae
26	<i>Nasturtium officinale</i> R.Br	Tarmira	Brassicaceae
28	<i>Amaranthus viridis</i> L.	Chorlai	Amaranthaceae
30	<i>Medicago denticulata</i> Willd	Feshтары	Fabaceae
31	<i>Taraxicum officinale</i> (L.)	Ziar gully	Asteraceae
32	<i>Pinus roxburghii</i> Sargent	Nakhtar	Pinaceae
33	<i>Euphorbia helioscopia</i> L	Mandarro	Euphorbiaceae

Table: 9 Number of species and percentage

S. No	Family	Family Numbers	Percentage (%)
1	Lamiaceae	4	8
2	Asteraceae	6	12
3	Meliaceae	1	2
4	Oleaceae	1	2
5	Sapotaceae	1	2
6	Paeoniaceae	1	2
7	Zygophyllaceae	1	2
9	Scrophulariaceae	1	2
10	Mimosaceae	2	4
11	Chenopodiaceae	1	2
12	Sapindaceae	1	2
13	Rutaceae	1	2
14	Ebenaceae	1	2
15	Myrtacea	1	2
16	Helvelaceae	1	2
17	Euphorbiaceae	2	4
18	Violaceae	1	2
19	Rosaceae	1	2
20	Equisetaceae	1	2
21	Malvaceiae	1	2
22	Plantaginaceae	1	2
23	Rhamnaceae	1	2
24	Solanaceae	4	8
25	Brassicaceae	2	4
26	Cyperaceae	1	2
27	Fabaceae	2	4
28	Typhaceae	1	2
29	Poaceae	1	2
30	Moraceae	1	2
31	Amayrlidaceae	1	2
32	Papaveraceae	1	2
33	Amaranthaceae	1	2
34	Fumariaceae	1	2
35	Papilionaceae.	1	2

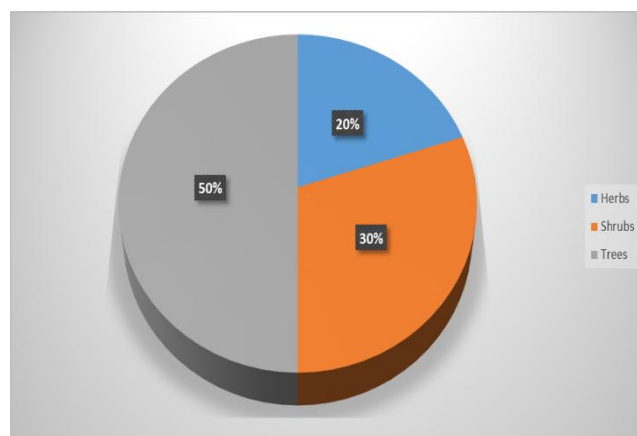


Figure 2: Representation of Herbs, Shrubs and Trees

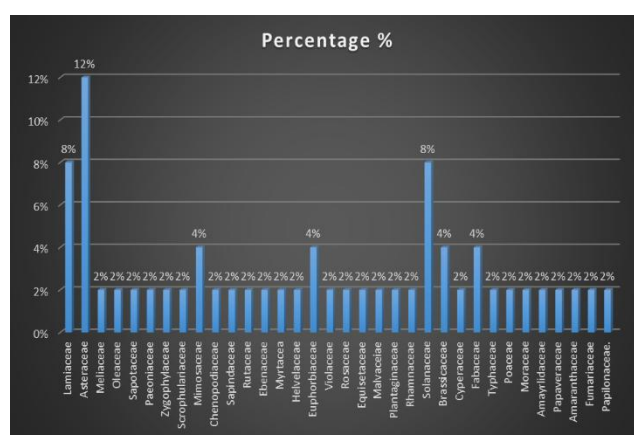


Figure 3: Representation of families and their percentage

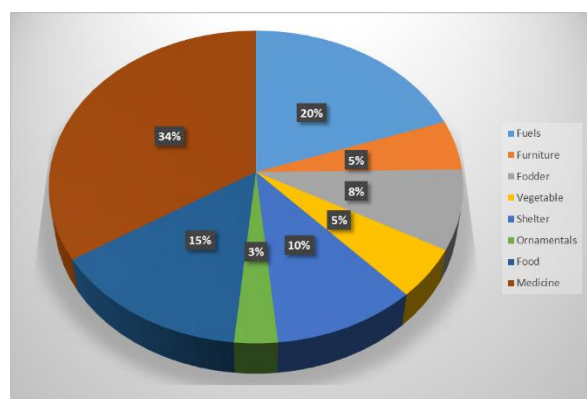


Figure 1: Representation of Plants used for, Fuels, Furniture, Fodder, Vegetable, Shelter, Ornaments, Food and Medicine

4. DISCUSSION

In the present research study sum of 50 plant species belonging to 32 families was reported from the District Darangal Dir Lower. Different plant parts i.e., roots, rhizomes, tubers, leaves, stem, wood and fruits were used by the locals for various purposes in their daily life. Leaves were the most favored plant part used by an indigenous community comprised of 50 species (70.42%) followed by stems (47 species, 66.87%), whole plant (13 species, 20.52%), fruits (09 species, 14%) and roots (04 species, 5.71%). During the survey family Asteraceae was found to contribute the highest number of plant species (08) to the local usage. It was followed by the family Papilionaceae (06 species), Poaceae (05 species), Mimosaceae and Solanaceae (04 species each), Euphorbiaceae (03 species), Apocynaceae, Amaranthaceae, Brassicaceae, Capparaceae, Chenopodiaceae, Polygonaceae, Rhamnaceae, Malvaceae and

Myrtaceae shared 02 species each while family Arecaceae, Acanthaceae, Cactaceae, Asclepiadaceae, Boraginaceae, Convolvulaceae, Cucurbitaceae, Cyperaceae, Canabaceae, Caryophyllaceae, Fumariaceae, Lamiaceae, Liliaceae, Primulaceae, Oleaceae, Sapindaceae, Sapotaceae, Tamaraceae, Oxalidaceae, Meliaceae, Moraceae, Solanaceae, Apiaceae and Zygophyllaceae were represented by one species each. (Fatima et al. 2023) reported from Punjab a total of 48 plant species belonging to 23 families used for various purposes by the local community. (Jan et al. 2011) reported from lower Dir that the family Asteraceae was the most important family with regard to its ethnobotanical value. He documented 26 weed species belonging to 16 families. (Ijaz et al, 2017) reported a total of 172 medicinal taxa from Allai Valley, Pakistan used by the indigenous people for the treatment of various illnesses. Popularly used 31 medicinal plants by the indigenous were reported from Northern Ethiopia (Mesfin et al. 2013). In District Dir Lower the indigenous people mainly used wild herbs (44 spp., 61.11%), followed by wild trees (16 spp., 23.61%) and wild shrubs (11 spp., 15.06%). These plants were used for different purposes such as fodder, furniture, fuel, oil, edible fruits and vegetables. Most of the reported species 110 were used for multipurpose. In the present study it was concluded that 45 species (63.5%) were used as fodder, 30 species (41.66%) for fuel, 10 species (14.69%) for furniture, thatching species were 08 (11.95%), 07 species (9.58%) were used as vegetable, 04 species (7.04%) for hedge purpose, fruit species were 04 (6.04%), 03 species (4.10%) were grown for ornamental purposes and 01 species (1.36%) for each of the following purposes; coloring the clothes, oil for hairs, perfume, in surf industries and in making basket, ropes and hand fan. (Barkatullah and Ibrar, 2011) reported 31 plants species from Malakand agency that were used in the area for fuel, 14 plant species for making furniture, 15 species for house construction particularly for thatching purposes, 47 species were most frequently used for fodder/forage, 40 species (23.68%) were consumed as vegetable and fruit. There were 19 species grown around houses and crop fields as fences. (Hazrat et al., 2011) conducted survey in district Buner and reported 21 fuel plant species, 13 vegetables, 7 roof thatching species, 6 timber wood species and 40 species for medicinal purposes. 10% of plant species were used for fuel and furniture from district Mana Angetu (Lulekal et al., 2008). 16 plant species were used as fuel at Jandool Valley, Dir Lower (Nasrullah et al., 2012). In a similar study,

(Ullah, 2021) reported 15 plant species used for furniture and 9 plant species used for ornamental purposes at Ushairy Valley, district Dir (Upper). Cones of gymnosperm were used for decoration at Poonch Valley Azad Kashmir Pakistan (Khan, 2008). 04 bushy and spiny species were used as borders around the parks and houses. The oil of *Eruca sativa* as used a hair tonic while the oil of *Pongamia pinnata* is used for cooking purposes. The *Osmium bacilicum* is used in perfumes due to its fragrance. *Aloe vera* fleshy leaves are used in surf industries. The ash of *Calotropis procera* is used as a cloth coloring agent. Lack of proper education and poor economic condition of the area has led to the deforestation of natural vegetation, which is added by the unavailability of alternative fuel.

5. CONCLUSION

The current medicinal survey was carried out on medicinal plants of Village Darangal Tehsil Samar Bagh Khyber Pakhtunkhwa. A total of 50 plant species were collected from March to September along with their local name, botanical name, English name, family, habit, part use, method of use and medicinal use. Herbaceous cover was dominated with (40%) species followed by trees with (42%) species and then by shrubs with (18%) species. We concluded that the studied area is rich floristically with medicinal plants and is important medicinally and economically. But unfortunately, due to unawareness some medicinally and economically important plants like *Pinus* species have high market value which are cutting at an alarming rate. Because of over utilization, over collection, over-exploitation, habitat degradation, overharvesting, deforestation, population explosion, over grazing and deforestation the area is under high biotic pressure.

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