

**COLLECTION & IDENTIFICATION OF WILD MEDICINAL PLANTS OF
DHUMKHAL & DHUMKHAL FOREST, DANG DISTRICT, GUJARAT"**

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Abstract

A wild medicinal plants species survey was carried out in Dhumkhal forest of dang district Gujarat for identification and documentation of important flora. The indigenous knowledge of local traditional uses was collected through questionnaires and personal interview of local peoples. The study area having wealthy in medicinal plants flora and tribal communities with latest usages. The aim of this report is giving collection and identification of wild medicinal plants. The effort has been made to evaluate plants used for medicinal by the tribals people of modern healthcare facilities and poor economic conditions. The tribal people of dhumkhal fully (70-80%) depends on in the vicinity available medicinal plants for their healthcare needs. Plants with their correct nomenclature were arranged by family name, botanical name, local name, flowering, fruiting, part used. identification and nomenclature of the listed plants were based on the flora of Maharashtra done by botanical survey of India and help of the guidance. A total of 50 plant species were identified by taxonomic description and locally by ethnomedicinal knowledge of people existing in the region, plant specimens collected identified preserved and mounted were deposited in department of Botany.

Keywords: Wild medicinal plants, Tribes, Medicinal plants, Dhumkhal forest, Dangs District, Gujarat

Introduction

From so many years ago the human being depends on the plants for their basic needs like food, shelter, cloths and medicine. Herbal medicines have traditionally been used because of easily accessible, affordable and there is no evidence of resistance to whole plant extracts of effectiveness (Barkaoui et al. 2017). In India the traditional system of medicine is one of the oldest systems of medical practice in the world and has played an essential role in providing health care service to human civilization right from its inception. India has the exclusive distinction of its own recognized traditional medicine; Ayurveda, Yoga, Unani, Siddha, and Homoeopathy (AYUSH) (Adhikari & Paul 2018). This sort of traditional medicinal knowledge has been regularly practiced in homes and is transferred from generation to generation with the passage of time (Ullah et al. 2013). In recent years specially in

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pandemic situation so many Indian peoples prefer medicinal plants as preventive measure for viral and bacterial infection (Ahmed et al. 2020). India is one among the 12- megabiodiversity countries and having 3 out of 25 hot spots of origins and diversity of several plant species in the world. The 17,000 sq km long strip of forests along the seaward side of Western Ghats is enriched with 4,050 plant species, of which nearly 40% (1,600 species) are endemic. Gujarat State is the western part of India having nearly 4,320 plant species, which accounts for almost 9.33% of the total floral wealth of India. The tribals in the state use about 750 medicinally Important and 450 economically important plant species. (Patel & Varshney 2017).

The Dangs is the southernmost district in Gujarat, which starts from the rugged mountain chains of the Sahyadri range of the Western Ghats in the southwest and descends on the western side of extending undulating tract. Dangs district is situated between the parallels of latitude 20°33'40" and 21°5'10" and the meridians of longitude 73°27'58" and 73°56'36" (Kokni et al.2017). The Dangs is a tribal district, with the Bhil, Konkani (kunvi), Varli, Kotwalia, Kathodi and Gamit being the major tribal groups. The Bhils have historically been residing in the Dangs whereas the other tribes came to the Dangs in search of a livelihood. These tribal people mainly depend on forest for their shelter, housing material, food, fuel, fibre, medicine and feed. These ethnic groups through their observations and experiences with the nature have developed their own indigenous systems of treating ailments using different plants (Chandrakar 2014). Presently over harvesting of plants and other human being activities these forests are degrading to a large extent in the country and various parts of the Gujarat. The degradation of forest and hilly habitat many medicinal species are facing threats for their existence. Along with the medicinal species of plants, the knowledge of ethnomedicinal practices is also losing in the local community (Patel & Varshney 2017). The tribal people of Dhumkhal fully (70-80%) depends on in the vicinity available medicinal plants for their healthcare needs. The present study has been carried out to focus the existing floral diversity with special reference to medicinal plants values, found in different forested pockets of Dhumkhal forest and Dhumkhal areas of Dang District.

Materials and Methods

Study Area

Located in the Southern part of country, state of Gujarat. The area Dhumkhal forest lies between 20°63'19.26"N latitude and 73°77'05.86"E longitude, map report and data sets of Dhumkhal on topography, land use, land cover, watershed/hydrological parameters etc. Total area of Dhumkhal forest and Dhumkhal is 334.09 hectares as per the Data available for the year 2021. At Dhumkhal

village is home of 100% scheduled Tribes (ST) Population. The Dhumkhal are one such as tribe that have inhabited the Dhumkhal forest, the medical men “*Bhagar*” (vaidya) indigenous plant knowledge.

Collection of specimens and herbarium preparation

The work on collection and documentation of wild medicinal plant of Dhumkhal forest was initiated in 2022 in month February to April. If present work about dhumkhal forest were undertaken for extensive and intensive and collection of wild medicinal plants species from dhumkhal forest. Over 50 species were collected.

The traditionally useful wild medicinal plants are more of different types of diseases by the natives of Dhumkhal forest were collected from the area: Dried, pressed, and mounted on the herbarium sheet. All the herbarium plants were accompanied by data such as family, their botanical name, local name, life form, part of the plant used and the association of disease with the plant.

Morphology and Identification

The made a brief vegetative morphological description of each wild medicinal plant species, The photographs were taken by using android redmi note 6 pro android mobile camera, Identification of all wild medicinal plant species have been identified using flora of Maharashtra (Singh & Karthikeyan, 2000). All species were arranged alphabetically.

Results

Systematic Treatment:

ABRUS Adans.

Abrus precatorius L.

Family:- Fabaceae

Local Name:- Gunj

Perennial Twiners. Leaves 8–12 cm long; leaflets 0.5–1.8 x 0.3–0.8 cm, oblong or elliptic-oblong, glabrous above, appressed-hairy beneath. Flowers pinkish-purple, fading white in racemes. Pods 2–4 cm long, Linear-oblong, beaked. Seeds 3–5, ellipsoid, bright scarlet with a black spot.

Flowering & Fruiting: - August–March.

Plant part use: Leaves

Medicinal uses: - The leaves of the herb are used to cure fever, cough and cold.

ACACIA Willd.

Acacia catechu (L. f.) Willd.

Family:- Mimosaceae

Local Name:- Khair

Deciduous trees, 5–10 m tall. Leaves bipinnate, 24–25 cm long, pinnae 10–30 Pairs; leaflets 30–50 pairs 0.5 x 0.1. cm linear. Flowers pale yellow or greenish–white in spikes, 6–8 cm, long. Pods 8.5–14.0 x 1.5–2.0 cm, flat, brown, stalked, beaked; reticulately veined. Seeds 3–10.

Flowering & Fruiting: - July–February.

Plant part use: Bark

Medicinal uses:- Its heartwood extract is used in asthma, cough, bronchitis, colic,diarrhea, dysentery, boils, skin afflictions, sores and for stomatitis.

3) AERVA Forssk.

Aerva lanata (L.) Juss. Ex Schult.

Family:- Amarantheceae

Local name:- Kapuri-Madhuri

Herbs, erect or prostrate. Leaves 0.5-1.5 x 0.2-1.0 cm, pubescent above, white cottony beneath. Flowers greenish-white. Utricles 0.1 x0.1 cm, broadly ovoid, acute.

Flowering & Fruiting:-December-February

Plant parts use: Leaves

Medicinal uses:- It is used in the treatment of lithiasis, cough, asthma, and headache. It is used as an antidote for rat poisoning.

AGERATUM L.

Ageratum conyzoides L.

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Family:- Asteraceae

Local Name:- Burandu

Annual herbs, 30 cm high, erect, hairy. Leaves ovate, hairy on both sides, apex subacute. Heads small, in dense terminal Corymbs, white or pale blue. Pappus paleaceous, awned or aristate, little longer than achenes, pappus scales 5, aristate, achenes 0.3 cm long, sharply 5- angled, black, sparsely spiculate on angles.

Flowering & Fruiting:- July-February.

Plant parts use: Leaves

Medicinal uses:- As a medicinal plant, *ageratum conyzoides* is widely used by many traditional cultures, against dysentery and diarrhea.

ANOGEISSUS (DC.) Guill. & Perr.

Anogeissus latifolia (Roxb. Ex DC.) Wall. Ex Guill. & Perr.

Family:- Combretaceae

Local Name:- Dhavada

Deciduous trees, 9–18 m high. Leaves 3–10 x 1.5 x 4.5 cm, ovate to oblong–elliptic, apex obtuse. Flowers sessile, in dense heads; calyx pubescent, teeth triangular. Fruits with persistent calyx stalk, wings entire, beaked, clustered.

Flowering & Fruiting: - March–September.

Plant part use: Bark

Medicinal uses:- traditionally as medicine to treat various human ailments and conditions such as vomiting, whooping cough, cold, diarrhea, dysentery, snake and scorpion bite, fever, skin diseases.

ARGEMONE L.

Argemone mexicana L.

Family: Papaveraceae

Local Name: - Pivla dhotra

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Annual, prickly herbs, 30–100 cm tall. Leaves radical and cauline, 5–10 x 2.5–4.0 cm, bluish–green, variegated white, spiny along margins and on veins, sessile. Flowers bright yellow, 3–4 cm across, solitary, terminal. Capsules 2–3 cm long, spinous. Seeds numerous, black, Globose.

Flowering & Fruiting:- Throughout the year.

Plant part use: Roots, Leaves, Seeds

Medicinal uses:- Used in different parts of the world for the treatment of several diseases including tumors, warts, skin diseases, inflammations, rheumatism, jaundice, leprosy, microbial infections, and malaria.

BAUHINIA L.

Bauhinia racemosa Lam.

Family: Caesalpiniaceae

Local Name: - 'Sheethsona'

Trees, 3–5 m high. Leaves 2.5–8.0 x 3.5–8.0 cm, glabrous above, whitish tomentose beneath, apex obtuse, mucronate. Flowers white or yellow in 6 cm long, elongate, slender racemes. Pods 9.5–12.0 x 1.5–1.8 cm, stalked, flat, turgid. Seeds 12–20, oblong.

Flowering & Fruiting: - April–October.

Plant parts use: Bark, Leaves, Seed

Medicinal uses:- The bark and leaves of are sweetish and acrid, used as a refrigerant, astringent in the treatment of headache, fever, skin diseases, dysentery and diarrhea.

BIXA L.

Bixa orellana L.

Family: Bixaceae

Local Name:- Shendri

Small, evergreen trees. Leaves 10–20 x 6–12 cm, ovate, acute or acuminate at apex, truncate or subcordate at base. Flowers white or Pink, 5 cm across, in terminal panicles, pedicels pubescent. Capsules ovoid or subglobose, clothed with long, soft prickles. Seeds trigonous, rounded and grooved on the back, pulp red.

Flowering & Fruiting:- July–November.

Plant parts use: Leaves

Medicinal uses:- The infusion of the leaves has been shown to be effective against bronchitis, sore throat, and eye inflammation. Traditional use of antipyretic, aphrodisiac, antidiarrheal, antidiabetic and insectrepellent.

BLUMEA DC. (nom. Cons.)

Blumea lacera (Burm. F.) DC.

Family: Asteraceae

Local Name:- Burando

Herbs, 25-80 cm tall, erect, aromatic; stem grooved, glandular-Pubescent. Leaves 3-8 x 2-5 cm, obovate-oblong, incised or sometimes Lyrately lobed, silky pubescent on both sides, margins serrate-dentate. Heads 0.4-0.6 cm across, involucral bracts 0.3-0.4 cm long, slightly longer than corolla. Achenes oblong, sparsely hairy, sub angulate, terete.

Flowering & Fruiting:- October-May.

Plant parts use: Leaves

Medicinal uses: - Leaves juice is also prescribed for curing fever (febrifuge), wound healing, antipyretic, and for diuretic activities.

BUTEA Roxb. Ex Willd. (nom. Cons.)

Butea monosperma (Lam.)

Family: Fabaceae

Local Name:- Palas

Trees; bark rough, ash coloured. Leaves 3-foliolate; leaflets 4.5–24.0 x 3–20 cm, obovate, ovate–rhomboid, glabrous above, silky–pubescent beneath. Flowers in compact racemes on leafless branches. Pods 9–14 x 1.5–4.5 cm, oblong, sandy–brown, hairy, stalked. Seeds solitary.

Flowering & Fruiting:- January–June.

Plants parts Use: Leaves, Flowers

Medicinal uses:- Flowers and leaves of palash are used to manage skin problems like acne and pimple.

CALOTROPIS R. Br.

Calotropis procera (Ait.) R. Br.

Family: Asclepiadaceae

Local Name:- Rui

Erect shrubs, 2 cm high; stems woody, cylindrical, branched. Leaves sessile or shortly petiolate, 10-14 x 5-11 cm, broadly ovate, Obovate or obovate-oblong, fugaciously cottony on both sides, base Cordate. Flowers in lateral, umbellate cymes; corolla 2.5-3.0 cm across hemispherical in bud, lobes divided 2/3 of way down; corona 5, laterally compressed, lobes completely adnate to column, recurved at base. Follicles 7-9 cm long, in pairs, recurved. seeds ovoid, coma silky-white.

Flowering:- Most of the year. **Fruiting:-** August-December.

Plant parts use: Leaves, Roots

Medicinal uses:- Traditionally used for diarrhoea, stomatic, sinus fistula and skin disease. Leaf part are used to treat jaundice.

CAESALPINIA L.

Caesalpinia bonduc (L.) Roxb.

Family: Caesalpiniaceae (S. Moorthy)

Local Name:- Sagargota

Stragglers, armed; stems pubescent, armed with hooked, yellowish spines. Petioles armed with prickles, pinnae 6-8 pairs; leaflets 6-8 Pairs, 1.5-2.0 x 1.0-1.2 cm, elliptic. Flowers yellow in terminal and supra-axillary racemes, dense at top and lax at bottom. Pods 4.5-7.5 x 3.5 cm, oblong, ellipsoid, dehiscent, valves coriaceous. Seeds 1-2, Globose to subglobose.

Flowering & Fruiting:- August-February.

Plant parts use: Bark, leaves, Seeds

Medicinal uses:- The bark and leaves have been used to lower fevers. Oil extracted from the seeds has been used in cosmetics and for treating discharges from the ear.

CASSIA L.

Cassia fistula L.

Family: Caesalpiniaceae

Local Name:- Bava

Trees, 10 m tall. Leaflets 4–8 pairs, 5.0–12.5 x 2.5–6.0 cm, ovate. Flowers yellow, in 24–40 cm long, lax, drooping racemes. Pods 2.0–2.5 cm across, indehiscent. Seeds numerous, embedded in dark coloured Pulp.

Flowering & Fruiting :- April–October.

Plant parts use: Bark, Seeds

Medicinal uses:- They are specially used in joint pain, migraine and chest pain and blood dysentery. It is also used in ulcers and boils and various skin diseases.

CAPPARIS L.

Capparis zeylanica L.

Family: Cappariceae

Local Name:- Waghati

Scandent shrubs. Leaves 5–7 x 2.0–3.5 cm, elliptic or Ovate–elliptic, apex acute or obtuse, margins entire. Flowers white, Solitary, axillary or 2–3 together, 3–5 cm across; pedicels 2–4 cm long; Gynophore 1–2 cm long. Fruits 4–6 x 2–3 cm, irregularly ovoid, pointed or blunt. Seeds many.

Flowering & Fruiting:- February–April.

Plant parts use: Leaves, Roots, Fruits

Medicinal uses:- Traditionally it is also used as antidote to snake bite to cure swelling of testicle, small pox, boils, cholera, colic, hemiplegia, neuralgia, sores, pneumonic and pleurisy.

COCCULUS DC. (nom. Cons.)

Cocculus hirsutus (L.)

Family: Menispermaceae

Local Name:- Vasan vel

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Climbing undershrubs; stems and branches hirsute. Leaves 2–5 x 1.5–3.5 cm, ovate or oblong–ovate, softly pubescent or villous on both surfaces, apex obtuse and mucronate, base truncate or subcordate. Male flowers 0.3 cm across; calyx and corolla lobes 6 each. Female flowers in axillary fascicles, 0.4 cm across, calyx and corolla as in males. Drupes 0.2–0.4 cm across, ripens reddish.

Flowering & Fruiting:- January–March.

Plant parts use: Leaves, Roots

Medicinal uses:- The treatment of fever, skin diseases, stomach disorders, urinary diseases

***Cordia* L.**

***Cordia dichotoma* Forst.**

Family: Boraginaceae

Local Name:- Bhokar

Medium sized trees, 5–10 m high; bark rough. Leaves variable, 6–12 x 4–10 cm, broadly ovate, scabrous above, apex obtuse, base rounded or cordate. Flowers white, polygamous; male flowers larger than bisexual ones in cymose-panicles; calyx irregularly splitting, corolla-lobes oblong. Berries 0.6–2.5 cm long, ovoid, yellow or pink, glossy, supported by accrescent calyx, pulp mucilaginous, edible.

Flowering & Fruiting:- February–June.

Plant parts use: Fruits, Bark

Medicinal uses:- Fruits are commonly used in folk medicine to treat cough and chest complaints, as well as for the treatment of wounds and ulcers.

***Desmodium* Desv. (nom. Cons.)**

***Desmodium laxiflorum* DC.**

Family: Fabaceae

Local Name:- Aasud

Undershrubs. leaflets 3.5–15.0 x 1.5–8.0 cm, ovate–elliptic or lanceolate, appressed–pubescent beneath. Flowers white or bluish–violet, in lax racemes. Pods flat, rarely constricted between seeds, hairy, 6–10-jointed.

Flowering & Fruiting:- August–December.

Plant parts use: Leaves, Seeds

Medicinal uses:- Traditionally *Desmodium laxiflorum* leaf and seeds are used to cure Cough and malaria.

***DILLENIA* L.**

***Dillenia aurea* J.E. Sm.**

Family: Dilleniaceae

Local Name:- Karmal

Deciduous trees, 10–15 m high. Leaves 20–40 x 10–25 cm, Elliptic–oblong, base rounded to truncate, margins Spinulose–denticulate. Flowers solitary or rarely in pairs, 10–12 cm across; sepals coriaceous, ciliate along margins; petals golden yellow, obovate; inner stamens with reflexed apex. Fruits orange–yellow, Subglobose, 3.0–3.2 cm across. Seeds obovoid, glossy, dark brown, Surrounded by viscid pulp.

Flowering & Fruiting :- March–July.

Plant parts Use: Bark

Medicinal uses:- *Dillenia aurea* is traditionally used in sore limbs or swelling in the abdomen. The fresh juice given for treatment against cough and dyspnea.

***EUPHORBIA* L.**

***Euphorbia heterophylla* L.**

Family:- Euphorbiaceae

Local Name:- Dhudhari

An annual bushy herb. Leaves green towards apex, scarlet, crimson or rose-coloured towards base. Yellowish-green fruit.

Flowering & Fruiting:- September–March.

Plant parts use: Leaves, Roots

Medicinal uses:- The latex and preparations of the leaves and root are applied to treat skin tumours. The leaves are taken to treat body pain.

***Euphorbia hirta* L.**

Family:- Euphorbiaceae

Local Name:- Dhudhari

Herbs, perennial, erect, diffuse or prostrate; branches densely or sparsely clothed with spreading hairs. Leaves 1.0–2.5 x 0.5–1.0 cm, elliptic or ovate–oblong. Capsules 0.1 cm long, appressed hairy. Seeds reddish–brown, faintly transverse, rugose.

Flowering & Fruiting: - July–December.

Plant parts Use: Leaves, Roots

Medicinal uses: - *Euphorbia hirta* is often used traditionally for female disorders, respiratory ailments (cough, and asthma), and worm infestations in children, dysentery, jaundice, pimples, gonorrhea, digestive problems, and tumors.

***FICUS* L.**

***Ficus benghalensis* L.**

Family:- Moraceae

Local Name:- Vad

Trees, with numerous aerial roots from spreading branches; twigs, stipules, petioles and leaves beneath puberulous at early stage, later glabrescent. Leaves ovate, coriaceous, 10–30 x 7–20 cm, base cordate or rarely cuneate; lateral veins 5–6 pairs, with c 10 intercostals, Prominent on both sides; stipules stout; petiole 1.5–7.0 cm long. Figs sessile, axillary, paired, ripening orange to red, depressed–globose; Basal bracts obtuse; internal bristles none. Tepals free, 2–3 in male, 3–4 in galls and female flowers; anthers shortly mucronate.

Flowering & Fruiting:- April–June.

Plant parts use: Bark, Leaves

Medicinal uses:- *Ficus benghalensis* is an Ayurveda plant for the treatment for wounds, skin diseases, eye diseases, leucorrhea, diabetes and diarrhea.

***Ficus hispida* L.**

Family:- Moraceae

Local Name:- Bhui Umbar

Shrubs to small trees, 5 m high, well branched; bark grey, smooth; latex white. Leaves opposite, ovate, oblong or subovate, base Cordate to cuneate, apex acuminate, crenate–serrate along margins; Stipules 10–25 mm long, caducous. Figs obovate, axillary to cauliflorous on short, tubercled branches, ripening pale yellow; basal bracts 3, Subtriangular, internal bristles 0. male flowers in 1–2 rows, stamen 1. Galls and female flowers sessile or pedicellate; style hispid. Seed Slightly keeled, tuberculate, with prominent hilum.

Receptacles: January–July.

Plant part use: Bark, Roots

Medicinal uses:- Traditionally, different parts of the plant have been used in the treatment of ulcers, psoriasis, anemia, piles jaundice, vitiligo, hemorrhage, diabetes, convulsion, hepatitis, dysentery, biliousness, and as lactagogue and purgative.

***Ficus racemosa* L.**

Family:- Moraceae

Local Name:- Umbar

Trees, 4–10 m high, much branched, often with well spreading Canopy; bark greyish white or pinkish, smooth. Leaves ovate oblong, Elliptic– lanceolate, 3.6– 6.2 x 2– 4 cm, base cuneate or rarely subcordate Apex subacute or subacuminate, entire, subcoriaceous; lateral veins 4–8 Pairs, petioles 2– 7 cm long. Receptacles in large clusters on the main Branches and trunks, 3 cm across, obovoid, pyriform, pale green to red To purplish on ripening; peduncles 0.3–1.2 cm long, perianth with 3–4 Dentate–lacerate lobes joined below, red. Male flowers in 2–3 rings, Sessile, much compressed; stamens 1–2 or rarely 3. Galls long stalked. Females sessile or shortly stalked, ovary sessile or substipitate. Seeds 1 mm long, lenticular, smooth.

Receptacles: February–June.

Plant parts use: Bark, Roots

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Medicinal uses: For various diseases/disorders including diabetes, liver disorders, diarrhea, inflammatory conditions, hemorrhoids, respiratory, and urinary diseases.

Ficus rumphii Bl. Bijdr.

Family:- Moraceae

Local Name: Payar

Deciduous, glabrous trees, 8– 10 m tall, epiphytic in early stage. Leaves broadly ovate, subcoriaceous, 7– 15 x 5– 10 cm, apex subcordate apex, caudate– acuminate, entire along margins; petioles 10– 15 cm long, stipules ovate– lanceolate. Receptacles axillary, sessile, or shortly peduncled in pairs, globose, 1 cm across, glabrous, white with dark spots when young, black when ripe; basal bracts 3, rounded. Male flowers near the mouth; tepals spatulate; stamen 1. Galls and female flowers sessile; tepals 3, lanceolate.

Receptacles: May-June.

Plant parts use: Bark,

Medicinal uses: Bark is used in snake bite. It is also useful in burning sensations, leucoderma, ulcers, leprosy, itching, biliousness and diseases of blood.

FLEMINGIA Roxb. Ex W. Ait. & W. T. Ait. (nom. Cons.)

Flemingia strobilifera (L.) Ait. & Ait. F. Hort. Kew.

Family: Fabaceae

Local Name: Fokali

Shrubs, 1–2 m high. Leaflets 6.0–15.5 x 2.3–7.5 cm, Ovate–lanceolate or oblong, silky pubescent beneath, apex acute, base Rounded. Flowers in axillary and terminal racemes. Pods oblong, Mucronate, densely pubescent. Seeds 12, dark–brown or black.

Flowering & Fruiting:- August–April.

Plant parts use: Roots, Flowers

Medicinal uses: Root of the plant is used for various ailments such as insomnia, epilepsy, ulcer, inflammation and microbial infection. flowers use for small pox.

GREWIA L.

Grewia abutilifolia Vent. Ex A. Juss.

Family: Tiliaceae.

Local Name: Chikankarbat

Shrubs, straggling, upto 4 m high; young parts stellate-hairy. Leaves 8.3–13.5 x 5–11 cm, roundish–ovate, scabrous and stellately Hairy, acute or acuminate at apex, margins entire or shallowly lobed. Inflorescence of umbellate cymes. Flowers yellow. Drupes dark green, 1 cm in diameter., obscurely 4-lobed, wrinkled.

Flowering & Fruiting:- February–November.

Plant parts use: Roots

Medicinal uses: Taken internally for diarrhoea and dysentery, externally it is applied to wounds, cuts, ulcers, irritations etc.

HALDINA Ridsd.

Haldina cordifolia (Roxb.)

Family: Rubiaceae

Local Name: Haldun

Trees, 6–15 m tall; bark thick, grey, rough. Leaves crowded at ends of branchlets, 6.5 –29.0 x 6–25 cm, orbicular, abruptly acuminate at apex, cordate at base, lower surface densely pubescent. Flowers in globose, yellow, peduncled heads, 1.8–2.5 cm across; calyx tube angled; Corolla tube funnel-shaped. Capsules 0.4–0.5 cm long, pubescent.

Flowering & Fruiting:- May–August.

Plant parts use: Bark

Medicinal uses: *Haldina cordifolia* is an Ayurvedic medicinal plant, used for the treatment of skin diseases, wounds, vomiting, intestinal worms, indigestion and the diseases of the liver.

HELICTERES L.

Helicteres isora L.

Family: Sterculiaceae

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Local Name: Murud Sheng

Shrubs, 2–3 m tall; young shoots stellate hairy. Leaves bifarious, 7.5–13.5 x 5–8 cm, oblong–obovate clothed with stellate hairs on both Surfaces, apex short acuminate, base subcordate–subacute, irregularly Serrulate. Flowers 2.5–4.0 cm long, bright red, distinctly bilabiate in Axillary clusters of 2–6–together. Follicles 5, c 5 cm long, beaked, Stellately tomentose. Seeds numerous, angular, wrinkled.

Flowering & Fruiting:- August–December.

Plant parts use: Root, Stem, Bark, Fruits.

Medicinal uses: Tree is an Ayurvedic herb used in treating diarrhoea, dysentery, abdominal colic pain, intestinal parasites etc. Its root, stem bark, fruits are used for medicinal purposes.

HOMONOIA Lour.

Homonoia riparia Lour.

Family: Euphorbiaceae

Local Name: Raan kaner

Shrubs, c 2.5 m tall. Leaves closely set, 7– 15 x 1– 2 cm, glabrous above and clothed beneath; main nerves 10– 30 pairs. Flowers dioecious, sessile in 5– 15 cm long, axillary spikes; sepals 3 in male flowers and 5 in female flowers. Capsules 2–4 mm across, globose hairy, 3–ribbed with persistent style.

Flowering & Fruiting: Throughout the year.

Plant parts use: Roots, Leaves, and Fruit.

Medicinal uses: A decoction of the root is given for piles, stones in bladder, chestpain, gonorrhoea and syphilis. Powdered leaves and fruits are applied as poultice for skin diseases.

MADHUCA J. F. Gmel.

Madhuca longifolia (Koen.)

Family: Sapotaceae

Local Name: Mohu

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Tall trees. Leaves 6.5– 10.0 x 2.5 – 3.0 cm, linear– lanceolate, acute at apex, tapering at base. Flowers in fascicles below leaves; corolla fleshy. Berries oblong, yellowish when ripe. Seeds 1– 2, compressed, curved on one side.

Flowering & Fruiting: November – January.

Plant parts use: Bark, Leaves, flower, Fruit, seed

Medicinal uses: The bark is used for rheumatism, chronic bronchitis, diabetes mellitus, It is a good remedy for itch, swelling, fractures and snake- bite. Seeds are used in skin disease, rheumatism, headache, laxative, piles and sometimes as galactagogue, Leaves are used in gastropathy, dysipsia.

MEYNA Roxb.

Meyna laxiflora. Robyns

Family: Rubiaceae

Local Name: Aliv

Shrubs or small trees, 3– 10 m tall, armed with thorns, 2.0– 2.5 cm Long. Leaves 5.0– 12.5 x 3.7– 8.5 cm, elliptic, ovate or ovate– lanceolate, Shining, apex acute, base cuneate, tapering into 0.6– 2.5 cm long Petioles. Flowers greenish–yellow, in axillary clusters; calyx Cup–shaped, ribbed, teeth triangular, acute; corolla tube hairy at throat within. Drupes 2.5 cm across, fleshy, chocolate–colour when ripe, edible. Seeds 5–6.

Flowering & Fruiting: March–June.

Plant parts use: Fruits

Medicinal uses: *Meyna laxiflora* is a plant which having traditional importance for its medical uses, for treatment of inflammation, gastrointestinal disorder

MILIUSA Leschen

Miliusa tomentosa (Roxb.)

Family: Annonaceae

Local Name: Humb

Deciduous trees, 8–10 m tall; young shoots densely tomentose. Leaves 10.5–14.0 x 4.0–7.5 cm, elliptic–ovate or elliptic–lanceolate, Apex acute, base subacute. Flowers axillary, solitary or fascicled,

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all Parts tomentose; sepals 0.5 x 0.1 cm, lanceolate; petals—outer 3 resembling calyx, inner much larger, erect with saccate base, fused at first, later becoming free. Carpels succulent, stalked, purple.

Flowering & Fruiting: February–April.

Plant parts use: Bark

Medicinal uses: Humb are traditionally use of the acidity and gastrointestinal problems

PONGAMIA Vent. (nom. Cons.)

Pongamia pinnata (L.)

Family: Fabaceae

Local Name: Karanj

Trees, 7–15 m. high. Leaflets 5–9, 3.5–12.0 x 1.8–8.2 cm, broadly ovate or elliptic. Flowers white with purple tinge in axillary, drooping racemes. Pods elliptic–oblong, thick, compressed. Seeds reddish–brown, reniform, rugose

Flowering & Fruiting: February–May.

Plant parts use: Bark, Root,

Medicinal uses: The root is effective for treating gonorrhea, cleaning gums, teeth and ulcers. It is used in vaginal and skin diseases. treatment of tumors, piles, skin diseases and ulcers.

MALLOTUS Lour.

Mallotus philippensis (Lam.)

Family: Euphorbiaceae

Local Name : Kunkvali

Trees, much branched, 2– 9 m high. Leaves 4– 14 x 2.5– 9.5 cm ovate– lanceolate. Inflorescence of rusty pubescent spikes. Flowers greenish– yellow. Capsules 1 cm across, 3– lobed, loculicidally 3–valved, covered with bright red powder of minute stellate hairs and fine grain of resinous substance.

Flowering & Fruiting: July–March.

Plant parts use: Leaves, Root,

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Medicinal uses: Leaves, roots, glands and hair of the plant are used in the treatment of various disorders. They are used to treat parasitic affections of the skinlike scabies, ringworm, and herpes.

NEOLAMARCKIA Bosser

Neolamarckia cadamba (Roxb.)

Family : Rubiaceae

Local Name: Kalamb

Trees, 10– 12 m tall. Leaves elliptic to elliptic– oblong, coriaceous, 10.0– 23.5 x 5.5– 15.0 cm, upper surface shining, lower pubescent, apex acute, base rounded or sometimes cordate. Inflorescence a globular head, 7.5– 9.0 cm across. Flowers white or creamy–yellow; petals linear, oblong, acute, imbricate, hairy. Capsules in globose receptacles, 5 cm across, yellow when ripe.

Flowering & Fruiting: November–February.

Plant parts use: Bark

Medicinal uses: Used to treatment of wounds, conjunctivitis, mouth ulcers, diarrhea, irritable bowel syndrome and diseases related to the urinary tract.

OUGEINIA Bth.

Ougeinia oojeinensis (Roxb.)

Family: Fabaceae

Local Name: Tiwis

Trees, 6–12 m high. Leaflets 6.2–10.5 x 4–10 cm, terminal broadly Elliptic or roundish, laterals obliquely ovate, cordate. Flowers many in Fascicled racemes. Pods reticulately veined.

Flowering & Fruiting: March–June.

Plant part use: Bark

Medicinal uses: is used for the treatment of jaundice, diarrhoea, dysentery, diabetes, verminosis, leprosy, leucoderma, haemorrhages, fevers, ulcers

PERSICARIA (L.) Mill.

Persicaria glabra (Willd.)

Family: Polygnoceae

Local Name: Sheral

Herbs, semiaquatic or aquatic, stoloniferous. Leaves 6–23 x 0.7–3.5 cm, lanceolate, finely acuminate at apex, tapering at base, Gland–dotted; ocreae conspicuously veined, truncate at mouth. Perianth Pink. Nuts 0.3 cm across, ovoid or suborbicular, compressed, biconvex, brown to black, shining.

Flowering & Fruiting: Throughout the year.

Plant parts use: Leaves, Flowers

Medicinal uses: It is also used for the treatment of kidney stones, edema, gastric ulcers, and eczema, asthma and thyroid diseases.

EMBLICA Gaertn.

Phyllanthus emblica L.

Family: Euphorbiaceae

Local Name: Aavla

Trees, 5 cm tall. Leaves pinnate; leaflets subsessile 1.0 x 0.2 Cm, closely set, distichous, linear. Flowers greenish-yellow. Fruits 1.0–1.5 cm across, fleshy, globose, yellow, edible.

Flowering & Fruiting : February–October.

Plant parts Use: Bark, Fruit

Medicinal uses: traditional medicine for the treatment of diarrhea, jaundice, and inflammation.

POGOSTEMON Desf.

Pogostemon benghalensis (Burm. F.)

Family: Lamiaceae

Local Name: Fangulta

Herbs, or undershrubs, 0.5–1.5 m high; stems and branches rounded or subquadrangular, glabrous or slightly pubescent, purple. Leaves 5–12 x 3–6 cm, ovate or ovate-lanceolate, glabrous or slightly pubescent, apex acute or acuminate, base cuneate, margins coarsely and irregularly crenate-dentate. Flowers white with purple tinge, in terminal, pubescent, panicle–spikes; bracts elliptic-ovate; calyx

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0.4Cm long, puberulous, glandular; corolla 0.8 cm long, upper lip 3–subequally lobed, lower one entire. Nutlets obovoid, brownish.

Flowering & Fruiting: November–February.

Plant parts use: Leaves

Medicinal uses: The plant leaves are also useful in the treatment of kidney stone.

***RICINUS* L.**

***Ricinus communis* L.**

Family:- Euphorbiaceae (A. N. Londhe)

Local Name: Erand

Shrubs upto 2.5 m tall. Leaves digitately lobed. Capsules 1 cm Across, globose, spinous. Two varieties, the one larger with green & the other small with ed stem & flowers which is commonly grown in gardens.

Flowering & Fruiting: May – June.

Plant parts use: Root

Medicinal uses: It widely used in traditional medicine such as abdominal disorders, gallbladder pain, period pain, menstrual cramps, rheumatism, sleeplessness and insomnia.

***SCHLEICHERA* Willd.**

***Schleichera oleosa* (Lour.)**

Family: Sapinadaceae

Local Name:- Koshimb

Trees, 10–15 m high. Leaves paripinnate, young leaves reddish; Leaflets 2–4 pairs, 5–15 x 2.5–5.5 cm, oblong or elliptic–oblong Coriaceous, nerves strongly plaited below apex obtuse–round or acute, base cuneate–subcordate. Flowers 0.25–0.3 cm across, greenish–white, Polygamo–dioecious, fascicled in interrupted, branched racemes; calyx Acute, 5–lobed; petals absent. Drupes 2.0–2.5 x 1.5–2.0 cm, ovoid, 1–2Seeded.

Flowering & Fruiting : March–May.

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Plant parts use: Bark

Medicinal uses: Its bark is anti-oxidant, used in rheumatoid arthritis, headache. Its oil, Kusum oil is used for treating ulcers, intestinal parasites etc.

***SPHAERANTHUS* L.**

***Sphaeranthus indicus* L.**

Family: Asteraceae

Local Name: Gorakhmundi

Herbs, highly branched, spreading. Leaves c 4.5 x 1.5 cm, Obovate– oblong, glandular– hairy, narrowed at base. Heads 1 cm across on solitary glandular peduncles, florets purple. Achenes stalked.

Flowering & Fruiting : November–May.

Plant part use: Leaves

Medicinal uses: It is traditionally use of the jaundice, diabetes, fever, cough, gastropathy, hernia, dyspepsia and skin diseases.

***TERMINALIA* L.**

***Terminalia bellirica* (Gaertn.) Roxb.**

Family: Combretaceae

Local Name : Behada

Large trees, 15–20 m tall; young parts rufous pubescent. Leaves 8–15 x 6–10 cm, obovate or broadly elliptic, tomentose on both sides. Flowers yellowish–brown, in axillary spikes, foetid. Drupes subglobose, 3 x 2 cm, softly tomentose.

Flowering & Fruiting : March–November.

Plant parts use: Bark, Fruit

Medicinal uses: It is used to protect the liver and to treat respiratory conditions, including respiratory tract infections, cough, and sore throat.

***Terminalia elliptica* Willd.**

Family: Combretaceae

Local Name: Sadada

Trees, 3–20 m tall; bark rough, deeply cracked. Leaves 5–17 x 2.5–8.0 cm, elliptic to elliptic–lanceolate or elliptic–oblong, ovate or Obovate. Flowers yellowish–brown or greenish–yellow, in pubescent Panicles. Drupes 2.4–4.0 cm across, obovoid–oblong or globose, dark Brown or reddish.

Flowering & Fruiting : April–November.

Plant part use: Bark

Medicinal uses: The bark is used medicinally against diarrhoea. Water stored in the stem is often tapped and used as a source of potable water in the summer by forest folk.

TRIDAX L.

Tridax procumbens L.

Family: Asteraceae

Local Name: Tantani

Annuals or perennials, erect or procumbent herbs, branched at Base. Leaves opposite, ovate or lanceolate, margins serrate to coarsely incised dentate or trilobed. Heads heterogamous, produced on erect, Retrorsely hirsute and sparsely glandular peduncles, 10–25 cm long; ray florets white, ligules mostly bilabiate, disc florets tubular-campanulate, Yellow, 5–lobed. pappus of many aristate bristles, unequal in length. achenes 0.3 cm long, narrowly obconical, blackish, terete or ribbed, Sparsely scarious, truncate at apex.

Flowering & Fruiting : Throughout the year.

Plant parts use: Leaves,

Medicinal uses: Its leaf extracts were used for infectious skin diseases in folk medicines. *Tridax procumbens* is also used as treatment for boils, blisters, and cuts by local healers in parts of India.

VITEX L.

Vitex negundo L.

Family : Verbenaceae

Local Name : Nirgundi

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Shrubs, 5 m tall; branches greyish– white with fine tomentum. Leaflets 3– 10 x 1– 2.5cm, ovate– lanceolate, base acute, margins Entire–sinuate with few scattered teeth in middle above. Inflorescences of terminal, compound, pyramidal, paniculate cymes, branches tomentose. Flowers c 0.4 cm long, bluish–purple; calyx white tomentose. Drupes 0.4 x 0.3 cm, ovoid, enclosed by campanulate fruiting calyx.

Flowering & Fruiting: January–June.

Plant parts use: Leaves, Seed, Root

Medicinal uses: *Vitex negundo* relieves muscle aches and joint pains. The leaf, seed and the root to treat excessive vaginal discharge, edema, skin diseases, pruritus, helminthiasis, rheumatism and puerperal fever.

WOODFORDIA Salisb.

Woodfordia fruticosa (L.)

Family: Lythraceae

Local Name: Dhayti

Shrubs or undershrubs, 2–3 m tall. Leaves 3.5–8.0 x 1.2–2.5 cm, Oblong–lanceolate, glabrous above and glandular punctate beneath. Flowers red, in racemes in axils of fallen leaves. Capsules 0.8–1.0 cm Long, ellipsoid, enclosed by persistent calyx tube.

Flowering & Fruiting : May–June.

Plant parts use: Bark, Root, Flowers

Medicinal uses: Dhayti is good for female disorders because it helps to reduce the symptoms of heavy and painful menstruation. It is very beneficial herb to cure range of vast diseases, it is used to cure diarrhea, piles and dysentery because it is a powerful astringent.

WRIGHTIA R. Br.

Wrightia tinctoria R. Br.

Family: Apocynaceae

Local Name: kala kuda

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Trees, 3– 4 m tall. Leaves 7.5– 15.0 x 2.5– 6.0 cm, acuminate at apex, rounded at base, pubescent along midrib below, occasionally glabrous. Flowers white, fragrant in terminal cymes. Follicles paired, Drooping, 25–45 x 0.6–1.2 cm cylindric, apicesconnate. Seeds 1.2–1.8 cm long, pointed; coma 3–5 cm long.

Flowering & Fruiting: March–May.

Plant parts use: Seed, Bark

Medicinal uses: Powder of the bark is used for treatment of kidney stones. *Wrightia tinctoria* is the best medicine for Diarrhoea and blood pressure,

XANTHIUM L.

Xanthium Strumarium L.

Family: Asteraceae

Local Name: Zalmani

Herbs, annual; stem rough with short hairs. Leaves broadly ovate, triangular, appressed hairy. Heads 0.4 – 0.8 cm across, green (young), in terminal and axillary spikes. Fruits 2 cm long, having 2 erect Mucronate beaks, covered with hooked prickles. Achenes 1 x 0.4 cm, oblong or ovoid, compressed, black.

Flowering & Fruiting: January–May.

Plant parts use: Root

Medicinal uses: *Xanthium strumarium* has many medicinal properties like voice,cooling, laxative, fattening, anthelmintic, tonic, digestive, antipyretic, improvesappetite.

ZIZIPHUS Mill.

Ziziphus rugosa Lam.

Family: Rhamnaceae

Local Name: Toran

Straggling shrubs, 4 m tall; stems and branches armed. Leaves 5–10 cm long, broadly elliptic, tomentose beneath, oblique, acuminate at apex, cordate at base,margins denticulate. Flowers in long

Peduncled, tomentose, paniculate cymes on leafless spinous branches. Drupes 0.6–0.8 cm across, whitish when ripe.

Flowering & Fruiting: December–February.

Plant parts use: Bark, Root

Medicinal uses: This plant is traditionally used for the treatment of diarrhoea, menorrhagia, ulcer, skin disease, cough, hypotension.

Discussion

A total 50 Wild medicinal important plant species belonging to 45 genera and 26 families have been reported from both the study areas. Highly represented families were Fabaceae with 9 species, Euphorbiaceae and Asteraceae with 5 species each Moraceae 4 species each and Combretaceae 3 species each and Apocynaceae, Rubiaceae and Lamiaceae 2 species each and Amaranthaceae, Annonaceae, Boraginaceae, Bixaceae, Capparidaceae, Caesalpiniaceae, Dilleniaceae, Sapindaceae, Mimosaceae, Sapotaceae, Rubiaceae, Menispermaceae, Phyllanthaceae, Lythraceae, Papaveraceae, Polygonoaceae, Rhamnaceae, Sterculiaceae and Tiliaceae with 1 species each. Pandey (2022) and Kumar (2015) also reported highly use of Fabaceae species in Kaccha area and Dang district of Gujarat.

During the present study, a smaller number of climber (2), Herb (11) and Shrub species compared to number of tree species (23) were recorded (fig. 2). Similar report was recorded by Patel and Varshney (2017) in Saputara hills, Gujarat. Tribal peoples use different plant part for various medicinal purposes. Of which, nearly 54% of the plant species are used as traditional medicine for various ailments. Sometime paste is also prepared from plant part and applied to cure various skin diseases, inflammation, swellings, insect bites, snake bites etc. In table the medicinal plants species are described and arranged in alphabetical order, local name along with family and plant part used as medicinal purpose. The study has brought out to light the traditional and indigenous knowledge. A collected 50 wild medicinal species belongs to 45 genera and 27 families used by tribe of Dhumkhal for treating and controlling the disease. Nearly 70-80 percent world population relies upon traditional medicines. Documentation of the indigenous knowledge and plants is the need of the hour. The transect studies were also carried out in study areas to substantiate the gathered information on wild medicinal plant. A total of 50 wild medicinal plant species were collected and identified from the study area for treated various human ailments.

Conclusion

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We collected 50 wild medicinal species from dhumkhal forest and focus on collection and identification of wild medicinal plants species. The present survey of the dhumkhal forest through covers a small area but reveals rich traditional information. This indicates that the tribals still depends largely on the natural wealth on their surroundings. The wild medicinal plants studies of these small tribals dhumkhal hill and forest of the duration of 4 months may lead to following data collection. We feel that there is need of extensive investigation of all the forest areas. Wild medicinal species investigated would be helpful in identifying basic need of tribals peoples that reflected.

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Fig. 1. Study area

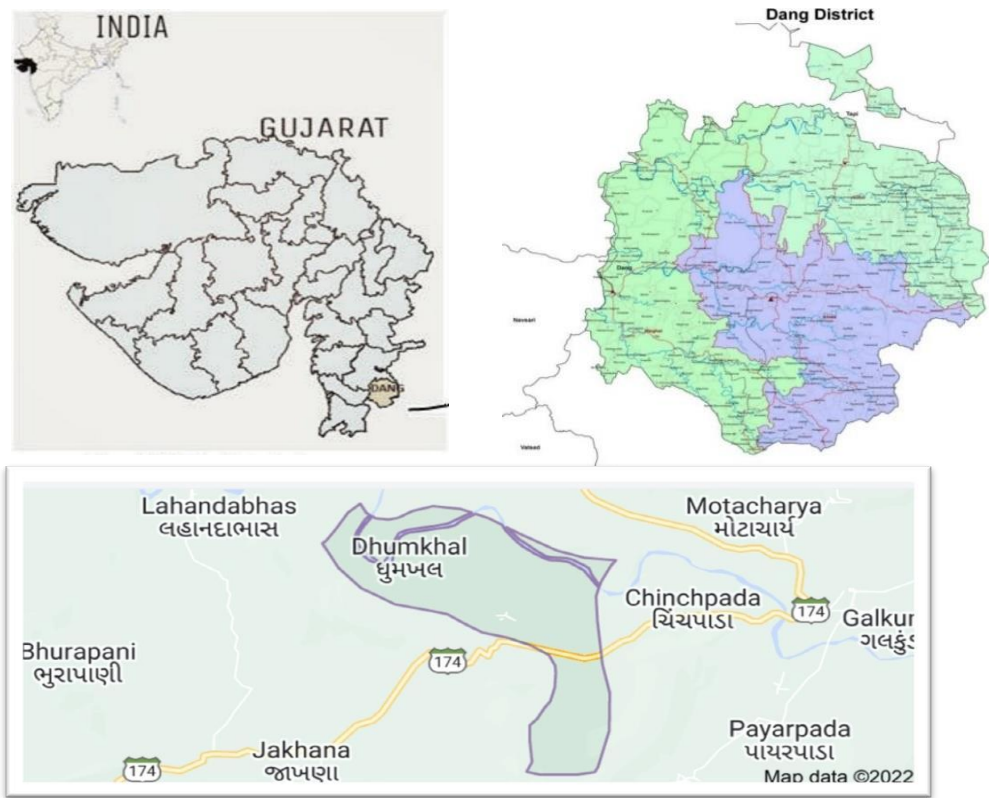


Fig. 2. Habit wise distribution of plants in study region.

