

Study of Traditionally used Ethno-Botanical medicinal plants in the rural, Adivashi areas of Nashik District, Maharashtra

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Abstract-

The study is concern the information 12 species of commonly used ethnomedicinal plants. They are traditional used by tribes and rural folks of Nashik district, Maharashtra, for the treatment of various human ailments and disorders. The paper gives botanical identity, local name, family and medicinal uses. The species like, *Enicostema axillare* (Lamk.) Raynal, - Nai (Gentianaceae), *Feronia elephantum* Corr. Kavath (Family Rutaceae), *Cardiospermum helococabum* L.; *Ficus bengholensis* L. -Wad (family—(Moraceae), *Ficus religiosa* L- Pimpal (Family-Moraceae), *Ficus glomerata* Roxb. Cor. Umber (Family-Moraceae), *Gloriosa superba* L-Kallawi (Family-Liliaceae), *Helicteres isora* L. -Murud sheng (Family -Sterculiaceae), *Hemidesmus indicus* (L.) R. Br. -Anantmul, Kawli (Family Asclepiadaceae), *Lantana camara* L-Ghaneri (Family-Verbenaceae), *Lawsonia inermis* L -Mehandi (Family-Lytheraceae) and *Moringa oleifera* Lamk, -Shewga (Family-Moringaceae)

Key words- Ethno-botany, medicinal plants,

Introduction-

Most of the areas of Nashik district is occupied by hilly region which have rich with diversity of vegetation mostly tribal and rural communities, depending on plant resources for their day to day life, The rural communities are well practised with traditional knowledge and are using various parts of major, minor plants and tree species extensively for health care and other purposes. The present study, therefore intended to emphasize 12 ethno medicinal plant species belonging to 10 families with their local name of plant parts used as medicine in Deola, Kalwan and Surgana, regions of District in Maharashtra.

Martial and methods-

The medicinal plants collected during the survey were properly identified with help of floras preserved in the form of herbarium. The recorded data compared with Study of Dwivedi (2004), Jain (1991), Verma et.al. (1995), Maheshwari et. al. (1986) etc. During the study total number of 18 tribes were observed (Ref. Gazetter of India, Maharashtra State, Rev. February, 5th, 2016) were visited which are spread in the Tahasils like Peth, Surgana, Igatpuri, Trambakeshwar, Kalwan, Dindori, Deola and Niphad,

Methodology-

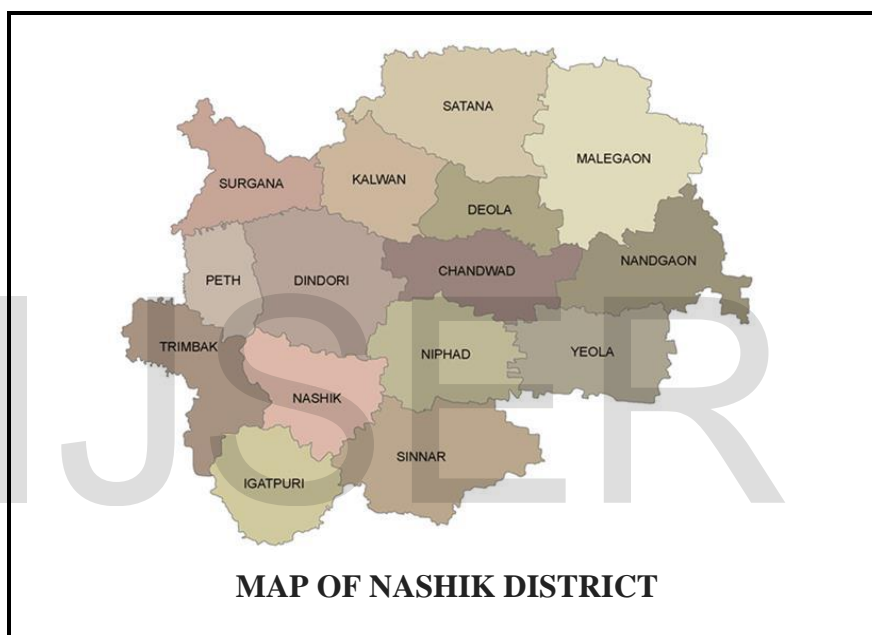
Several visits to tribal areas of Nashik region during the period from different localities in different seasons to understand the medicinal of various plants use to cure different diseases

traditionally. The present information has been collected from old and experienced men from various Adivashi communities like Bhills, Katkari, Kokana, Thakur, Warli and MahadeoKoli etc.

During the first year 2008-2009, the survey of tribal communities in Nashik district was completed. The cultural activities (rituals), Occupation, education, evil spirit knowledge of use of medicinal plants, crops were observed. Their population, culture, traditions and hygienic problems were also observed.

During the year 2009-2010, the medicinal men were searched and collected the information to understand the use of medicinal plants from them. The collected medicinal plants were preserved with the herbarium.

Demography-



Results and Discussion-

The traditional systems of medicine together with Homeopathy and folklore medicine continue to play significant role the health care system of population. The tribal population of India mostly dependent on use medicinal plants therapy for the health care needs. The present work has attracted the potential use of several medicinal plants to cure many serious diseases of mankind and animals. The practice Aurvedic medicines recorded in Sanskrit by legendry figures of Indian medicine, like Charka, Sushruta, Nagarjuna, Atreya and Jeevaka. India has 15% of medicinal plants out 20,000 medicinal plants of the word. Welknown medicinal plants of India and there uses have been recorded in the important Indian medicinal plants' literatures (Kirtikar and Basu, 1935, Chopra et. al 1956, Jain, 1991 & 1993, Chaudhari et. al. 1989, Trivedi, 2002, Binu et. al 1992, Rastogi and Mehrotra, 1993). Total 62 medicinal plants used in Homeopathy and Ayurvedic preparations (Kulkarni D. K. and Upadhye A. S; 2007). 80 Angiosperm species belonging to 39 Families Phenology, useful parts and local names employed against various medicinal applications (Patil D. A. 2007)

Ethenomedicinal study was conducted to document the indigenous medicinal plant knowledge used by traditional healers in South-Western Ethiopia (Haile Yiniger, Delenasaw Yewhalaw and Demel Teketay, 2008) only few medicinal plants have attracted the interest of scientist to investigate for remedy for tumors. A plant promotes host resistance against infection and destabilizing body equilibrium and conditioning body tissues, (Madhuri Sharma, pandey Govind 2009).

173 herbal plants with respective to local plant name, family use, plant parts used in different ailments by tribal local community of Jhunjhunu District of Rajasthan (Sharma O. P. et.al. 2007). Tribal people have lack scientific knowledge use the medicinal plants because they suffers from nutritional and health problems due to malnutrition, lack of educational facility and job opportunities (Sonowal C. J. 2010). 26 number of antipyretic plant species belonging to 20 families and 23 genera have been recorded (Manbendra Dutta Chaudhari, Meenakshi Bawari, L. Shyamali Singha 2010)

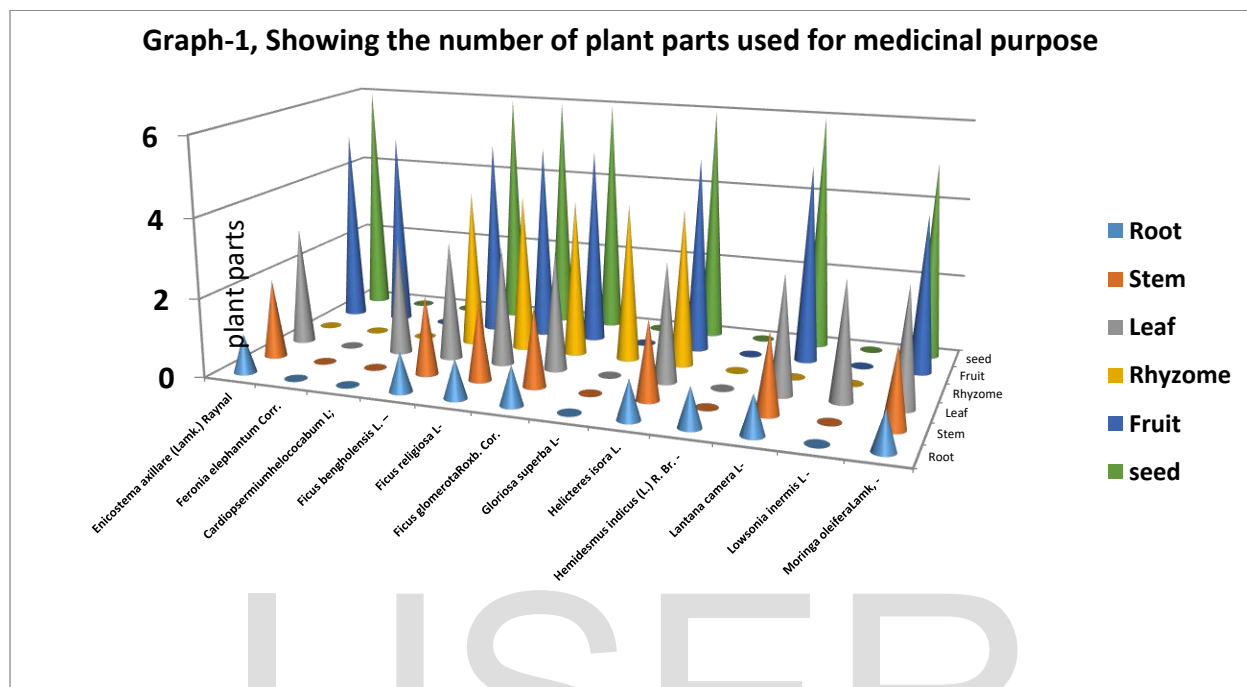
The study of Conservation of Ethno-medicinal plants of Mangrove forest in North Sumatra with conservation of total 48 medicinal plants, belonging to 23 families were studied by Onrizal and Mashhor Mansor, 2010.

The present article is focuses on 12 species of tradinally used medicinal plants which belongs to 10 families. The species like, *Enicostema axillare* (Lamk.) Raynal, - Nai (Gentianaceae), *Feronia elephantum* Corr. Kavath (Family Rutaceae), *Cardiopsermium helococabum* L; *Ficus bengholensis* L. -Wad (family—(Moraceae), *Ficus religiosa* L- Pimpal (Family-Moraceae), *Ficus glomerata* Roxb. Cor. Umber (Family- Moraceae), *Gloriosa superba* L-Kallawi (Family-Liliaceae), *Helicteres isora* L. -Murud sheng (Family -Sterculaceae), *Hemidesmus indicus* (L.) R. Br. -Anantmul, Kawli (Family Asclepiadaceae), *Lantana camera* L-Ghaneri (Family-Verbenaceae, *Lowsonia inermis* L -Mehandi (Family-Lytheraceae) and *Moringa oleifera* Lamk, -Shewga (Family-Moringaceae)

Table – 1. Medicinal plants collected from the study region

Sr. No.	Botanical Name	Common Name	Family	Habit	Part used
1.	<i>Enicostema axillare</i> (Lamk.) Raynal	Nai	Gentianaceae	Herb	All parts
2.	<i>Feronia elephantum</i> Corr.	Kavath	Rutaceae	Tree	Fruit
3.	<i>Cardiopsermium helococabum</i> L;	Kanphuti	Sapindaceae	Herb	Leaves
4.	<i>Ficus bengholensis</i> L. –	Wad	Moraceae	Tree	All parts
5.	<i>Ficus religiosa</i> L-	Pimpal	Moraceae	Tree	All parts
6.	<i>Ficus glomerata</i> Roxb. Cor.	Umber	Moraceae	Tree	All parts
7.	<i>Gloriosa superba</i> L-	Kallawi	Family-Liliaceae	Herb	Rhizome
8.	<i>Helicteres isora</i> L.	Murudsheng	Sterculaceae	Shrub	All parts
9.	<i>Hemidesmus indicus</i> (L.) R. Br. -	Anantmul, Kawli	Asclepiadaceae	Herb	Root
10.	<i>Lantana camera</i> L-	Ghaneri	Verbenaceae	Shrub	All parts

11.	<i>Lowsonia inermis</i> L -	Mehandi	Family- Lytheraceae	Shrub	Leaves
12.	<i>Moringa oleifera</i> Lamk, -	Shewga	Moringaceae	Tree	All parts



1. *Encicostema axillare* (Lamk.) Raynal, - Nai (Gentianaceae)

Morphological description:

Habitat - Terrestrial; Habit- Glabrous perennial herb, S-30 cm tall: Root- Tap root system; Stem - Erect, 4 angled, procumbent, green; Leaf - Leaves sessile, linear lanceolate, 25 -9 x 0.2-1 cm, acute or obtuse, 3-nerved, base: Inflorescence - Cymose; Flowers - Subsessile, in axillary short peduncled cyme, white: Calyx Calyx teeth ovate oblong obtuse, with narrow membranous margin: Corola - White, 6-8 mm long tube short lobes lanceolate: Androecium - Stamen 5, anther ovoid, acute: Fruit-Capsules. ellipsoid, glabrous; Seeds many light yellow, Flowering and Fruting - Sept. to Jan.

Uses:

1. The plant is bitter, acrid, thermogenic, digestive carminative and useful in dyspepsia, flatulence, abdominal ulcers, swelling, leprosy, skin diseases,hepatopathy etc.
2. It is useful in vitiated conditions of kapha and vata.
3. An infusion of the plant is used as bitter tonic and against fever.
4. The plant is locally applied in snake bite.
5. Diabetic patients who ingested 2g of E ittorale per day for 3 months, no tverse side effects were reported.

2. *Feronia elephantum* Corr. Kavath (Family Rutaceae)

Morphological description:

Habitat- Terrestrial, Habit- Moderate sized tree, 10-15 m tall, Root-Tap root system; Stem-Erect, hard, woody, branchlets with sharp, straight, 1-3.5 cm long spines, Leaf-Compound, imparipinnate, 6-15 cm long, petioles and rachis flat, narrowly winged, leaflets 3-9, opposite, obovate, 2-5x1.2-2.5 cm, cuneate, obscurely crenulate at apex; Inflorescence Cymose; Flower In lateral or terminal, lax panicles shorter than the leaves, pedicels slender, 8-10 mm long, Calyx- Small, with 5-6 triangular lobes; Corolla - Petals 5 or 6, elliptic- oblong, 4-5 mm long greenish or dull red; Androecium- Filaments subulate, dithecal, introse, hairy at the base; Gynoecium- 3-5 carpels, polycarpellary syncarpous, ovules many on five parietal placentae; Fruit - Globose, 5-8 cm in diam; Pericarp woody, greyish-green; Seeds ovoid compressed, embedded in brownish pulp; Flowering and Fruiting-March to September.

Uses:

1. The fruit contains acids, vitamins and minerals.
2. Leaves contain tannins and a volatile oil.
3. Fruit is used mainly to stimulate the digestive system.
4. In India the fruit forms part of the paste applied to tone the breast.
5. The astringent leaves are used to treat indigestion, flatulence, diarrhoea, dysentery and haemorrhoids.

3. *Cardiospermium helococabum* L.

Morphological description:

Habitat -- Terrestrial; Habit-Middle sized trees, 5-8m tall; Root- Tap root stem; Stem- Erect branches, spreading glabrous, deciduous; Leaf- Leaves ditrichous, subsessile linear oblong, 10-12 x 2.5-3 mm entire obtuse and glabrous, stipules ovate, acute; Flower- Incomplete, in axillary fascicles on leaf bearing branchlets; bracts fimbriate; Male flower numerous on short, slender pedicels; Perianth segments 6, distinct, oblong. 1-1.5 mm long, obtuse disc absent: Anthers 3 on short central column; Female flower few, subsessile, perianth segments as in males, disc corollary lacerate; Gynoecium- Ovary 3 locular; styles connate below, bifid at apex; Fruit-Drupe, fleshy, globose, pale yellow; Seeds 6 trigonous; Flowering and Fruiting-Oct. to March.

Uses:

1. The fruit is acrid, sour, bitter sweetish, cooling and useful in burning sensation, vomiting, biliousness, thirst, leprosy, piles, anaemia, kapha, sweats, annuriatridosha, ophthalmia, incipient blindness.
2. Leaves used in ophthalmia.
3. Fruits also used in diarrhoea, dysentery.
4. Fruit is rich in Vit-c (Ascorbic acid).

5. Fruit powder mixed with water and is applied in the form of paste on head for 2-3 hrs. to prevent hair loss.

4. *Ficus benghalensis* L. –Wad(family—(Moraceae)

Morphological description:

Habitat: - Terrestrial, Habit A large spreading tree, reaching 30 m high, . Tap root system and aerial roots from branches, Stem Hard woody ot parts softly pubescent, Bark thick and grey, hard, thick, Leaf Single, Ne rounded; Inflorescence Receptacle, peduncles 135 cm long stout goes coriaceous; Flower-Receptacle about 2 cm diam, sessile in pairs, aillaryrobose, puberlous, red when ripe; Male flowers numerous near the mouth of receptacles, tepals 4, lanceolate; Stamen one; Gall flower perianth as in male yle short; Female flowers perianth shorter than the male, style elongate. Fruit-Achene.

Uses:

1. Stem bark of *F. benghalensis*, root of *Asparagus rocemosus*, fruits of *Annonosquamosa*, and shoot of *Colebrookeaoppositifolia* are crushed and eaten on empty stomach to cure urinary problems (Paudyal 2000).
2. Milky sap from bark is used for diarrhoea, dysentery, indigestion, joint pain (Manandhar 2001; Shakya 2000), dermatitis, gum swelling, gonorrhoea (Basnet 1998) and snake bite.
3. It is valued to take out pus of wounds (Manandhar 1986) and it is mixed with war to give to children suffering dysentery (Yadav 1999).The decoction from aerial roots and water obtained from rice wash is used in diarrhoea.
4. Root Latex treats boils and wounds (Parajull 2001) and obstinate vomiting (Chopra et al 1956).
5. Aerial root juice is used for stopping menstruation and applied externally for body pain, toothache, diabetes, joint pain (Mishara 1998), body pain, theumatism (Kharel and Siwakoti 2002).
6. Boiled bark is employed in cold, cough and asthma (Bhattaral 2002).
7. Stem bark is used on cuts and wounds, joint pain, cracked heel and toe.
8. Latex is used to relieve toothache and cough.
9. The milky juice useful in piles and diseases of nose.
10. Milky juice applied externally applied for pains and bruises and in rheumatism.
11. It is considered as valuable application to the soles of the feet when cracked or inflamed and is also applied to the teeth and gums as remedy for toothache.
12. Aerial roots and *Hemidesmusindicus* taken in same quantity and crushed paste applied on hair once a week for long and healthy hair.

5. *Ficus religiosa* L- Pimpal (Family-Moraceae)

Morphological description:

Habitat -- Terrestrial; Habit-Large, glabrous, sometimes epiphytic trees; Root-Tap root system; Stem-Erect, hard woody, branched, Leaf- Leaves simple, coriaceous, alternate, ovate- round, 10-18x7-10 cm, narrowed upwards and apex linear lanceolate tail, often as long as blade, petioles 6-10 cm long slender, stipules ovate, acute; Inflorescence- Hollow receptacles; Flowers- three types of flower; male flowers few sessile, near the mouth of receptacle, tepals 3, broadly ovate, stamen one, female and gall flowers shortly stalked, either without perianth or with 5, lanceolate tepals, Gynoecium - in femaleid, brown, Flowering and fruiting April to Aug.

Uses:

1. . Aerial root juice is used for menstrual problems.
2. Paste of bark is taken with honey to treat cough and cold as well as accompanying mild fever.
3. Leaf juice and honey is taken on the problems like asthma, cough, eye diseases, sexual disorders etc.
4. Fruits are eaten to improve respiratory system.
5. Stem bark is used in gonorrhoea, bleeding, cuts and wounds.
6. The paste of powdered bark is good absorbent for inflammatory swelling and good for burns.
7. Shoots have purgative properties and recommended for wounds and skin diseases.
8. Fruits laxative and digestive, the dried fruit pulverized and taken in watercures asthma.
9. The latex is good for hemorrhages.
10. Finely crushed bark mixed with milk and it applied 3-4 times a day to cure : scabies.

6. *Ficus glomerota* Roxb. Cor. Umber (Family- Moraceae)

Morphological description:

Habitat-Terrestrial; Habit-Large, evergreen tree without aerial roots, 15- 15 m high; Root-Tap root system; Stem- Erect young shoot glabrous; bark grev.

Leaf-Leaves simple, alternate, ovate-oblong or elliptic lanceolate, 4.5-15x3.5-7cm, acute or rounded at base entire, bluntly pointed at apex, glabrous, petiole 1-3cm long, stipules lanceolate, scarious, pubescent, inflorescence-Receptacles, shortly pedunculate on short, leafless, warted branches, pyriform, and gallflowers together in one receptacles, Male flower forming zone near mouth; male flower sessile, tepals 3-4 membranous; stamens 2, anthers ovate elongate, female flowers with ovoid ovary, style elongate, stigma clavate; Fruit-Achenes, ovoid, 1-1.5mm long, tuberculate; Flowering and Fruiting February to June.

Uses:

1. It is used locally to relieve inflammation skin wounds, and fibrousitis.
2. It is good remedy for excessive appetite.
3. Unripe fruit useful in Kapha, Leucorrhoea, and blood diseases.
4. Ripe fruit useful in burning sensation, thrust, nose bleeding and intestinal worms.
5. Sap of root is used in diabetes.

6. The milky juice is administrated in piles and diarrhea and in combination with sesamun oil in cancer.
7. In Bombay, Sap is popular remedy to mumps and inflammatory and glandular enlargements.
8. Bark is useful in Asthma and Piles.
9. Fruit is useful in chronic bronchitis, dry cough, loss of voice, diseases of kidney and piles.

7. *Gloriosa superba* L-Kallawi (Family-Liliaceae)

Morphological description:

Terrestrial; Habit-Perennial tuberous herb; Root -Fibrous, stock fleshy, white, arched and often V-shaped; Stem -Aerial climbing stem annual, terete: Leaf-Leaves alternate, copposite or in whorls. Or 3, ovate Lanceolate 10-15x2-4 cm; cordate at base, entire, tip ending intendrillike spiral; Inflorescence-Solitary axillary cyme; Flowers-Large, aillary, solitary towards the end of branches, trimerous, perianth segments distinct linear lanceolate, greenish yellow turning, red, with crispy waved margins; Androecium-Stamens uSually six arranged in two alternate whorls, they are always opposite to tepals; Gynoecium-Tricarpellarysyncarpous with superior and trilocular ovary, stigma triobed; Fruit -Capsules, fusiform or oblong: Seeds many, subglobose, endospermic; Flowering and Fruiting Sept- Nov.

Uses:

1. Leaves are used for destroy head lice.
2. Tuberous roots are useful in curing bleeding, piles, ulcers, inflammations, skin Gseases, leprosy, indigestion, baldness and debility.
3. Roots are given internally as antidote for snake poison and considered useful in expulsion of the placenta.
4. If consume in large doses, it is poisonous and causes omitting, stomachae, and burning sensation.
5. Seeds are used for relieving rheumatic pain and as muscle relaxant.
6. Aerial stem used for easy delivery of pregnant women.
7. A tuber paste mixed with mustard oil and applies on whole body in the treatment of intermittent fever.

8. *Helicteres isora* L. -Murud sheng (Family -Sterculaceae)

Morphological description:

Habitat - Terrestrial; Habit - Erect shrubs, 1-2.5 m tall; Root - Tap root System; Leaf -Leaves bifarious simple, sub-sessile broadly ovate - oblong, 8- 135-10 cm, irregularly crenate - serrate ; Inflorescence - Cymose; Flowers- 25-3 cm long, few flowered, stellate tomentose; Calyx - Sepals 5, tubular 1.5- 2 cm long 2 lobed, stellate pubescent outside; Corolla - Petals 5, red, turning bluish

black very unequal, closely reflexed on the calyx; Androecium - Stamens 10, 47omitin column fused with 47omiting4747, much exserted; Gynoecium- Carpels 2-5, ovary 5-celled, conical on a curved 2-3 cm long 47omiting4747; Fruit - Follicle and spirally twisted into shape of a screw, follicle 4-6 cm long. linear, stellate tomentose; Seeds- Many, angular, black and endosperm; Flowering and fruiting-September to January.

Uses:

1. Fruits are used in black magic.
2. Bark paste applied on skin diseases.
3. The pods are crushed well and added with ginger oil boiled, The prepared oil is used as ear drops (2-3 drops) for pricking pain in ears and other ear elements.
4. The decoction prepared by the seeds is given for disorders of the abdomen and dysentery.
5. The decoction prepared from bark and root is an effective remedy for cough and asthma.
6. The powder of the pod is given in the dose of 4-6 grams 2 times a day for venereal diseases, hiccup, fever, etc.
7. Paste of the leaves is effective for various skin ailments like scabies, eczema, etc.
8. Fried pods are given to children to kill intestinal worms.
9. Fruits are useful in diarrhea, dysentery, hemorrhages and diabetes.

9. *Hemidesmus indicus* (L.) R. Br. -Anantmul, Kawli (Family Asclepiadaceae)

Morphological description:

Habitat - Terrestrial; Habit-Creeping or twining, glabrous shrub; Root- Hard, woody, scented, brown; Stem - Creeping or climbing, terete, cylindrical, solid, brownish green in colour; Leaf- Leaves simple opposite, elliptic-oblong to linear lanceolate, 3-10 x 1.5-5 cm, rounded or subcordate at base, entire, acute, often variegated with white above, petioles 3-4 mm long:

Inflorescence - Cymose; Flowers - In dense, axillary sessile cymes, pedicels, short, clothed with many ovate, acute bracts, greenish - purple; Calyx - Gamosepalous, ubrous outside, teeth, ovate, 1-1.5 mm long, with membranous margins; Corolla- Greenish outside, purple within, gamopetalous, tube very short, ovate - oblong, fleshy, acute; Androecium - Stamen 5, Eynandrium, filament distinct, anthers cohering at apex, terminated by an inflexed membrane; Gynoecium corner of stigma is covered by detachable appendages called translator, it has concave pointed, beat like portion covering the stigmatic corner and slender, sticky tail (Caudicle), projecting outwards at the base of the gynandrium; Fruit - Follicle, cylindric, linear, tapering to a point at apex, glabrous; Seeds - Ovate, oblong, flattened black; Flowering and Fruiting - Aug to Dec.

Uses:

1. For urinary problems like oliguria and BPH, The dried powder of the root is 1. given along with milk.

2. The conditions like skin infections, blood impurity, vomiting, leprosy etc can be controlled by regular intake of the root powder in dose of 3 to 6 gms twice daily along with decoction of this plant.
3. The juice of the roots can be applied as eye drops for burning sensation of the eyes.
4. The roots can be cooked and taken, It is helpful for increased body heat and vomiting diseases.
5. The root of the plant can be prepared as decoction for fever, urinary infections.
6. The root powder can also be administered for vomiting, leucoderma and piles, etc.
7. The roots are used as tonic, which is useful in loss of appetite, demulcent, fever and skin diseases.
8. It is also used as blood purifier, rheumatism and snake bites.
9. In vitiated conditions roots are used as in pitta, leprosy, skin diseases, asthma, vomiting/dysentery, and general debility.
10. Leaves are useful in vomiting in cure of wounds and leucoderma.
11. Stem is bitter and useful in hepatopathy, nephropathy, cough, asthma, inflammations etc.
12. The latex is good for conjunctivitis.
13. Plant capable of favorably altering or changing unhealthy conditions of the body and tending to restore normal bodily function, usually by improving nutrition.
14. Tonic strengthens and invigorates organs or the entire organism giving a feeling well being.
15. Women use Sugandi roots to promote a healthy pregnancy and to reduce the possibility of a miscarriage.
16. The root powder is steeped in warm water and then ingested as a tea. After drinking the tea users describe an overall relaxing calming sensation that envelopes them with feelings of euphoria and puts their mind at ease.
17. A piece of root tied in wrist of person suffering from fever.
18. Root paste given twice a day for 10 days in fever with anemia.
19. One tea spoonful of powdered root mixed with cup of water to cure fever.

10. *Lantana camera* L-Ghaneri (Family-Verbenaceae)

Morphological description:

Habitat - Terrestrial; Habit - Straggling or scandent shrubs; Root - Tap root system; Stem - Herbaceous, erect, lower portions woody, quadrangular, solid, hairy and green; Leaf - Leaves simple, opposite decussate, ovate, ovate oblong, 3-8 x 1.5-3.5 cm subcordate and cuneate at base, crenate dentate, surface rough and texture coriaceous, petioles 1.5-2 cm long sabrid; Inflorescence - Umbel; Flower - Sessile, complete, in dense corymbose, 2-4 cm broad head, on rigid flat topped peduncles, bracts lanceolate, acuminate, pentamerous, hypogynous, yellow or red; Calyx - Sepals 5 gamosepalous, tubular, truncate, pubescent; Corolla - Petals 5, fused, yellow turning orange red, pubescent outside; Androecium - Stamen 4, epipetalous, didynamous, introse; Gynoecium - Bicarpellary syncarpous, superior ovary, bicellular with one ovule; Fruit - Drupe, globose, bluish black; Flowering and Fruiting - Almost throughout the year.

Uses:

1. Take decoction of bark or infusion of leaves and flowering tops as tea.
2. Use 30 to 60 gms dried roots or 60 to 120 gms fresh roots in decoction used to "cure influenza, cough, mumps, high fever, malaria.
3. Rheumatism -Spread oil on leaves, warm over low flame and apply on affected part.
4. Decoction of fresh leaves used as gargle for toothaches.
5. Decoction of leaves and fruits used for wounds, ulcers and swelling.
6. The plant is useful in tetanus, vitiated conditions of vata, malaria, epilepsy and gastropathy.
7. A decoction of fresh root is good gargle for odontalgia and this is used by hill tribes for all types of dysentery.
8. Powdered leaves are used for cuts, wounds, ulcers and swellings.
9. An infusion of the leaves is good for bilious fever, vitiated conditions of vata and kapha, eczema and eruptions.
10. The fruits are useful in pustules, tumours and rheumatism.
11. An infusion of leaves is good for vata and kapha.
12. Fruits are useful in rheumatism and tumours .
13. Powdered leaves used in cuts, wounds, ulcers and swelling.

11. *Lawsonia inermis* L -Mehandi (Family-Lytheraceae)

Morphological description:

Habitat - Terrestrial; Habit-Shrub or small trees; 3-5 m tall, Root- Tap root system; Stem - Branched, woody, Bark greenish brown, branchlets thorny: Leaf-Leaves, opposite, broadly elliptic lanceolate, ca 2x1 cm, acute at both ends, glabrous, petiole short; Inflorescence - In panicles; Flower- 10-12 mm a cross in axillary panicles yellowish pedicel short, slender strong smell; Calyx 3-5 mm long, campanulate, teeth 4, ovate, 2-3 mm long, acute; Petals - Pale yellow or creamy-white, sub orbicular, 3 mm long and as much broad, undulate; Androecium - Stamen 8, inserted in pairs on the calyx tube; Gynoecium - Syncarpus. 2-6 chambered style simple; Fruit-A capsule, globose, 5-6 mm in diam, Supported by persistent calyx; Seeds - Many, trigonous, tuberculate brown; Flowering and Fruiting -April to Aug.

Uses:

1. Leaves are used to dye and improve hair conditioning and soften skin of hand.
2. Leaves used for external application in headache and their decoction effective as gargles for sore throat.
3. Bark is given to patient suffering from jaundice, enlargement of spleen and skin diseases.
4. Leaves and young shoots extract is prepared which used in leprosy and perfumery and embalming.
5. Leaves also used in scabies, falling of hair, greyness of hair, etc.
6. Flowers are useful in burning sensation and fever.

7. Fresh leaves with black peppers taken with cows milk in jaundice.

12. *Moringa oleifera* Lamk, -Shewga (Family-Moringaceae)

Morphological description:

Habitat - Terrestrial; Habit-Middle sized trees with corky barks; Stem-Erect, smooth woody, branched; Leaf-Lleaves compound, 3-4 pinnate, upto 50 cm Jong, rachis thickened and articulated at base, pinnae and pinnules opposite, leaflet orbicular to obovate, 1-2 cm long, mucronate, glabrous on both surfaces; petiolules 2-6 mm long: Inflorescence-Puberlous panicles; Flowers - Whitish yellow in colour, fragrant, large, lax terminal; Calyx - Sepals cupshaped, 5 lobed, segments, unequal petaloid, linear. lanceolate, 10-12 mm long reflexed; Corolla-Petals white, unequal, spatulate, 12-15 mm long: Androecium- Stamen perfect 5, alternating with 5-7 staminodes; Gynoeceum - Ovary oblong, style cylindrical; Fruit - Pods, linear, upto 50 cm long. 54aduceus trianglnar; Seeds -3 angled and winged on angles; Flowering and Fruiting - almost throughout year mostly Jan-June.

Uses:

1. Young leaves can either be fried with shrimp or added as a topping in fish soup.
2. Leaves soup is said to increase urination and thus benefits the kidneys.
3. Moringa is used traditionally to fight many types of infections such as intestine, gum, prostate infections, skin disease, breathing disease, beadaches and migraines, arthritis, hair fall and more.
4. The leaves are rich in vit A and C which is useful in scurvy and wounds infammation and in kapha and vata.
5. Roots are useful in renal calculi.
6. Bark is cardiac and circulatory stimulant.

Plate-1



Enicostema axillare (Lamk.) Raynal, -
Nai(Gentianaceae)



Feronia elephantum Corr. Kavath (Family
Rutaceae)



Cardiopsermium helococabum L.



Ficus bengholensis L. –Wad(family—
(Moraceae)



Ficus religiosa L- Pimpal (Family-Moraceae)



Ficus glomerata Roxb. Cor. Umber (Family-Moraceae)

Plate 2



Gloriosa superba L-Kallawi (Family-Liliaceae)



Helicteres isora L. -Murud sheng (Family - Sterculiaceae)



Hemidesmus indicus (L.) R. Br. -Anantmul, Kawli (Family Asclepiadaceae)



Lantana camara L. -Ghaneri (Family-Verbenaceae)



Lawsonia inermis L -Mehandi (Family-
Lythraceae)



Moringa oleifera Lamk, -Shewga (Family-
Moringaceae)

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