CHAPTER IV

ENUMERATION OF ETHNOMEDICINAL PLANTS

Survey, Identifications and enumeration of the ethno-medicinally important plants related to their anti-inflammatory and analgesic properties in Sonitpur district of Assam.

Sonitpur district of Assam in India, located between 26° 30’ North - 27° 01’ North Latitude and 92° 16’ East - 93° 43’ East Longitude is famous for its enormous plant diversity. Sonitpur district is spread over an area of 5324 sq. kms. on north bank of Brahmaputra river. In terms of area, Sonitpur is the second largest district of Assam. The population of Sonitpur district is 16, 77,874 as per 2001 Census. The people here are not a homogeneous lot. Rather, they are a mosaic of ethnic groups, an admixture of diverse types of people. The land and climatic conditions are suitable for the growth and survival of numerous plant species. Many of these species have been stabilized by natural propagation and growth (Das 1998). The uses of this diverse flora as ethno-medicines by the people of this area exist with a valuable heritage of herbal remedies. Its rural and tribal people living in remote/forest areas still practice indigenous systems of medicine (Dutta 1985; Dutta & Dutta 2005, Hajra & Baishya 1980). The different tribes of this district in northeastern India depend on the natural plant resources. They depend on their neighbouring forests for much of their food, medicines, and for other material, cultural needs and recreation (Jain 1963, Jain & Borthakur 1980, Majumdar et al, 1978). Over the last few decades several ethnobotanic surveys from different areas of Assam in Northeast India have so far been conducted and reviewed (Dutta and Dutta, 2005, Kalita & Deb, 2002, 2004, Tiwari et al, 1998). However, there appears to be no report has so far been available from Sonitpur district on basis of
ethnomedicinal plants used for their anti-inflammatory and analgesic properties. Little study was although conducted by few workers on general ethnomedicinal uses of plants among the Bodo Tribe (Bora, 2003), among the Mishing tribe (Kalita, 1998), but that were only for documentation and enumeration of the flora in general form the district. Considering the background, an exploration activity on medicinal plant and formulation of drug containing the anti-inflammatory and analgesic properties of the Sonitpur district was conducted the following order:

* Folklore survey
* Identification and enumeration of the plants containing the anti-inflammatory and analgesic properties used by the local people of this district.

The results thereof achieved are enumerated in the following enumeration, the plants species are arranged in alphabetical order. Fore each plant species described, the details of the following particulars have been appended.

i. Botanical names and family
ii. Local name/ collection No./ place of Collection
iii. Description
iv. Flowers and fruits
v. Occurrence and distribution
vi. Folk uses recorded
vii. Traditional uses
viii. Biological Activity
ix. Chemical Constituents.
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1. *Abelmoschus esculentus* (L) Moench. (Malvaceae)

**Local name:** Bhendi, CDS-44, Kalabari

**Description:** An annual erect herb growing to 2 m tall, covered with hair throughout; leaves simple, 10–20 cm long and broad, alternate, palmately 3-5 lobed, coarsely toothed, scabrous.

**Flowers and fruits:** Flowers are large, yellow with purple center, fruit long, 6-8 ribbed, capsular containing numerous seeds.

**Occurrence and distribution:** It is cultivated throughout the district.

**Folk uses recorded:** The fresh tender fruit is used to any kind of burning. It is also used in irritation of the urinogenital system.

**Traditional uses:** The mucilaginous preparation used as a plasma replacement; decoction of immature capsules as anodyne, diuretic and useful in dysentery and gonorrhcea.

**Biological Activity:** The fruits are sweet, mucilaginous, emollient, cooling, aphrodisiac, stomachic, demulcent, constipating and tonic (Pullaiah, 2002). Unspecified parts of the plant reportedly possess diuretic properties. (Wickes & Uri, 1998) Seeds are stimulant, antispasmodic (Prajapati et al, 2003).

**Chemical Constituents:** The pods contain oleic acid and linoleic acid (Martin, 1995) carotene, folic acid, iboflavine, niacin, vitamin C, oxalic acid (Prajapati et al, 2003).

2. *Abras precatorius* L (Leguminoseae)

**Local name:** Latumoni, CDS- 72, Gohpur

**Description:** A deciduous, wiry climber with tough branches; leaves 5-10 cm long abruptly pinnate with 10-20 opposite pairs of leaflets; the; leaflets oblong, minutely apiculate, membranous, glabrous above, stipules minute.
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Flowers and fruits: Flowers are light pink, clustered on tubercles arranged along with the pedunculate racemes, usually shorter than leaves, campanulate, pedicel very short. Corolla 3-4 times the calyx. Fruits pod, turgid with a sharp deflexed beak; seeds are scarlet with a black spot.

Occurrence and distribution: It is found in some places on hedge and bushes in exposed areas.

Folk uses recorded: Decoction of the roots and leaves are widely used for cough and cold. Decoctions prepared by boiling the leaves with the seeds of Piper nigrum L. are given orally in menstrual pain.

Traditional uses: The seed paste is used to curing in stiffness of shoulder joints and paralysis. The fresh extract of leaves mixed with bland oil applied to painful swelling, leucoderma, itching and other skin diseases.

Biological Activity: The seeds are cytotoxic, possesses antifertility activity (Hussain et al, 1992) purgative, emetic, tonic, antiphlogistic, aphrodisiac and abortifacient. Root is tonic, diuretic, emetic and alexeteric.

Chemical Constituents: Roots contains precol, abrol, glycorrhizin and alkaloids abrasine, triterpenoids-abruslactone A, methyl abrusgenate and abrusgenic acid.and alkaloid/bases- abrine, hypaphorine, choline, trigonelline, precatorine and methyl ester of N, N- dimethyltryptophan metho-cation. Seeds contain also flavnoids. Leaves contain glycyrrhizin, precol, abrasine, Gallic acid, abrine, hypaphorine, alanine, serine, 5B-cholanic acid (Prajapati et al, 2003).

3. Agave americana L. (Agavaceae)

Local name: Bilati Sonn, CDS-86, Monabari

Description: It is succulent perennial with large rosette, sharply toothed leaves.

The leaves are thick and long
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**Flowers and fruits:** The flowers are in yellow colour in cluster, growing to 7 cm across, bloom on a pole-like stem.

**Occurrence and distribution:** It is cultivated as an ornamental plant as well as hedge.

**Folk uses recorded:** The extract of the leaves are used to curing syphilis and gonorrhea.

**Traditional uses:** Agave is used to treat ulcers and inflammatory conditions affecting the stomach. It is demulcent, laxative and antiseptic. It has been also used to treat wide range of other conditions, including syphilis, tuberculosis, jaundice and liver disease.

**Biological Activity:** It is demulcent, laxative and anticeptic.

**Chemical Constituents:** Agave contains oestrogen like isoflavonoids, alkaloids, coumarins, Vitamins like A, B₁, B₂, C and also contains hecogenin, chloragenin reckogenin, figogenin and dehydrohecogenin *(Prajapati et al, 2003)*.

4. **Ageratum conyzoides** L (Asteraceae)

**Local name:** Gondhwabon, CDS-027, Kalabari.

**Description:** An annual aromatic herb. Stem erect hairy green or purple. Leaves opposite, broadly ovate, crenate, coarsely hairy on both side.

**Flowers and fruits:** The inflorescence is a terminal corymb of many small heads; flowers are violated or white.

**Occurrence and distribution:** it is common weeds everywhere.

**Folk uses recorded:** It is used as antiseptic after any kind of damages of our skin. This reduced the pain and inflammation from those damages.
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**Traditional uses:** The juice from the fresh plant and the extract of the dried plant are used to cure allergic rhinitis and sinusitis. The fresh leaves extract is used to protect injuries. It is also used to prevent tetanus.

**Biological Activity:** The whole plant is anti-inflammatory and anti-allergic.

**Chemical Constituents:** The plant contains more than 0.7% essential oil. From analysis of the essential oil it is found that the oil consisting of agratochromene, dimethoxy-ageratochromene, candinene and caryophyllene. It also contains alkaloids and saponin (Prajapati *et al.*, 2003).

5. **Allium sativum** L (Liliaceae)

**Local name:** Nohoru, CDS -084, Rajabari.

**Description:** An annual glabrous, bulbous herb with pungent odour. Bulb short, consists of several smaller bulbs, and surrounded by thin, white sheath. Leaves are flat and narrow, attenuate-acute at the apex.

**Flowers and fruits:** Flowers are white with bulbils in globose head covered with a large bract.

**Occurrence and distribution:** It is cultivated everywhere.

**Folk uses recorded:** The heated extract mixed with oil used to cure general paralysis, facial gout and sciatica pain.

**Traditional uses:** It is used for cough and bronchitis. The aqueous solution of bulb extract in nasal instillation used to cure influenza. It is also useful in hypercholesterolaemia and atherosclerosis. A poultice of pounded bulb is used to treat boils, abscesses, phlegmons and centipede bites.

**Biological Activity:** It bulb constitutes antibacterial, anti-inflammatory, amoebiasis, oxyuriasis and colitis. It is also hypocholesterolaemic.
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**Chemical Constituents:** The essential oil obtained from the bulb contains allicin, diallyl disulfide, allyl propyl disulfide (Prajapati *et al.*, 2003).

6. *Alocasia macrorrhiza* (L.) Schott (Araceae)

**Local name:** Borkochu, CDS-069, Majikuchi.

**Description:** It is a perennial herb, around 1m in height. Rhizomes are cylindrical, long, and stout, with many nodes. Leaves are large, ovate-cordate with long stalks, surrounding the stem; margin wavy.

**Flowers and fruits:** Inflorescence in spadix, bearing male flower above and female below. Berry ovoid, red when ripe.

**Occurrence and distribution:** Grow wild in unused land, waste land and also cultivated somewhere.

**Folk uses recorded:** The stem juice is used to relieve scorpion and nettle sting.

**Traditional uses:** The leaves and rhizome extract orally administered for treatment of impetigo, furunculosis, phlegmon and snakebite. The paste of leave and rhizome is also externally used as plaster against furunculosis.

**Biological Activity:** It is Toxic, anti-fungal, (Wang and Ng, 2003), trypsin inhibitor and chymotrypsin inhibitor (Konarev *et al.*, 2008).

**Chemical Constituents:** Oxalic acid, calcium oxalate, flavonoids, cyanogenic glycosides, alocasia, cholesterol, β-Sitosterol, stigmasterol, campesterol, fucosterol, amino acid, malic acid, ascorbic acid, aspartic acid, citric acid, glucon, fructose, and sucrose, aspartinoglutamic protein and β-lactum etc. (Prajapati *et al.*, 2003).

7. *Alternanthera sessilis* L. (Amaranthaceae)

**Local name:** Matikaduri, CDS-066, Kalabari.
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**Description:** It is small creeping annual, much branched prostrate herb. Branches often purplish, frequently rooting at the lower nodes; leaves simple, opposite, somewhat fleshy, lanceolate, obtuse, sometimes obscurely denticulate, glabrous, shortly petiolate.

**Flowers and fruits:** Flowers are small, white, in axillary clusters; fruit compressed obcordate utricles.

**Occurrence and distribution:** It is widely distribute in wild condition throughout the district.

**Folk uses recorded:** The whole plant extract is used to cure stomach problems.

**Traditional uses:** The plant used to treat cough, burning sensation, diarrhea, leprosy and skin diseases.

**Biological Activity:** The plant is bitter, astringent, sweet, acrid, cooling constipating, depurative, cholagogue, galactagogue and digestive.

**Chemical Constituents:** The plant contains β-Sitosterol, stigmasterol, campesterol, α-spinasterol, oleanolic acid rhamnosome, 24-methylene cycloartenol, cycloeucalenol, 5-α-stimasta-7-enol, lupeol and palmitate (Prajapati et al, 2003).

8. *Amaranthus spinosus* L. (Amaranthaceae)

**Local name:** Hati Khootara, CDS-44, Rajabari

**Description:** It is an erect, glabrous, spiny herb, reddish green in colour, 30-60 cm in height with grooved branches and sharp divaricated spines in the leaf axils. Leaves are simple, alternate, ovate, laceolate, entire, glabrous, conspicuous below.

**Flowers and fruits:** Flowers are small sessile, yellowish white, numerous, indented axillary clusters and in terminal spike. Fruits are ovoid capsules, membranous.
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**Occurrence and distribution:** Throughout the district in waste and uncultivated land and in roadside also.

**Folk uses recorded:** Decoction of leaf is given orally to cure sinus problems. The whole plant used to cure snake bite

**Traditional uses:** The people are used to treat hyperdipsia, burning sensation, leprosy, eczema, bronchitis, leucorrhoea, abscesses, boils, burns and general debility.

**Biological Activity:** The plant is sweet, cooling, alexeteric, laxative, diuretic, antipyretic and appetizer.

**Chemical Constituents:** The plant contains amino acids, β-Sitosterol, stigmasterol, campesterol, cholesterol, glycosides of α-spinasterol, octacosanoate, glycosides and oleanolic acid (Prajapati et al, 2003).

9. *Amaranthus viridis* L. (Amaranthaceae)

**Local name:** Khootara, CDS-036, Hawajan.

**Description:** It is a monoecious annual herb; stems erect or occasionally ascending, sparingly to densely branched, striate, glabrous and usually becoming pubescent with multicellular hairs above. Leaves dentate-ovate to narrowly rhombic, blades 2-7 cm long, 1.5-5.5 cm wide, glabrous or lower surface pilose along the veins, apex usually narrow and with a small narrow imagination, petioles 1-10 cm long.

**Flowers and fruits:** Flowers green, in slender, axillary or terminal and often paniculate spikes, sometimes in axillary clusters in lower part of plant, both sexes mixed throughout the spikes, but pistillate flowers more numerous, bracts and bracteoles whitish, broadly lanceolate, membranous, with a short, pale or reddish
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awn; sepals 3 (4), those of staminate flowers ovate-oblong, ca. 1.5 mm long, apex acute, mucronate, those of pistillate flowers narrowly spatulate to oblong, 1.3-1.8 mm long, apex more or less mucronate; stigmas 2-3. Fruit subglobose, 1.3-1.5 mm long, not or only slightly exceeding the sepals, indehiscent or rupturing irregularly at maturity, conspicuously rugose throughout. Seeds are dark brown to black, more or less shiny, slightly compressed.

**Occurrence and distribution:** Throughout the district in waste and uncultivated land and in kitchen garden.

**Folk uses recorded:** It is used to cure eye irritation in some eye diseases.

**Traditional uses:** In Nepal, an infusion of powdered seeds of *A. viridis* is used for stomach problems and in pregnant women to alleviate labour pains (Mark, 2003). The Negritos of the Philippines apply the bruised leaves directly to eczema, psoriasis and rashes etc (Quisumbing, 1951). The root juice is used to treat inflammation during urination and It is also taken to treat constipation (Manandhar, 2002), treatment of respiratory and eye problems, to treatment of asthma (Muhammad & Amusa 2005).

**Biological Activity:** It is antipyretic, anti-inflammatory, diuretic, antirheumatic, antiulcer, analgesic, antiemetic, laxative, appetite stimulatory and antileprotic properties (Kirithikar and Basu, 1986; Hassan Sher and Khan, 2006; Quershi et al., 2008; Muhammad Ejaz Ul Islam Dar, 2003; Arshad and Khan, 2000; Muhammad and Amusa, 2005).

**Chemical Constituents:** The plant contains Rutin and Quercetin (Kumar et al., 2009).
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10. *Amorphophalus paeoniifolius* (Dennst) Nicolson.(Araceae)

**Local name:** Ol Kochu, CDS-047, Baliyan.

**Description:** It is stout herbaceous plant with underground hemispherical depressed dark brown corn; leaves compound, large, solitary, Petiole stout, mottled, around 1m long, leaflets 5-12.5 cm long of variable width, oblong, acute.

**Flowers and fruits:** Male and female inflorescences contiguous, neuters absent, spadix subglobose, longer then the fertile region. Spathe campanulate, pointed, greenish pink externally, base within purple.

**Occurrence and distribution:** It is cultivated found everywhere in the district and also found in wasteland.

**Folk uses recorded:** Some people used it for curing piles and acute rheumatism.

**Traditional uses:** The corn is used for curing arthralgia, tumours, inflammations, vomiting cough, bronchitis, asthma, seminal weakness, and general debility. The roots are used to cure ophthalmia, amenorrhea and boils (*Prajapati et al*, 2003).

**Biological Activity:** The corns are acrid, astringent, irritant, anodyne, anti-inflammatory, antihaemorrhoidal, expectorant, appetizer and anthelmintic.

**Chemical Constituents:** The corns contain betulinic acids, β-Sitosterol, stigmasterol, triacontane, galactose, arginine, histidine, leucine, isoleucine, lysine. Methionine, tryptophane and valine (*Prajapati et al*, 2003).

11. *Amphineuron extensus* L (Thelypteridaceae)

**Local name:** Bih-logani, CDS-037, Biswanath Chariali.

**Description:** Rhizome short-creeping, scaly; scales to c. 10 mm long, to 1 mm wide, brown, hairy. Fronds to c. 1.5 m long. Stipe to 70 cm long, with scales at the base like those of the rhizome, and bearing very short stiff pale hairs throughout.
Chapter IV. Enumeration of ethnomedicinal plant Lamina 1-pinnate, ovate, to 80 cm long; pinnae c. 25 pairs, c. 35 (−40) cm long, 3 (−3.5) cm wide, lobed three-fifths to two-thirds of distance to costae; a pair of much reduced basal pinnae sometimes present; veins commonly 8–10 pairs; basal vein from adjacent costules touching the sinus membrane or meeting below it at a varying angle to produce an excurrent vein; lower surface of rachis, costae and costules bearing very short acicular hairs; longer hairs also present on costules, veins and sinus membranes; glands variously distributed along costules and veins, small, pale yellow, short-stalked, spherical; hairs on surface between veins usually present on short, erect, colourless, acicular, with very small, colourless to pale yellow capitate hairs.

Flowers and fruits: As it is pteridophyte flowers and fruits are absent. Sorus confined to pinna lobes, supramedial, in slight depressions; indusium thin, shrivelled when old, bearing marginal yellow glandular hairs.

Occurrence and distribution: Widely distributed in every part of uncultivated land, wasteland and roadside of this district.

Folk uses recorded: It is used for healing purpose to reduce pain from snakebite and scorpion sting. The leaves are used with other plants to prepare herbal anti-rheumatic plaster.

Traditional uses: The paste of the leaves is mixed with Hypericum japonicum (Changkija, 1999).

Biological Activity: It has Antioxidative, antiproliferative and antipyretic properties.

Chemical Constituents: It contains alkaloids and saponins.
12. *Ananas comosus* (L.) Merrill. (Bromeliaceae)

**Local name:** Matikathal, CDS-054, Gohpur.

**Description:** It is a herbaceous perennial plant with short stout stem. Leaves are numerous spirally and compactly arranged, linear-lanceolate, acuminate, margin spiny, toothed, shining on the upper surface.

**Flowers and fruits:** Inflorescences are small. Much reduced, reddish, numerous, triangular-ovate, imbricate, fruits composite, succulent, bearing crown of leaves.

**Occurrence and distribution:** It is found as cultivated and somewhere in wild conditions also.

**Folk uses recorded:** It is used to induce abortion to unwanted pregnancy. The infusion of tender fruit is prescribed orally once a day in pharyngitis.

**Traditional uses:** The fruits are used to cure burning sensation, cough, malignant and tumours. It is also used for induced abortion.

**Biological Activity:** The roots are powerful purgative. The leaves are suppurative and insecticidal. The fruits are sweet, haematinic, cooling, sedative, stimulant and expectorant.

**Chemical Constituents:** In pine apple contains methyl-β-hydroxyoctanote, methyl-β-acetoxyoctanote, methyl and ethyl trans-3-octanote, ethyl-trans-3-hexanoate, ethyl and methyl-cis-4-octenoate, methyl and ethyl-cis-4-decenoate and some pentanols. The leaves contain ergosterol peroxide, 5-stigmasten-3β, 7α-diol and its C7 epimar, campesterol, stigmasterol and campestanol. Stem contains 3,4-dihydroxycinnamic and p-coumaric acids *(Hussain et al., 1992).*
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13. *Aristolochia roxburghiana* Klotsch (Aristolochiaceae)

**Local name:** Nilkot-tita(Mi), Nilakantha(As) CDS-053, Rajabari.

**Description:** Slender climbing vine. Stem woody at base, grooved, glabrous. Leaves alternate, long petioled; base cordate, acuminate at the apex.

**Flowers and fruits:** Inflorescences in axillary raceme; bract small; flowers numerous, purplish brown, perianth curved. Capsules are ovoid splitting in to 6 valves, seeds numerous.

**Occurrence and distribution:** It is found in wild forest and some unused field.

**Folk uses recorded:** Infusion of leaves is given orally in fever. Root in the form of paste is applied locally in insect bite.

**Traditional uses:** The roots are used in the treatment of colic, gastritis, entreties, diarrhea, food poisoning, rheumatism. It is used with some other plants to cure malaria (Prajapati et al, 2003).

**Biological Activity:** whole plant is oxytocic (Hussain et al, 1992). Roots are stomachic, carminative, immunenagogue and tonic.

**Chemical Constituents:** The leaves and fruits contain ceryl alcohol, β-sitosterol and aristolochic acid. The fatty acid composition of the seeds is myristic, palmitic, stearic, lignoceric and oleic acid. (Hussain et al, 1992, Chopra et al, 1956, Prajapati et al, 2003).

14. *Artemisia maritima* L. (Asteraceae)

**Local name:** Chirota, CDS 79, Sonapur.

**Description:** It is strongly aromatic; much branched shrubby perennial and highly dissected with grayish to white leaves.

**Flowers and fruits:** Flower heads yellow to yellowish-red arranged in clusters of auxillary spikes.
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**Occurrence and distribution:** It is common in highland area of this district.

**Folk uses recorded:** Infusion of leaves is given orally in stomach troubles.

**Traditional uses:** The plant is used in asthma and disease of brain. It is very effective in action on round worm.

**Biological Activity:** It is aromatic, bitter, digestive, carminative

**Chemical Constituents:** It contain santonin, β-santonin, pseudosantonin and artemisin. Essential oil contains α-abd-β-pines, comphene, cineol. Dicyclic aldehyde camphor, bornyl acetate, citral, α-terpinel and β-caryophyllene *(Prajapati et al, 2003)*.


**Local name:** Leteku, CDS-037, Dubia.

**Description:** It is a small tree. Leaves simple, 9-25 by 3-9 cm. alternate and spirally-clustered at intervals along the twigs, narrowly elliptic, apex acuminate, base acute, margin entire, reddish when young, finely brown-hairy, becoming dark green and shiny above and glabrous when mature. Midrib flat above, prominent below, petiole slender swollen at top and base.

**Flowers and fruits:** Flowers small grouped in raceme, axillary to caulisflorous, males and females on different trees. Males smaller arranged in slender clusters of 10 cm. long, mostly at the end of the branches, individual flower with short pedicel. Female slightly bigger, racemes clustered of 30 cm. long on old branches and main trunk. The fruit is a berry of 2.5 – 3.5 cm. in diameter, colored yellowish, pinkish to bright red or purple, 2.5-3.5 cm in diameter, glabrous, with 2-4 large purple-red seed,
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**Occurrence and distribution:** It is found in forest in some area of this district, often cultivated for edible fruits.

**Folk uses recorded:** It is used for curing eye diseases of cow.

**Traditional uses:** It is also used medicinally to treat skin diseases (Flora of Thailand).

**Biological Activity:** Antioxidant.

**Chemical Constituents:** 6'-O-vanilloylisotachioside (1) and 6'-O-vanilloyltachioside. *(Yang et al. 2007).*

16. *Calotropis procera* (L.)R.Br. (Asclepiadaceae)

**Local name:** Akon, CDS-058, Balijan.

**Description:** A small much-branched milky shrub, pale in colour. The branches, leaves covered with loose soft white wool; leaves opposite, subsessile, ovate, cordate at base.

**Flowers and fruits:** Flowers are beautiful lilac purple tinted in umbellate lateral cymes; fruit fleshy follicles. Green, seeds abundant with coma.

**Occurrence and distribution:** It is cultivated as well as widely distributed wildly in waste places.

**Folk uses recorded:** The decoction of bark is given orally once a day in epilepsy for three days.

**Traditional uses:** The powdered root promotes gastric secretions and is useful in asthma, bronchitis and dyspepsia. The leaves are useful in the treatment of paralysis, arthralgia and swelling. The flowers are used for asthma, catarrh and inflammations.
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**Biological Activity:** The whole plant is tonic, expectorant, depurative and anthelminic. The root bark is febrifuge, anthelmintic, depurative, expectorant and laxative. The flowers are bitter, digestive, astringent, stomachic, anthelmintic and tonic.

**Chemical Constituents:** Leaves contain calotropin and calotropagenin, plant latex contain calotropin (Chopra et al, 1956), calotoxin, uscharin, uscharidin, α and β amyrin and β sitosterol, urarigenin, syriogenin, proceroside, sterols (Hussain et al, 1992), Cardiac glycosides, uscharine, Calctin and gigantin (Prajapati et al, 2003).

17. *Cannabis sativa* L. (Cannabinaceae)

**Local name:** Bhang, CDS-061, Gopalpur.

**Description:** The plant is a strong aromatic annual herb. Leaves alternate or lower opposite, upper 1-3 and lower 5-11 partite, lobes narrow-lanceolate, coarsely serrate, long acuminate, scabid above, adpressed pubescent with seesile glands beneath, stipules lateral.

**Flowers and fruits:** Flowers are small, axillary, dioecious, greenish, male is short pendulous cymose, racemes in females.

**Occurrence and distribution:** Widely distributed throughout the district, rarely cultivated in homestead garden.

**Folk uses recorded:** The fume of the burning leaves is smoked in headache due to cold.

**Traditional uses:** The leaves are used in convulsions, otalgia, abdominal disorders, diarrhea, stomatalgia and haemorrhhoea. The bark is useful in inflammation, haemorrhoids and hydrocele.
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**Biological Activity:** The leaves are bitter, astringent, tonic, antidiarrhoeic and abortifacient. Inflorescence is top-intoxicant, stomachic, antispasmodic and analgesic (Kirtikar abd Basu, 1935). Resin produces inhibitory action on respiratory system musculotropic action, produce initial excitement flowed by depression an increases hexabarbital sleeping time, psychotomimetic effect (Hussain et al, 1992). It has anti-inflammatory, colic and stimulant properties (Prajapati et al, 2003). The plant is spasmolytic and analgesic. (Chopra et al, 1956).

**Chemical Constituents:** The oil from herb contains cannabinoids and long chain C-9 to C-39 n-alkanes; seeds contain Δ-tetrahydrocannabinol. Leaves contain flavonoid glycosides. Plant contains β-lectin, cannabidiol, cannabidiolic acid and cannabigerol (Hussain et al, 1992).

18. *Cassia alata* L. (Caesalpiniaeae)

**Local name:** Khorpat, CDS-039, Dubia.

**Description:** It is a small shrub, about 1.5m in height. The horizontal branches leaves peripinate, alternate; leaflet 8-12 pairs, broadly rounded, twigs and petioles reddish brown in colour.

**Flowers and fruits:** Inflorescence is in auxiliary and terminal erect spike; flowers are yellow in colour, pod long, seed numerous.

**Occurrence and distribution:** Grow wild in wet places throughout the district.

**Folk uses recorded:** The leaves and flowers are used to cure bronchitis, asthma and herpes.

**Traditional uses:** The leaves paste is prescribed for constipation, odema, hepatitis etc. The fresh leaves are used externally by rubbing to cure scabies, ringworm and impetigo and some are used fresh leaf extract in diseased parts.
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**Biological Activity:** The leaves and stem are antiseptic and laxative in nature.

**Chemical Constituents:** The leaves contain anthraglicosides, chrysophanic acid

(Prajapati et al, 2003).

19. *Cassia occidentalis* Linn. (Caesalpiniaceae)

**Local name:** Medeluwa, CDS-051, Kalabari.

**Description:** It is a defused offensively under shrub with furrowed sub-glabrous branches. Leaflet 3-5 pairs.

**Flowers and fruits:** The flowers are arranged in short peduncled racemes. Yellow in colour, fruits are cylindrical and compressed, septate glabrous pod contains 20-30 seeds.

**Occurrence and distribution:** Throughout the district, growing in large quantities at the wasteland area.

**Folk uses recorded:** The paste of leaves and flowers is applied locally in curing sores of mouth and tongue.

**Traditional uses:** The whole plant is used to cure cough, bronchitis, constipation and fever. The roots are used for inflammation, diabetes, strangury, dyspepsia. The leaves are used in ulcers, asthma, fever and hydrophobia. The seeds are used for fever, flatulence and dyspepsia.

**Biological Activity:** The plant is bitter, sweet, thermogenic, purgative, expectorant and febrifuge. The roots are bitter, acrid, thermogenic, diuretic, anti-inflammatory, digestive, stomachic and tonic. The leaves are bitter, acrid, depurative, vulnerary, anodyne and aphrodisiac. The seeds are purgative, stomachic and febrifuge.
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**Chemical Constituents:** It contains chrysophanol, emodin, glycosides, phycion, metteucinol-7-rhamnoside, jaceidin-7-rhamnoside, 5-tetrahydroxy-2, 2-dimethyl, 1-bianthraquinone, crude protein, ether extra, crude fibre, calcium, phosphorus, iron, niacin, ascorbic acid, β-sitosterol, emodin and phycion (Prajapati et al, 2003).

20. **Centella asiatica** (L) Urban (Apiaceae)

**Local name:** Bor Manimuni, CDS-022, Hawajan.

**Description:** It is a small trailing herb. Stems are slender, prostrate, rooting at the joints. Leaves are alternate, orbicicular, round or kidney shaped.

**Flowers and fruits:** Inflorescence in single umbel, bearing 1-5 small flowers, reddish in colour. Fruits are very small, compressed.

**Occurrence and distribution:** Widely distributed in wild condition in every household’s kitchen garden.

**Folk uses recorded:** The whole plant is used to cure stomach problems. It is given generally to women after child birth to reduce labour pain.

**Traditional uses:** It is used in therapy of fever, measles, haematemesis, diarrhea, dysentery, constipation, jaundice. External application in the form of poultices is prescribed for contusions, closed fractures and sprains (Prajapati et al, 2003).

**Biological Activity:** The whole plant possesses antibacterial, anti-inflammatory, dirutic and galactagogic activity

**Chemical Constituents:** Asisticoside, madecassoside, brahmoside, bicycloelemene, centelloside, indocentelloside, oxyasiaticoside, thankuniside,
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Asiatic acid, betulinic acid, centellic acid, centellose, kaempferol, hydrocotyline, linamarase, triterpenoids trisaccharides (Prajapati et al, 2003).

21. Chenopodium album L. (Chenopodiaceae)

Local name: Jilmil, CDS-040, Kalabari.

Description: This is a small odourless herb upto 3.5m in height, erect or ascending, stems often striped; leaves simple, oblong, deltoid or lanceolate, entire, toothed or irregularly lobulate.

Flowers and fruits: The flowers are in clusters in spike

Occurrence and distribution: It is widely distributed in all parts of district.

Folk uses recorded: The whole plant extract is used to cure Piles.

Traditional uses: It is used for haemorrhoids, ophthalmopathy, general debility and cardiac disorder.

Biological Activity: The plant is sweet, digestive, carminative, laxative, anthelmintic, diuretic, and tonic.

Chemical Constituents: The plant contains leucine, isoleucine, lysine, methionine, phenylalanine, threonine, valine and tryptophan, alkaloids, trigonelline, chenopodine, ecdysteroids and polypodine B (Prajapati et al, 2003).

22. Codiaeum variegatum L. (Euphorbiaceae)

Local name: Patabahar, CDS-050, Gopalpur.

Description: It is an ornamental shrub 2-6m high. Leaves are alternate, simple often multicoloured with a myriad of various shapes and sizes.

Flowers and fruits: Flowers are small, unisexual and borne in racemes but normally underdeveloped.
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**Occurrence and distribution:** Cultivated only throughout the district.

**Folk uses recorded:** Leaves are used as poultice on abdomen in urinary troubles.

**Traditional uses:** The leaf pressed extract of this plant is used to cure the venereal disease gonorrhea. The root is applied to tooth cavities for temporary relief of pain. The leaves are chewed to promote miscarriage. The twigs are used mainly to treat swellings, toothache and disease caused by spirits (Prajapati et al, 2003).

**Biological Activity:** Analgesic, antipyretic and anti-inflammatory.

**Chemical Constituents:** Cis and trans p-coumaric acid, tran-ferulic acid, ellagic acid, vanilla acid, protocatechuic acid (Prajapati et al, 2003).

23. *Colocasia esculenta* (L) Schott. (Araceae)

**Local name:** Kochu, CDS-057, Rajabari.

**Description:** A tuberous perennial with group of underground farinaceous corns. Leaves are with sheathing leaf base and erect petiol upto 1.2 m long bearing a thin coriaceous peltate ovate, cordate lamina.

**Flowers and fruits:** Spadix shorter than the petiole and much shorter than the spathe, appendix much shorter than the inflorescence.

**Occurrence and distribution:** It is found in everywhere in wasteland and roadsides.

**Folk uses recorded:** Roasted petioles are applied in the form of plaster for a week to cure rheumatic pain.

**Traditional uses:** The leaf juice is used for internal haemorrhages, otalgia, otorrhoea. The corn extract is used for curing somatalgia, alopecia and congestion of the portal system.
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**Biological Activity:** The leaf juice is styptic, stimulant and rebefacient. The juice of corn is laxative, demulcicent and anodyne.

**Chemical Constituents:** C. esculenta contains dihydroxysterols, 14α-methyl-5α-chlesta-9, 24-diene-3β, 7α-diol and 14α-methyl-24-methylene-5α-cholesta-9, 24-diene-3α, 7α-diol, β-sitosterol, stigmasterol. Along with these tetracos-20-en-1, 18-diol, 25-methyl triacont-10-one, octacos-10en-1, 12-diol, pentatriacont-1, 7-tien-12-ol and 25-methyl-tritriacont-21-en-1 also present here (*Prajapati et al*, 2003).

24. *Curcuma caesia* Roxb. (Zingiberaceae)

**Local name:** Kola halodhi, CDS-087, Kamdewal.

**Description:** A small erect perennial herbaceous plant with radical aromatic leaves arise from the rhizome upto 60 cm. Petioles long green, blade 30-45 cm long and 12-15cm width, oblong with a broad purple branch cloud down the middle spike.

**Flowers and fruits:** Flower bracts green, ovate, very obtuse 3cm, bracts of the crown rather longer, many, bright red. Flowers pale yellow and corolla limb red, obscurely 3 lobed.

**Occurrence and distribution:** Rarely found in homestead garden.

**Folk uses recorded:** The juice of rhizome is given orally in rheumatism, and in empty stomach in swelling. The rhizome extract used externally to cure skin diseases.

**Traditional uses:** The rhizome is applied to bruises and sprains.

**Biological Activity:** Rhizomes are stimulant, bitter, carminative, appetizer, tonic and anthelmintic (*Hussain et al*, 1992).
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**Chemical Constituents:** The rhizome oil contains camphore, camphene, bornylene and some sesquiterpene hydrocarbon (Chopra et al, 1956).

25. *Cuscuta reflexa* Roxb. (Convolvulaceae)

**Local name:** Akashilota, CDS-098, Gohpur.

**Description:** This is slender much branched yellow interwining parasite on shrubs and trees without contact with the soil.

**Flowers and fruits:** The flowers are sometime solitary or sometime in clusters of 2-4. Fruit are capsule with black seeds.

**Occurrence and distribution:** It is found throughout the district most commonly in road side.

**Folk uses recorded:** The whole plant extract is used to cure headache. Juice is applied on forehead 3-4 times daily or whenever required. The stem is also used as a medicine to cure bone fracture.

**Traditional uses:** Whole plant parts are crushed and applied on the scalp to prevent premature hair fall, graying of hair and control of dandruff (Sajem and Gosai, 2006). The plant is used for curing jaundice, cough, bronchitis, fever, paralysis. The seeds are applied as an anodyne.

**Biological Activity:** The plant is bitter, sweet, astringent, expectorant, carminative, anthelmintic, anti-inflammatory and diuretic.

**Chemical Constituents:** The fresh plant yields scoparone, melanettin, quercetin and hyperoside, quercetin 3-0-galactoside, 3-0-β-glucoside, 3,4-dicaffeoylquinic, 3,5-dicaf-teoylquinic and 3-caffeoylquinic acids (Prajapati et al, 2003).

26. *Datura metel* L. (Solanaceae)

**Local name:** Dhatura, CDS-103, Kalabari.
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**Description:** It is a small herbaceous plant around 1 m in height, branches pubescent when young. Leaves are alternate, unequal at the base, minutely pubescent on both surfaces.

**Flowers and fruits:** Flowers are large, white, solitary in the leaf axil. Capsule globose covered with slender spines.

**Occurrence and distribution:** Grows wildy on waste land as wild; also some people cultivated for ornament.

**Folk uses recorded:** The smoke of leaves is used to cure asthma. The fresh leaves extract one tea spoonful and same amount of curd is used to cure gonorrhea.

**Traditional uses:** The leaves are used to cure relief cough, asthma, rheumatism. The dried leaves and flowers are cut in small pieces and used in anti-asthmatic cigarettes.

**Biological Activity:** The leaves possess antispasmodic, toxic, sedative and anodyne properties.

**Chemical Constituents:** The whole plant contains alkaloids. Scopolamine, hyoscyamine, atropine and norhyoscyamine and vitamin C *(Prajapati et al, 2003).*

27. *Dracaena cambodiana* Pierr ex Gagnep. (Liliaceae)

**Local name:** Jam Lakhuti, CDS-074, Kakila.

**Description:** The plant is a small tree, 2-4m high, stem erect, occasionally woody at the base, hollow and brownish-red. Leaves linear with sheath and entire margins, crowded in bundles at the end of the branch.

**Flowers and fruits:** The inflorescence in terminal raceme; flowers yellowish green, Berry globose, red when ripe, single seeded.

**Occurrence and distribution:** Grow wild, usually in high land localities.
Folk uses recorded: The Plants is used for curing jaundice.

Traditional uses: The hard part of the stem is used to treat blood stasis, menstrual heamatometra, rheumatism, paresis, lumbago and osteodysma.

Biological Activity: It is diuretic, stimulant, anti-inflammatory, and antipyretic.

Chemical Constituents: The plant contains 22S-spirostane steroids (1beta,3beta,14alpha,20R,22S,25R)-spiropst-5-ene-1,3,14-triol, 1beta,3beta,14alpha,15alpha, 20R,22S,25R)-spiropst-5-ene-tetrol and namogenin B (Minh et al, 2009). In the stems of resiniferous Dracaena plants contains resveratrol, 7, 4’-dihydroxyflavone and pterostilbene, loureirin A and loureirin B (Fan et al, 2009). A new homoisoflavonoid, named cambodianol, together with the two known flavanes, (2S)-7,3’-dihydroxy-4’-methoxy-8-methylflavane (2) and (2R)-7,4’-dihydroxy-8-methylflavane (3), were isolated from the stems of Dracaena cambodiana (Liu et al, 2009).

28. Drymaria cordata (L.) Wild ex Roemer & Schultes (Caryophyllaceae)

Local name: Lai Jabori, CDS-131 Gahagiaon.

Description: It is a diffuse glabrous herb, 30-50cm long, dichotomously branched. Leaves are small, opposite, ovate-cordate, elliptic or orbicular, 1.4-2cm long. Stipules are bristly, forming an interpetiolar trings.

Flowers and fruits: Flowers are white, 5cm in axillary or terminal long peduncled cymes. Capsules ovoid, trigonous, 3-valved, shortly pedicelled.

Occurrence and distribution: Common in moist, uncultivated and homestead garden.
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**Folk uses recorded:** It is used to cure polypus nasal bleeding. The whole plant mixed with old molasses is given orally for three days in painful menstruation. The leaves paste is applied on forehead in fever.

**Traditional uses:** In heel crack Paste of leaves is applied over the heels before going to bed regularly till cure. *(Ignacimuthu, 2006).*

**Biological Activity:** It has stimulant and anxiolytic activity. The methanol extract of leaves possess anti-inflammatory activity *(Mukherjee *et al.*, 1998).*

**Chemical Constituents:** The plant contains tannins and triterpenes.

29. *Eclipta prostrata* (L.) L. (Asteraceae)

**Local name:** Keheraj, CDS-095, Kalabari.

**Description:** It is erect strigose-pilose annual herb, 10-60 cm tall. Leaves are opposite, lanceolate, 3-10 cm long, 5-25mm wide, acuminate, sessile, densely strigose-pilose on both sides. Heads terminal on stem and branches.

**Flowers and fruits:** Flowers are fertile, bisexual disc. White, 4-lobed; anthers are very shortly bifid at base. Achenes 2.8 mm long, 3-angled in ray flowers, compressed and 4-abled in disc florets.

**Occurrence and distribution:** It is widely distributed in homestead garden in wild condition as well as waste land and roadside.

**Folk uses recorded:** It is used to colour the hair and paste is used to promote hair growth. Fresh leaves are given to elephantiasis and curing the liver after dropsy. The whole plant extract is used to cure jaundice and to decrease temperature in fever.

**Traditional uses:** It is used against snake venom. Used in curing eruption, leucorrhoea, enterohaemorrhage *(Prajapati *et al.*, 2003).*
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**Biological Activity:** The leaves are laxative, Antidote, antihepatotoxic, anti-inflammatory (Prajapati et al., 2003).

**Chemical Constituents:** Eliptine, wedelactones, thiophene-derivatives (Prajapati et al., 2003).

30. *Eryngium foetidum* L. (Apiaceae)

**Local name:** Mandhonia, CDS-064, Gohpur.

**Description:** It is a tropical perennial and annual herb, Slender, evergreen, branched perennial with fibrous roots and lanceolate leaves 2-10 inches long, which have spinytoothed margins.

**Flowers and fruits:** Numerous, green-white flowers with leafy bracts appearing in summer.

**Occurrence and distribution:** It is cultivated in homestead garden throughout the district.

**Folk uses recorded:** The leave and root used with tae to cure indigestion.

**Traditional uses:** It is used to relieve stomach pains, and eliminate gas from stomach. This plant has traditionally been used as a treatment for epilepsy. The leaves of this plant are used to relieve menstrual pain, remove placenta, and shorten labour pain (Lans 2007). The decoction from the leaves of *E. foetidum* exerts an anti-inflammatory effect, when administered orally (Saenz et al., 1998).

**Biological Activity:** decoction from the leaves of *E. foetidum* has been evaluated for anti-inflammatory and analgesic properties (Saenz et al., 1998) topical anti-inflammatory (Garcia et al., 1999).

**Chemical Constituents:** The plant contains 2,3,5-trimethylbenzaldehyde, 5-dodecanone, 4-hydroxy-3, 5-dimethylacetophenone, carotol, Iron, carotene,
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riboflavin and calcium, α-cholesterol, brassicasterol, campesterol, stigmasterol, clerosterol, β-sitosterol, Δ5-avenasterol, Δ5-24-stigmastadienol and Δ7-avenasterol (Garcia et al, 1999).

31. *Euphorbia hirta* Linn. (Euphorbiaceae)

**Local name:** Dudhban, CDS-141, Gopalpur.

**Description:** It is erect annular or perennial herb, often with yellowish crisped hair, branches often 4-angled, leaves opposit, oblong, lanceolate, 1.5-3.6 cm long, acute, serrulate base obliquely cordate, dark green above.

**Flowers and fruits:** The involucres are stalked with many cyathia axillary and terminal, clustered in dance crowded cymes. Capsules are small, appressdly hair, breaking into 3 cocci with ovoid seeds, trigonous, reddish brown.

**Occurrence and distribution:** Widely distributed in wasteland, uncultivated land and roadside.

**Folk uses recorded:** The infusion of the aerial part is given orally in stomach trouble. It is used to cure bronchial asthma.

**Traditional uses:** The aerial part is containing milky juice used to cure warts. It is mostly used along with other anti-asthmatic herbs like gum plant and labia.

**Biological Activity:** The plant is sedative and expectorant and also antispasmodic. It is also galactogogue, antiasthmatic, antigonorhoeic, saprofic, vermifuse and colic (Chopra et al, 1956, Hussain et al, 1992).

**Chemical Constituents:** The plant contains flavonoids, phenolic acids, shikimic acids and choline (Prajapati et al, 2003). Several terpenes, anthocyanins (Chopra et al, 1956). From the aerial part 24-methylene cycloartenol, cycloartenol, β-sitosterol, euphorbol hexacozoate, β-amyrin acetate, 1-hexacosanol, tinyatoxin, 12-deoxy-4 β-euphorbol hexacozoate, β-amyrin acetate, 1-hexacosanol, tinyatoxin, 12-deoxy-4 β-
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32. *Garcinia pictoria* Roxb. (Clusiaceae)

**Local name:** Kuji thekera, CDS-089, Pahukata.

**Description:** This is 7-15m tall tree, with spreading branches, branchlets 4-angled, hairless, horizontnal. Leaves are opposite, elliptic-egg shaped, margin entire, hairless, shiny; leaf stalk up to 1 cm long stout.

**Flowers and fruits:** Flowers are unisexual. Male flowers 2-3 grouped together in leaf axils and old branches, about 8 mm long, faintly fragrant; female flowers axillary, solitaey, equal to or larger than male flowers. Berries globose or rarely ovoid, hairless, shiny, smooth, stalk less, pinkish brown when ripe; pulp sweet, acidic. Seeds are kidney-shaped to ovoid, laterally compressed.

**Occurrence and distribution:** General habitat of this plant is moist deciduous to evergreen forest. Now it is available in cultivated home garden of some area in this district.

**Folk uses recorded:** The fruit juice is used to cure jaundice, and urinary troubles. It is also used to cure dysentery.

**Traditional uses:** Seeds are used to relieve cough, catarrh affections of the throat and asthma. The golden yellow exudates of this plant are cured dropsy, drastic cathartic, rheumatism, leprosy and other skin infections.
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**Biological Activity:** It is tonic, astringent, anthelmintic and antibacterial activity.

**Chemical Constituents:** The plant contains morellin, neo-morellin, β-guttiferin and α-1-gutiferin (Prajapati *et al.* 2003).

33. *Gossypium arboreum* L. (Malvaceae)

**Local name:** Kopah, CDC-080, Gohpur.

**Description:** Tree cotton is a shrub attaining heights of 1 to 2 metres. Its branches are covered with pubescence and are purple in colour. Stipules are present at the leaf base and they are linear to lanceolate in shape and sometimes falcate (i.e. sickle-shaped). The leaves are attached to the stem by a 1.5 to 10 cm petiole. The blades are ovate to orbicular in shape and have 5 to 7 lobes.

**Flowers and fruits:** The flowers are set on short pedicels. An epicalyx is present, which is a series of subtending bracts that resemble sepals. It has large, ovate segments that are dentate, though sometimes only very slightly so. They are cordate at the base and acute at the apex. The true calyx is small, measuring only about 5 mm in length. Its shape is cupular, and there are 5 subtle dentations present. The corolla is a pale yellow on colour, sometimes with a purple centre, and occasionally entirely purple. It measures 3 to 4 cm in length. The staminal tube bears the anthers and is 1.5 to 2 cm in length. The fruit is a 3 to 4 celled capsule measuring 1.5 to 2.5 cm across.

**Occurrence and distribution:** It is cultivated throughout the district.

**Folk uses recorded:** The leaves are used to cure skin diseases. It is also used to prepare herbal anti-rheumatic plaster.
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**Traditional uses:** The seeds are used to reduce rheumatic pain (Pullaiah, 2002). Young and premature seeds are crushed; pills (ca 5–6 g each) are been prepared-one pill a day, preferably with milk is taken in empty stomach to improve memory power (Sajem and Gosai, 2006).

**Biological Activity:** Leaves are diuretic cooling, constipating and tonic; seeds anti-rheumatic. Roots are astringent, antidysenteric, diuretic, depurative, emmenagogue and abortifacient. The flavonoids show antibacterial activity (Hedin and Waage, 1986).

**Chemical Constituents:** It contains Sesquiterpene dimmer gossypol (Srivastava et al, 2002). Contains of Palmitic acid, oleic acid and linoleic acid in the seed oils was observed (Carter et al, 1966), flavonoids including gossypetin 7-0-glucoside, gossypetin 8-0-glucoside, quercetin 3-0-glucoside, quercetin 3-0-rhamnoglucoside, quercetin 7-0-glucoside, kaempferol 3-0-glucoside, and kaempferol 3-0-rhamnoglucoside (Parks 1965). In flower petals contains flavonoid glycosides gossypetin 8-0-rhamnoside, quercetin 3′-0-glucoside and quercetin 7-0-glucoside. (Waage and Hedin 1984). It contains terpenoid aldehydes (TAs) gossypol, heliocides and hemigossypolone (Altman et al, 1990).

34. *Hibiscus rosa-sinensis* L. (Malvaceae)

**Local name:** Jobaphul, CDC -063, Kalabari.

**Description:** It is an evergreen woody, glabrous, showy shrub, leaves bright green, ovate, entire below, coarsely toothed above.

**Flowers and fruits:** Flowers are solitary, bellshaped, with pistil and stamens projecting from the centre.
Occurrence and distribution: It is cultivated everywhere the district as ornamental plant.

Folk uses recorded: The infusion of leaves is given in empty stomach in curing jaundice. Infusion of flowers is given orally in painful menstruation.

Traditional uses: The plant is used for induce abortion and to treat headaches. The leaves are used to treat postpartum relapse sickness, boils, sores and inflammation.

Biological Activity: It is antipyretic, anthelmintic, antifungal and anti-inflammatory.

Chemical Constituents: This plant contain taraxeryl acetate, beta-sitosterol, campesterol, stigmasterol, cholesterol, ergosterol, lipids, citric, tartaric and oxalic acids, fructose, glucose, sucrose, flavonoids and flavonoids glycosides, hibiscetin, cyaniding, and cyanin glucosides, alkanes (Prajapati et al, 2003).

35. *Hydrocotyle sibthorpioides* Lamk. (Apiaceae)

Local name: Soru Manimuni, CDS-028, Hawajan.

Description: This plant is a prostrate creeping herb 1 to 2 cm tall with an unlimited spread via the wiry, hollow, green stems that root freely at the nodes. Leaves are alternate and/or in whorls at the nodes, compound, with 2 stipules, orbicular or nearly so. Palmate veination and lobed, lobes 7, quite variable, generally less than 1 cm wide. Glabrous and bright green.

Flowers and fruits: Flowers are borne in simple or compound umbels held on a long peduncle above the foliage mat. Small, perianth 5-numerous, stamens 5. Green.

Occurrence and distribution: Widely distribute in uncultivated land and in homestead garden wildly.
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**Folk uses recorded:** The whole plant extract is used to relieving stomach pain in child.

**Traditional uses:** The plant used to cure dysentery, liver troubles, nerve disorder, stomach troubles and induced appetite. The whole plant extract is given to generally to women after child birth. External application in the form of poultice is prescribed for closed fractures and sprains.

**Biological Activity:** The whole plant possesses antibacterial, anti-inflammatory, diuretic and galactagogic activity.

**Chemical Constituents:** 2-ethylacridine, 2-methyl-3-O-tolyl-6-hydroxy-4(3H)-quinazolinone, 3-(4-hydroxy-methylphenyl)-2-methyl-4(3 H)-quinazolinone, 9,10-dihydro-9,9,10-trimethyl-anthracene and demecolcine (Farong et al, 2007).

36. *Jatropha curcas* L. (Euphorbiaceae)

**Local name:** Bongali ara, CDS-086, Behali.

**Description:** It is a large deciduous soft wooded shrub, 3-4m in height with sticky juice. The leaves are alternate, broadly ovate, cordate, 3-5 lobed, glabrous and stipules are absent.

**Flowers and fruits:** Flowers are in loose panicles of cymes with yellowish green in colour. Fruits are ovoid, black, 2-valved cocci, seeds are brownish black.

**Occurrence and distribution:** It is found throughout the district and in hedges. Now a days some people as well as in some tea garden cultivated as it is sources of biofuel.

**Folk uses recorded:** It is used to cure deferent dental disorder and earache.
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**Traditional uses:** The latex of this plant is used to cure wounds and ulcers. The seeds are used for haemorrhoids, wounds and skin diseases. The seed oil is used externally for treatment in rheumatism and paralytic affections.

**Biological Activity:** The leaves are suppurative and insecticidal properties. The latex is styptic, purgative and haemostatic. The seeds are powerful purgative, sweet, thermogenic, digestive tonic, anthelmintic and depurative.

**Chemical Constituents:** The plant contains acid Val., sap Val., iod Val., hydroxyl Val., Polenske Val.,. The fatty acid composition of the oil is as myristic, palmitic, stearic, arachidic, oleic and linoleic acid (Prajapati et al, 2003).

37. *Justicia adhatoda* L. (Acanthaceae)

**Local name:** Titabahak, CDS-092, Solendi.

**Description:** This is a small evergreen, subherbacious bush. The leaves are 10-16 cms in length, broadly laceolate.

**Flowers and fruits:** The inflorescence is dense, short pedunculate, bractate and spike terminal. The corolla is large and white with lower lip streaked purple. The fruit is capsule.

**Occurrence and distribution:** The plant is found all over the district as wild and in cultivated as hedge.

**Folk uses recorded:** The local people used the plant to cure dental disorder like pyorrhea and bleeding gums.

**Traditional uses:** The leaf extract is used to cure in bronchitis and asthma. It is also relieve from cough, local bleeding due to peptic ulcer and piles. It is used in large dose the fresh leaf extract in treatment of tuberculosis.
Biological Activity: It is stimulant, bronchodilator, Autooxidant, antifeedant, toxic and hypotensive activities.

Chemical Constituents: The leaves contain essential oil and alkaloids vasicine, N-oxides of vasicine, vasicinone, deoxyvasicine, and maiontone. The roots are contain vasicinolone, vasicol, pegamine and 2’-glucosyl-oxychalcone. The flower of this plant contains β-sitosterol-D-glucoside, kaempferol and quercetin (Prajapati et al, 2003).

38. Justicia gendarussa (L) Burm (Acanthaceae)

Local name: Jatrasidhi, CDS-059, Dubia.

Description: The plant is an erect undershrub, 0.6 to 1.2 m in height with subterete branches, stem and branches in dark violate in colour. The leaves are simple, opposite, lanceolate, 7.5 to 12.5 cm in length with short petioled, glabrous and dark violate green in colour.

Flowers and fruits: Flowers are white, spotted purple within, clustered in the interrupted spike, fruits are glabrous capsules.

Occurrence and distribution: This is cultivated in hedge as well as found in wild condition everywhere in the district.

Folk uses recorded: Paste of leaves is applied locally in cuts.

Traditional uses: The root and leaves extracted are used to treat in Chronic rheumatism, cephalagia, facial paralysis, cough, bronchitis, arthritis, amenorrhoea, intermittent fever and debility.

Biological Activity: The roots and leaves are bitter, thermogenic, anodyne, emetic, expectorant, anti-inflammatory, diaphoretic, antiperiodic and insecticidal.
Chemical Constituents: The leaves of this plant contain as 2-amino benzyl alcohol, 2-(2’-amino-benzylamino) benzyl alcohol and their respective 0-methyl ethers (Rosman et al, 1988).

39. *Lagernaria siceraria* (Molina) Standley (Cucurbitaceae)

Local name: Jatilau, CDS-137, Rajabari.

Description: It is a large softly pubescent, climbing herb with 5-angled hispid stems and long tendrils; leaves are simple, long petaled, 5-lobed, cordate, dentate, hairy.

Flowers and fruits: The flowers are large, white, solitary, the males are long stalked and the females short-stalked; fruits are large, spherical, dumb-bell shaped. Seeds are many, white comprised smooth with marginal groove.

Occurrence and distribution: It is found wild but mainly cultivate in home garden.

Folk uses recorded: The Fruit is used to cure stomach problems and constipation.

Traditional uses: The leaves are useful in burning of the feet, cough, bronchitis, inflammation, skin diseases. The seeds are used in cough, fever, scalding of urine and dropsy.

Biological Activity: The roots are emetic, purgative and anti-inflammatory. The leaves are bitter, refrigerant, anodyne, expectorant, and diuretic. The seeds are purgative, cooling and brain tonic (Prajapati et al, 2003).

Chemical Constituents: The fruit contain cucurbitacin-B. The fruit juice contains β-glycosidase (Prajapati et al, 2003).
40. *Lantana camara* L. Moldenke (Verbenaceae)

**Local name:** Guphool, CDS-090, Borigaon.

**Description:** The plants are large scrambling evergreen, strong aromatic shrub with stout recurved prickles. The leaves are opposite, often rugose, scabrid on both side.

**Flowers and fruits:** Flowers are small. Normally orange but often white to dark red, in heads which are prominently capitate. Fruits are fleshy drups and blue or black on ripening.

**Occurrence and distribution:** It is widely distributed in wasteland, road side as a troublesome prickly weed.

**Folk uses recorded:** The fruits are used for curing in fistula, pustules, tumours and rheumatism.

**Traditional uses:** The plant is used as tetanus. A decoction of fresh roots is a good gargle for odontalgia, some hill tribe used for curing all types of dysentery. Powdered leaves are used for cuts, wounds, ulcers and swelling.

**Biological Activity:** The plant is vulnerary, diaphoretic, carminative, antispasmodic and tonic.

**Chemical Constituents:** The plant contains appreciable amounts of tannins and sugar, crystalline glucoside is found in the resin. Present of lantadene-A, lantadene-B, alkaloid like lancamarone quinine, lantamine also found in this plant (*Prajapati et al*, 2003). The leaves contains lantalic acid, lactic acid, 3-keto ursolic acid, bark and root contain alkaloid lantanine (*Hussain et al*, 1992). Plant also contains pentacyclic triterpenoids, camarinic acid, camacic acid, oleanolic acid, pomolic acid, lantanolic acid, lantanilic acid and lantic acid from the aerial parts of *L. camara* (*Begum et al*, 1995) and oleanolic acid (*Misra & Laatsch* 2000).
41. *Lasia Spinosa* (L) Thw. (Araceae)

**Local name:** Chengmora, CDS-094 Gohpur.

**Description:** This is a perennial herbaceous plant with radical leaves arise from the corn. Leaf simple, alternate, sagittate, pinnatifid, with aculei along veins on lower surface.

**Flowers and fruits:** Inflorescence in elongated spadix; peduncle up to 75 cm long, aculeate; spathe greenish brown to purplish, up to 55 cm long, slightly twisted; flowers pinkish and finally greenish tan. Fruit leathery berry.

**Occurrence and distribution:** It is widely distributed in wasteland some parts of district.

**Folk uses recorded:** The root and leaves are used to cure sore throat and piles.

**Traditional uses:** The plants are used for intestinal diseases. Paste from tender leaves is made for external use in burns. Decoction of rhizome is also useful in gastric and stomach problems. *(Majumdar and Dutta, 2007)*.

**Biological Activity:** The plants are colic. Leaves are stomachache. The whole plant shows anti-inflammatory and anti-rheumatism properties *(Nguyen et al, 2004)*.

**Chemical Constituents:** \( \beta \)-sitosterol acetate, stigmasterol and its acetate *(Dinda et al, 2004)*.

42. *Lawsonia inermis* L. (Lythraceae)

**Local name:** Jetuka, CDS-070, Gohpur.

**Description:** It is a glabrous much-branched deciduous shrub, leaves are simple, opposite, entire, lanceolate, petioles very short or absent.

**Flowers and fruits:** Flowers are white or rose-coloured, fragrant, in large terminal pyramidal panicled cymes; fruit globose capsules, seeds numerous, smooth.
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Occurrence and distribution: It is cultivated as hedge plant.

Folk uses recorded: It is used to cure nail infections. Leaves are used sore throat and headache.

Traditional uses: The roots are used in curing burning sensation, leprosy and skin disease. The leaves are useful in wounds, ulcers strangury cough, bronchitis, rheumatic pain, inflammations, scabies, ophthalmia, greyness of hair and jaundice. The flowers are used for burning sensation, amentia, insomnia and fever.

Biological Activity: The root is bitter, refrigerant, depurative, diuretic, abortifacient and trichogenous. The leaves are bitter, astringent, expectorant, anodyne, anti-inflammatory and liver tonic.

Chemical Constituents: 2-hydroxy-1, 4-naphthaquinone (lawsone) (Alia et al, 1995).

43. *Leucas indica* (L) R. Br. (Lamiaceae)

Local name: Ronga doron, CDS-135, Rjabari.

Description: It is small erect annual herbs. Leaves are entire or dentate. plants with quadrangular stems and branches; leaves are sub-sessile, linear, obtuse, crenate, and pubescent.

Flowers and fruits: Flowers are verticillasters, few to many flowered, widely spaced, uniform or reduced in size at end of branches. Calyx tubular to obconical, straight or curved, truncate or oblique at throat, projected on posterior side. Corolla usually purple, brownish, or scarlet, 2-lipped, tube included; upper lip straight, galeate, densely villous outside; lower lip longer, 3-lobed, middle lobe largest.

Occurrence and distribution: common in uncultivated and waste land

Folk uses recorded: The leaves extract is used as eye drop to cure eye diseases.
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Traditional uses: The leaves are used in constipation. The young shoot is used to cure Bodyache, the leaves is used to cure urinary problems (Acharya and Pokhrel, 2006). 20 gm leaf paste prepared in one tumbler cow’s milk is taken internally once a day for one week against cough (Udayan et al, 2007).

Biological Activity: The leaves and flowers are acrid, thermogenic, carminative, digestive, anthelmintic, anti-inflammatory and depurative.

Chemical Constituents: It contains ursolic acid, β-sitosterol, oleic, linoleic, linolenic, palmotic and stearic acid (Hussain et al, 1992).

44. *Leucas plukentii* (Roth) Spreng (Lamiaceae)

Local name: Doron, CDS-060, Kalabari.

Description: This is an erect or diffuse much branched herbaceous annual with scabrid quadrangular stems and branches; leaves are sub-sessile, linear, obtuse, crenate, pubescent.

Flowers and fruits: The flowers are small, in dense terminal, pure white in colour; fruit are nutlets, oblong, and brown, smooth.

Occurrence and distribution: It is found throughout the district as a weeds on waste land and road side.

Folk uses recorded: The whole plant extract is used with small amount of honey to cure cough.

Traditional uses: The juice of the leaves is highly recommended as an eye drop encephalopathy due to worm infestation in children. The leaves and flowers extract is useful in colic, arthralgia, chronic skin eruption.
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**Biological Activity:** The leaves and flowers are acrid, thermogenic, carminative, digestive, anthelmintic, anti-inflammatory, sudorific, antipyretic, expectorant, antibacterial and depurative.

**Chemical Constituents:** Plant contains oleanolic acid, ursolic acid and β-sitosterol. Seeds conatin Oleic, linoleic, linolenic, palmotic, stearic acid, alkaloid and glucoside (Hussain *et al.*, 1992).

45. *Litsea salicifolia* Roxb. (Lauraceae)

**Local name:** Dighloti, CDC- 067, Hawajan.

**Description:** It is small evergreen trees, up to 10 m tall. Branchlets glabrous. Leaves alternate; petiole 1-1.5 cm, glabrous; leaf blade long elliptic, glaucous and yellow-brown puberulent when young abaxially, glabrous adaxially, pinninerved, lateral veins 10-15 pairs, base acute, apex acuminate or acute.

**Flowers and fruits:** Umbels axillary, in cluster of 2-6; peduncle 3-7 mm, glabrous or subglabrous; male umbel 4-6-flowered. Male flowers: pedicel ca. 1 mm, pubescent; perianth segments 6, ovate or lanceolate; fertile stamens 9; filaments villous at base, of 3rd whorls each with 2 stipitate globose glands at base; rudimentary pistil lacking. Fruit oblong, 10-11 × 5-6 mm; fruiting pedicel 4-7 mm, glabrous.

**Occurrence and distribution:** It is found in forest, river bank, uncultivated waste land

**Folk uses recorded:** It is generally used to prepare with other plants rheumatic pain plaster.

**Traditional uses:** *Litsea salicifolia* is one of the many plants used as phytostereotype, traditionally by various tribes of Assam. Tamang people used as
Chapter IV. Enumeration of ethnomedicinal plants preventor of cholera. (Tamang, 2003). Bark pounded and mixed with water is applied on bone fracture and tightly tied with a piece of cloth to set right the bone; bark paste is also administered twice daily against boils (Srivastava, 2010).

**Biological Activity:** It has Phytopesticidal and insecticidal properties.

**Chemical Constituents:** The plant contains benzyl benzoate, phenylethyl benzoate, β – phellandrene, 1,8- cineole and β – ocimene (Phukan & Kalita, 2005).

46. *Mentha arvensis* Linn. (Lamiaceae)

**Local name:** Padina, CDS-107, Gohpur.

**Description:** It is perennial herb, stems are quadrangular, erect or prostrate. Rooting at the nodes, leaves are opposite, ovate, softly tomentose on both sides, margins serrate.

**Flowers and fruits:** Inflorescence in axillary capitate whorl; flowers are small, white or light purple.

**Occurrence and distribution:** Grow in wild condition in hilly region and cultivated everywhere.

**Folk uses recorded:** Infusion of aerial portion given orally once a day for three days for curing stomach problems.

**Traditional uses:** The oil extracted from it is effective in coryza, diaphoretic, headache, cough sore throat, arthralgia, neuralgia, colic and vomiting.

**Biological Activity:** The entire plant is antibacterial and anti-febrile. The essential oil is anaesthetic and anodyne.

**Chemical Constituents:** The essential oil consisting with L-menthal, menthyl acetate, L-menthone, L-a-pinene, limonene (Prajapati et al, 2003).
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47. *Moringa oleifera* Lam. (Moringaceae)

**Local name:** Sajina, CDC-016, Michamari.

**Description:** Middle sized graceful tree with corky grey bark. The branches are easily breakable. Leaves usually tripinnate, thickend and articulated at the base. Leaflet elliptic or obovate.

**Flowers and fruits:** Flowers are white in large puberuous axillary panicles. Fruits are pods 45cm long.

**Occurrence and distribution:** Throughout the district in high land, tea cultivated land.

**Folk uses recorded:** A decoction prepared by boiling leaves with *Allium sativum* L in water is prescribed twice a day in pneumonial fever. The bark is used to prepare rheumatic pain plaster.

**Traditional uses:** The root is used in curing dyspepsia, diarrhea, paralysis, any kinds of inflammation. The bark is used to cure from ringworm. The leaves are useful to curing scurvy. The seeds are usesful in intermittent fevers and ophthalmopathy.

**Biological Activity:** The roots are bitter, acrid thermogenic, digestive, carminative, anthelmintic, constipating, anodyne, anti-inflammatory, ophthalmic, expectorant, haematinic and alexipharmic stimulant. The bark is bitter, thermogenic, abortifacient, antifungal and circulatory stimulant. The leaves are anti-inflammatory, anodyne, anthelmintic and ophthalmic. The seeds are acrid, bitter, anodyne, anti-inflammatory, purgative and antipyretic.

**Chemical Constituents:** Carotene, Nicotinic acid, ascorbic acid and prolamin.

In protein are arginine, histidine, lycine, tryptophan, phenylalanine, methionine, Threonine, Leucine, isoleucine and valine. The essential amino acids present in the
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Leaf protein are arginine, histidine, lysine, tryptophan, phenylalanine, methionine, leucine, isoleucine and valine (Prajapati et al. 2003).

48. *Nyctanthes arboristis* L (Oleaceae)

**Local name:** Sewaliphool, CDS-105, Kalabari.

**Description:** It is a hardy small tree upto 10m in height with greenish white rough bark. The young branches are quadrangular. Leaves are simple, opposite, ovate, acuminate, and scabrous above with short bulbous hairs.

**Flowers and fruits:** The flowers are small, white with bright orange corolla tubes, 3-7 in each head, in trichotomous cymes. Fruits are compressed capsule.

**Occurrence and distribution:** This is cultivated throughout the district in home garden.

**Folk uses recorded:** The juice prepared from leaves or bark should be taken 2-3 times daily as remedy in rheumatoid pain in joints. Also used to relieve menstrual pain.

**Traditional uses:** The leaves are used to cure obstinate sciatica, inflammation, dermatopathy, chronic fever, bronchitis, asthma and constipation. The flowers are used for relieving from inflammation, dyspepsia, greyness of hair and baldness. The seeds are used for scurvy.

**Biological Activity:** The leaves are bitter, thermogenic, antibacterial, anodyne, anti-inflammatory, digestive, anthelmintic, depurative, expectorant, laxative and tonic. The flowers are bitter, astringent, ophthalmic, stomachic and carminative.

**Chemical Constituents:** The flowers contain α-mennitol, tannin and glucose. The oil consisted with glycerides of linoleic, oleic, lignoceric, stearic, palmitic, β-
sitosterol. The leaves of the plants contain tannic acid, methyl salicylate, mannitol and amorphous resin (Prajapati et al, 2003).

49. *Oldelandia corymbosa* L. (Rubiaceae)

**Local name:** Bonjalook, CDC-123, Hawajan.

**Description:** It is a much spreading annual with erect ascending stem, leaves are simple, opposite, sub-sessile, linear, and narrow, stipules short, membranous with short bristle.

**Flowers and fruits:** Flowers are white with pair or three in one group, pedicelled on a very slender axillary’s solitary peduncle; fruits are capsules.

**Occurrence and distribution:** It is found everywhere as weed on dry and wet land.

**Folk uses recorded:** It is used in curing urinary troubles in children. Whole plant extract also used in curing jaundice.

**Traditional uses:** The plant is used for fevers, depression, jaundice, hyperdipsia, dyspepsia, constipation, leprosy, skin diseases, and bronchitis.

**Biological Activity:** It is bitter, acid, refrigerant, digestive, anthelmintic, diuretic, expectorant, anti-inflammatory, antioxidant and hepatoprotective.

**Chemical Constituents:** It contains caffeine and fumaric acid, biflorone, 6α-hydroxygeniposide, scandoside methyl ester (6β-hydroxygeniposide), asperulosidic acid, deacetylasperuloside, asperuloside, 10-β-benzoylscandoside methyl ester, 10-O-p-hydroxybenzoylscandoside methyl ester, (+)-lyoniresinol-3α-O-β-glucopyranoside, and rutin (Prajapati et al, 2003).
50. *Oxalis corniculata* L. (Oxalidaceae)

**Local name:** Soru Tengeshi, CDS-093, Kalabari.

**Description:** This is a small creeping perennial herb where roots form at nodes. The leaves are alternate, long petiolate, trifoliate, leaflets obcordate with a conspicuous notched apex, each leaflet up to 2cm long.

**Flowers and fruits:** Flowers are yellow, penta-merous, borne in axillary few flowered inflorescence. Fruits are cylindrical capsule containing numerous black seeds.

**Occurrence and distribution:** It is found commonly in damp shady places, roadsides, plantation, and lawn throughout the district.

**Folk uses recorded:** The fresh leaves are used to treat body pains. The fresh leaves curry used to increase appetite and digestion.

**Traditional uses:** The whole plant is used for healing fractured bones. The ground leaves are used in treating dizziness, diarrhea and dysentery. The juice from the leaves is applied to open wounds. The plant is used to cure burns and body sores. The crushed leaves are used to treat child with mouth infections.

**Biological Activity:** The plant is acidic, diuretic, antidiarrhoeal, antidyserent, anti-inflammatory, anthelmintic, antipyretic and hepatic.

**Chemical Constituents:** The plant contains glyxylic acid, oxalic acid, vitexin and isovitexin, vitexin-2-o-β-d-glucopyranoside, neutral lipids, glycolipids, vitamin-C, phospholipids, fatty acid, α- tocopherols and β-tocophenols, 2-heptenal 2-pentylfum and transphyto (Prajapati et al, 2003).

51. *Paederia scandens* (Lour.) Merr. (Rubiaceae)

**Local name:** Bhedailota. CDS-116, Kalabari.
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**Description:** It is a perennial climbing plant. Leaves are opposite, margins entire, purple beneath.

**Flowers and fruits:** Flowers are small white in colour, inflorescence in axillary cyme. Fruit are sub-ovoid, slightly compressed glabrous. The whole plant contains with pubescence.

**Occurrence and distribution:** Grow wild in damp and wasteland. It is also cultivated as vegetable and medicinal plant.

**Folk uses recorded:** The whole plant is regarded or a specific for rheumatic disorders. Leaves paste is applied externally as poultice and generally taken in prepared form as food.

**Traditional uses:** The leaves are used in treatment of bacillary dysentery. The of fresh leaves is used in treating urinary lithiasis, dysuria, rheumatism, dyspepsia, gastritis and enteritis.

**Biological Activity:** It is antidyserenteric, anti-inflammatory, antpyretic

**Chemical Constituents:** The plant contains fridean-3-one, β-sitosterol and epifriededelinol. Leaves and stem contain iridoid glycosides-asperuloside, paederoside and scandoside, sitosterol, stigmasterol, campesterol, ursolic acid, palmitic acid and methyl mercaptan (Hussain et al, 1992). The leaves contain an essential oil and alkaloids α-paederine and β-paederine (Prajapati et al, 2003).

52. *Persea bombycina* (King. ex Hook. f) Kost, (Lauraceae)

**Local name:** Chom, CDC-128, Gohpur.

**Description:** Trees, up to 25 m tall; trunk to 40 cm d.b.h. Bark blackish brown or brownish. Branchlets slender, terete, with 3-5 circular scars, young shoots with densely gray-yellow pubescence, becoming glabrate. Terminal buds tomentose.
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Petiole 5-20 mm, sericeous; leaf blade oblong, obovate, or ob lanceolate, (5-)6-15 × 1.5-5.5 cm, thinly leathery, ferruginous appressed sericeous on both surfaces when young, abaxially glaucous-green and minutely pubescent especially along veins and adaxially glabrate when old, midrib abaxially elevated, adaxially concave, lateral veins 7-10 pairs, slightly conspicuous on both surfaces, veinlets inconspicuous. Fl. Mar-Apr, fr. May-Jun.

**Flowers and fruits:** Numerous panicles arising from lower part of young shoots, 4-13 cm; peduncle (2-) 4-8.5 cm, densely grayish sericeous. Flowers white or yellowish. Perianth lobes subequal, oblong, ca. 4 × 1.5 mm, densely minutely gray-white sericeous. Stamens ca. 3 mm, barbate at base; glands of 3rd series shortly stipitate. Staminalodes sagittate. Ovary subglobose. Fruit globose, blackish when ripe.

**Occurrence and distribution:** Found eastern part of the district.

**Folk uses recorded:** It is used to preparer with other plants rheumatic pain plaster. It is used as the primary host plants for the muga (*Antheraea assama*) silk.

**Traditional uses:** The leaves are used to cure hair falling (Laloo *et al.*, 2006).

**Biological Activity:** The leaves and bark are astringent, carminative.

**Chemical Constituents:** It contains flavonoids, tannin and Anthraquinon.

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53. *Phyllanthus emblica* L. (Euphorbiaceae)

**Local name:** Amlaki, CDC-012, Gohpur.

**Description:** A medium sized deciduous tree, 8-18 m in height with thin light grey bark exfoliating in small thin irregular flasks; leaves simple, sub sessile, closely set along with the branches. The pinnate leaves are light green.
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Flowers and fruits: Flowers are greenish yellow, unisexual, males numerous on short slender pedicles, female few, sub sessile, ovary 3-celled, fruits globose, fleshy, pale yellow in colour.

Occurrence and distribution: It is cultivated throughout the district.

Folk uses recorded: The fruit juice is given in eye irritation. The bark extract is given to cure gonorrhoea.

Traditional uses: The bark is used to treat gonorrhoea, jaundice, and diarrhea. The leaves are used in conjunctivitis, inflammation, dyspepsia, diarrhea and dysentery. The fruits are used to treat diabetes, cough, asthma, bronchitis, cephalalgia, peptic ulcer, skin diseases, inflammation, jaundice, diarrhea, dysentery and cardiac disorder.

Biological Activity: The leaves are found anti-inflammatory. The fruits are sour, astringent, bitter, alexeteric, sweet, cooling, anodyne, ophthalmic, carminative, digestive, stomachic, laxative, alterant, alexeteric, aphrodisiac, diruretic, antipyretic and tonic.

Chemical Constituents: The major amino acids like alanine, aspartic acid, glutamic acid, lysine and praline present in fresh fruit. Iron, niacin, chromium and copper present in fruit ash (Prajapati et al, 2003).

54. Polygonum chinense L. (Polygonaceae)

Local name: Modhu Soleng, CDS-088, Dubia.

Description: It is a herb perennial, rhizomes stout. Stems are erect, 70-100 cm tall, ligneous at base, much branched, striate, glabrous or retrorsely hispid. Petiole 1-2 cm, usually auriculate at base, upper leaves subsessile; leaf blade ovate, elliptic, or lanceolate, 4-16 × 1.5-8 cm, both surfaces glabrous or hispid, abaxially sometimes
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pubescent along veins, base truncate or broadly cordate, margin entire, apex shortly acuminate; ocrea tubular, membranous, glabrous, much veined, apex oblique, not ciliate.

**Flowers and fruits:** Inflorescence terminal or axillary, capitate, 3-5 mm, usually several capitula aggregated and panicle-like; peduncle densely glandular hairy; bracts broadly ovate, each 1-3-flowered. Perianth white or pinkish, 5-parted; tepals ovate, accrescent in fruit, becoming blue-black, fleshy. Stamens 8, included. Styles 3, connate to below middle. Achenes included in persistent perianth, black, opaque, broadly ovoid, trigonous.

**Occurrence and distribution:** It is found all area of the district in wild as well as cultivated in homestead garden.

**Folk uses recorded:** The fresh extract of aerial portion is given orally for three days in backache. Leaves are ground and the extract is taken thrice daily to counteract dyspepsia. It is also used in stomach troubles.

**Traditional uses:** The leaves are used for treatment of furunculosis, scalp scabs, cold sore and eczema. Poulties made pounded fresh leaves and their concentrated extract are topically applied. A decoction of dried leaves treated for boils and dysentery. Snake-bite is treated by oral administration of juice of fresh leaves (Prjapati et al, 2003).

**Biological Activity:** Leaves are antibacterial, abscess, alexiteric, antidote, refrigerant, antipyretic, Tonic, Vermifuge and Vulnerary

**Chemical Constituents:** The plant contains rubin, rheum-emodin, oxy-methyl-anthraquinone, anthraquinone, flucosides and myrcyl alcohol (Prjapati et al, 2003).
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55. *Rauvolfia serpentina* (L.) Benth (Apocynaceae)

**Local name:** Sarpagandha, CDC-026, Rajabari.

**Description:** Herb to under-shrub, 0.5 m tall. Stem woody at base. Rootstocks are thick and woody. Bark ashy white, thin, branchlets are hairless. Leaves are 3-4 in whorl, elliptic or oblanceolate, 8-16 x 3-5 cm, base gradually tapering, apex acuminate, margin entire and hairless.

**Flowers and fruits:** Flowers are bisexual, in terminal or auxiliary umbellate cyme, white with pale purple shade. Drupes united in their lower half, stalkless, fleshy, ovoid about 7 mm long.

**Occurrence and distribution:** Rarely found in moist and deciduous forest. Some people also cultivated in their homestead garden.

**Folk uses recorded:** A small amount of decoction of aerial portion is given orally for few days in severe bleeding in menstruation. It is used to preparation of pill for rheumatic pain with some other plants.

**Traditional uses:** Its decoction is given during labour pains to increase uterine contraction. Leaves extract is used for the cure of corneal opacity of eyes.

**Biological Activity:** It is sedative, hypnotic, anthelmintic, high blood pressure reducer, tranquilliser.

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56. *Ricinus communis* L. (Euphorbiaceae)

**Local name:** Era, CDS-109, Gopalpur.

**Description:** Shrub or small tree to 4m with conspicuous ring like scars on the hollow stem. Leaves are alternate, long petiolate with 7-11 lobes and serrated edges, 20-60 cm long.

**Flowers and fruits:** The inflorescence is terminal with a narrow panicle containing unisexual flowers. Fruits are spiny sub-globose schizocarp about 1.5 cm long, splitting into three sections when mature.

**Occurrence and distribution:** Common in disturbed areas and waste places.

**Folk uses recorded:** The infusion of aerial portion is given orally once a day for five days in curing rheumatism. Leaves paste is applied to cure itching. The fresh bark extract is given orally twice a day in empty stomach for three day to curing pain and inflammation in legs.

**Traditional uses:** An infusion of the bark is used to treat skin inflammation and rashes. The dilute extract is taken orally to treat breast tumours and boils

**Biological Activity:** It is purgative, anti-inflammatory.

**Chemical Constituents:** beta-amyrin, ricins, 5-dehydro-avenasterol, beta carotene, tannins, brasicasterol, campesterol, beta-sistosterol, stigmasterol, lupeol, quercetin, casbene, chlorogenic acid, coumarin, elleegic acid, ricinine, n-demethylricinine, ricinus agglustinins and kaempferol (*Prajapati et al*, 2003).

57. *Sesamum orientale* L. (Pedaliaceae)

**Local name:** Til, CDS-115, Majikuchi.

**Description:** This is an erect, pubescent annual up to 1m in height, branching from the base, leaves large, thin, the lower ones lobed, uppermost linear and intermediate ovate and toothed.
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**Flowers and fruits:** Flowers are white, pink with yellow marks in racemes in the leaf axils, fruit quadrangular, oblong, compressed capsule, seeds many black in colour.

**Occurrence and distribution:** It is cultivated throughout the district.

**Folk uses recorded:** It is used to prepare pill with other plants for rheumatic pain. It is used in head-skin infection of child.

**Traditional uses:** The leaves are used to cure dysentery, cholera, ophthalmopathy and dermatopathy. The seeds are useful in haemorrhoids. Ulcer, burns, dermatopathy, migraine and alopecia. The seed oil is used externally to dryness of the skin and leucoderma.

**Biological Activity:** The seeds are sweet, astringent, bitter, acrid, thermogenic, laxative, digestive and tonic. The oil is bitter, astringent, sweet, thermogenic, digestive, anthelmintic and ostipating.

**Chemical Constituents:** Seeds contain thiamine, niacin and protein globulin. The leaves contain a flavonoid glucoside pedalin (Joshi, 2000).

58. *Streblus asper* Lour. (Moraceae)

**Local name:** Soura, CDS-113, Kalabari.

**Description:** It is a small, rigid evergreen tree, hairy scabrid twigs with milky white latex. Leaves are simple, alternate, rhomboid-elliptic, acute, scabrid on both surfaces.

**Flowers and fruits:** Flowers are unisexual, dioecious, maleheads globose, minute, yellowish green, female flowers solitary, very small, fruit one seeded succulent berries, yellow when ripe.
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**Occurrence and distribution:** It is found roadside uncultivated land throughout the district.

**Folk uses recorded:** The bark extract is taken orally in empty stomach in diabetes. Seeds soaked in water overnight and infusion is taken orally in empty stomach in fever. It is also used to prepare medicine with other plant in preparing pill for diabetes.

**Traditional uses:** The roots are used to cure ulcers, sinusitis, inflammation, boils, haemorrhages, bronchitis, desentery, fever and syphilis. The bark is useful in foul ulcer, diarrhea, dysentery, inflammation. The leaves are used to cure in sore heels, chapped hands, adenitis neuralgia.

**Biological Activity:** The roots are astringent, bitter, acrid, thermogenic, anti-inflammatory, haemostatic, anticonvulsant, constipating, antiseptic. The bark is vulnerary, anti-inflammatory, and costippating.

**Chemical Constituents:** It contains cardenolides, cardenolide glycosides, kamaloside, asperoside, pyranoside, streboloside, indroside, lucknoside, cannodimethoside, strophalloside, strophanolloside, glucokamaloside, sarmethoside and β-unsaturated lactone (Prajapati *et al*, 2003).

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59. *Tabernaemontana diversicata* (L.) R.Br. (Apocynaceae)

**Local name:** Kathana Phool, CDS-056, Gohpur.

**Description:** It is a blabrous, evergreen shrub, around 2m in height with silvery grey bark and milky latex; laeves simple, opposite, elliptic or elliptic-lanceolate, smooth, glossy green, acuminate, margins wavy.

**Flowers and fruits:** Flowers white, sweetly fragrant in 1-8 flowered cymes at the bifurcations of the branches. Fruits follicles, ribbed and curved.
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**Occurrence and distribution:** It is found throughout the district, also cultivated as an ornamental plant.

**Folk uses recorded:** Infusion of stem bark is given orally to cure diabetes.

**Traditional uses:** Latex is applied twice daily to prevent cavity formation. The roots are used to cure opacity of the cornea, paralysis, strangury and arthralgia burning sensation. The latex is used to treat wounds.

**Biological Activity:** The roots are acrid, bitter, thermogenic, anodyne, astringent, vermifuge and tonic. The latex is cooling and anti-inflammatory.

**Chemical Constituents:** The plant contains coronaridine, voacristine, tabernaemontanine, and dregamine. Bark of stem, and root contain alkaloids tabernaemontanine abd coronarine (Prajapati et al, 2003).

60. *Terminalia bellerica* (Gaertn.) Roxb. (Combretaceae)

**Local name:** Bhumora, CDC-065, Narayanpur.

**Description:** This is a large deciduous tree, 20-30 m in height with thick brownish grey back having shallow fissures. Leaves are simple, alternate, long petioled, crowded branches, broadly elliptic, margins entire.

**Flowers and fruits:** The flowers are pale greenish yellow in auxiliary spikes with unpleasant odour. Fruits are ovoid grey drupes in very short stalk.

**Occurrence and distribution:** It is widely distributed throughout the district and in deciduous forest.

**Folk uses recorded:** The infusion of fruit is taken in liver problems and in fever.

**Traditional uses:** The mature and dry fruit is used for curing diarrhea and dysentery. The seed oil is used for dyspepsia, skin diseases and leucoderma.
Biological Activity: The bark is mildly diuretic, fruits are astringent, acid, sweet, thermogenic, anti-inflammatory, anodyne, digestive, anthelmintic, expectorant, ophthalmic, antipyretic. The fruit extract reduce high blood pressure.

Chemical Constituents: The fruits contain tannin, β-sitosterol, gallic acid, ellagic acid, ethyl galate, galloyl glucose, chebulagic and glycoside-bellericanin (Prajapati et al, 2003).

61. Terminalia chebula Retz. (Combretaceae)

Local name: Shilikha, CDC-073, Kalabari.

Description: A moderate sized deciduous tree with cylindrical hole and spreading branches. Leaves are ovate, elliptic, and glabrous with a pair of large glands at the top of the petiole.

Flowers and fruits: The fruits are glabrous, shining, ellipsoidal, ovoid drupes, yellow to orange brown in colour.

Occurrence and distribution: It is widely distributed throughout the district and in deciduous forest.

Folk uses recorded: Decoction of fruit is given orally once a day for a week in curing heart problems or weakness.

Traditional uses: The fruits are used in inflammation gastropathy, anorexia, haemorrhoids jaundice, cough, epilepsy, skin diseases and general debility.

Biological Activity: The fruits are astringent, acid, bitter, thermogenic, anodyne, anti-inflammatory, vulnerary, stimochic, laxative, purgative, digestive, anthelmintic and antiseptic.

Chemical Constituents: The flower of this plant contains chebulin and palmitic, stearic, oleic, linoleic, arachidic and behenic acids are found in fruit kernels. The
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fruit contains tannic acid, galic acid, resin, glycoside of anthraquinon derivatives

(Prajapati et al, 2003).

62. *Tinospora cordifolia* (L.) Miers (Menispermaceae)

Local name: Amarlota, CDC-096, Rajabari.

Description: It is a large extensively spreading glabrous, perennial deciduous twiner with succulent stems and papery bark. Leaves are simple, alternate, cordate, entire, and glabrous.

Flowers and Fruits: Flowers are yellow in lax racemes, usually solitary. Fruit are drupes, red when ripe.

Occurrence and distribution: It is found through the district in forest, wild in nature.

Folk uses recorded: The roots are given orally once a day for seven days in diabetes.

Traditional uses: The stem is used to relieve from burning sensation, hyperdipsia, dyspepsia, stomachalgia, intermittent fever, chronic fever, inflammation, gout, cardiac debility, skin diseases, leprosy, anemia, cough, asthma, jaundice and seminal weakness

Biological Activity: The stem is bitter, astringent, sweet, thermogenic, anodyne, antihelminthic, antipyretic, carminative, expectorant, antispasmodic, digestive, appetising, constipating, depurative, rejuvenating and tonic (P). It is also antioxidant, anti-diabetic, anti-inflammatory, anti-arthritis, anti-stress, hepatoprotective, and anti-neoplastic (Desai et al, 2002, Singh et al, 2003).
Chemical Constituents: The plant contains tinosporin, columbin, chasmanthin, palmarin, berberine, tinosporon, tinosporic acid, tinosporol, giloin, giloisin, octacosanol, 18-norclerodane and β-sitosterol (Prajapati et al. 2003).

63. *Vitex negundo* L. (Verbenaceae)

Local name: Pasatia, CDS-110, Kamdewal.

Description: An aromatic small tree with quadrangular branches; leaves opposite, exstipulate, long petioled, all leaflets with petiolules, the middle one longer.

Flowers and fruits: The flowers are bluish purple in pedicels up to 30 cm long. Fruits are globose or ovoid or obvoid, four seeded drupe, when ripening turn in black colour.

Occurrence and distribution: The plants are available throughout area generally in waste land.

Folk uses recorded: Leaves in the form of paste are applied locally in curing scabies. Decoction of root is given orally once a day for seven days in piles.

Traditional uses: The roots are used in curing cephalalgia, otalgia, arthritis, inflammation, dysentery, wounds ulcers, bronchitis, cough, malarial fever, haemorrhoids, leprocy, ophthalmopathy. The leaves are useful in vitiated conditions of vata, cephalalgia, sprins, orchities, gout, rheumatic pain (Das et al. 2004) of inflammation and ulcer. The bark is used odontalgia and ophthalmopathy. The flowers are used for curing diarrhea, cholera, fever and cardiac disorder.

Biological Activity: The plant is bitter, thermogenic, anthelmintic, expectorant, carminative, digestive, anodyne, anti-inflammatory, antiseptic, antipyretic and diuretic (Prajapati et al. 2003). The root is tonic, expectorant, febrifuge and antidote to snake venom (Hussain et al. 1992).

64. Zanthoxylon hamiltonianum Wall. Ex. Hook f. (Rutaceae)

Local name: Tejuri, CDC-043, Majikuchi.

Description: It is a Climbing shrub, prickly. The branches scattering with pale brown bark. Leaves are alternate, imparpinate; leaflets oblong, ovate, subsessile, acuminate, glossy on both surface, glabrous pubescent beneath.

Flowers and Fruits: The inflorescences in auxiliary raceme. Flowers are small white in colour.

Occurrence and Distribution: It is widely distributed throughout the district in wild condition.

Folk Uses Recorded: The infusion of tender shoot is given orally to cure stomachache. Stem bark extract is given orally in curing rheumatism.

Traditional Uses: The fruit is used for treating dyspesis, cough, colic vomiting, diarrhea, toothache, rheumatism. The roots are used for treat fever, paresis. Tropical application of an alcoholic maceration is found effective in toothache.

Biological Activity: The root is antipyretic and anti-inflammatory. The fruit is also anti-inflammatory and antidote (Prajapati et al, 2003).

Chemical Constituents: The plant contains nitidin, flavoneglycoside, linalool, methyl cinnamate (Prajapati et al, 2003).

65. Zingiber purpureum Roscoe, (Zingiberaceae)

Local Name: Moran ada, CDC-082, Kalabari.
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**Description:** It is slender herb arising from a perennial stout root stock. The root stock or rhizome yellow inside with an aromatic with camphoraceous taste. Leafy stem 1.2-1.8 cm high. Leaves are subacute, glabrous above, pubescent beneath, base slightly rounded, sheaths pubescent.

**Flowers and Fruits:** Flowers in dense fusiform oblong sheaths, bracts bright red or greenish red and narrow membranous margins. Calyx membranous runcates, glabrous, split half way down. Corolla segments whitish, lip yellowish white with deeply bifid mid-lobe. Stamens yellowish white, shorter than lip, the appendices of the connective long, flexuous. Style glabrous, stigma obconic, ciliate, capsules subglobose long, membranous.

**Occurrence and Distribution:** It is found in wild condition and somewhere cultivated home garden.

**Folk Uses Recorded:** Infusion of rhizome is given orally in curing paralysis. Infusion of rhizome is also given orally in indigestion.

**Traditional Uses:** The rhizomes are considered useful in diarrhea. It is externally used as anti-inflammatory for sprain and muscular pain, wound healing. Powdered rhizome exhibits broncho-dilating effect in both chronic and acute asthma in children.

**Biological Activity:** The rhizomes are emmenagogue, mild-laxative, antisyneretic, astringent stimulant and carminative. The rhizome extracts showed anti-inflammatory and antioxidant activity (Pullaih, 2000).

**Chemical Constituents:** Rhizome contains phenylbutanoids

Agave americana

Aristolochia roxburghiana

Calotropis procera

Curcuma caesia Roxb

Datura metel

Dracaena cambodiama

Drymaria cordata

Gossypium arboreum

Plate-1a