Chapter 5

ANTI-DIABETES PLANTS OF SOUTHERN ASSAM WITH SPECIAL REFERENCE TO BIOLOGICAL SCREENING

ENUMERATIONS OF ANTI-DIABETES MEDICINAL PLANTS
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Evergreen shrub; branches diffused; leaves opposite, ca 7-20 × 2-8 cm, ovate or elliptic lanceolate, acuminate, entire: flowers White with purple stripes in dense axillary leafy spike; bracts ellipt - ovate; pubescent, acute, calyx campanulate, 5 - lobed, corolla ca 2-3 cm long, 2 - lipped, upper lip notched at tips, throat villous; capsules clavate, 4 - seeded.

Specimen examined: MAGURA, 16-04-06 (02); MANIKBOND, 17-04-06 (08).

Occasionally distributed in the study area.

Fls & Frts.: November - March.

Parts used: Root, leaf, flowers, bark and fruits, the visicine is the active principle obtained from root/bark and also from leaves.

Purpose and mode of use: Leaf extract is made by boiling approximately 500g of green leaves in 2l of water and when the volume become approximately into 1l, then cooled and filtered. The filtrate is taken 10-15ml twice or thrice daily to cure diabetes.
Established Report of Utilization: Expectorant, diuretic, antispasmodic and alterative. It is an important constituent of cough mixtures. The plant is considered efficacious in preliminary diseases. It has antiseptic properties and it is reported that good insecticide can be obtained.

Tribal people and inhabitants use the leaf extract in tonsillitis, influenza, fever, cough, headache, giddiness, body ache and as a diuretic.


Large, tall deciduous tree; bark light brownish. Leaf rachis with a large basal gland; leaflets 4-16 pairs, ca 2.4x0.8-1.5 cm, obliquely oblong, obtuse, appressed pubescent beneath. Flowers pale yellow, sessile in heads in large lax terminal panicles. Clayx small, tubular, teeths acute. Corolla lobes lanceolate, pubescent outside. Pods ca 4-15x1.0-2.5 cm, reddish brown, shortly stalked, 8-12 seeded.

Fls. & Frts.: August-December.

Propagation: By seeds.

Specimen examined: GANANAGAR- 23-03-06(65)

Parts used: Leaf & Bark.
Purpose and mode of use: Crude extract of leaves and barks are used on low dose to cure diabetes.

Established Report of Utilization: Wood used to various construction purposes. Leaf, bark is antidiabetic.


Stout herb, root stock ca 60-100cm high. Leaves large, ca 45-80×20-55cm, broad-ovate, sagittately cordate, and repand. Basel lobes rounded petiole stout ca 60-120cm long. Flowers monoecious. Spathes ca 15-25cm long, greenish yellow, appearing with leaves. Male flowers white. Stamens connate. Female flowers yellow. Fruit in clusters of few seeded red berries.

Fls. & Frts.: January to July.

Specimen examined: CHERAGI, 21-06-06. (71)

Occasionally distributed in the study area.

Parts used: Rhizome.

Purpose and mode of use: Crude extract of rhizome in very low dose is used in the treatment of diabetes.


Evergreen tree. Leaves 3-7 in whorls, ca 7-18 x 2-5 cm oblong – lanceolate or obovate, acute to obtuse, narrowed at base, coriaceous, lateral nerves parallel. Flowers white, in terminal pubescent, umbeliform cymes. Calyx tubular, ca 0.2 cm long, pubescent, lobes oblong. Corolla tubular, ca 0.7 cm long; lobes obovate, villous inside. Follicles ca 10-50 cm, linear, drooping.

Fls. & Frts.: November to May.

Specimen examined: MAGURA, 16-04-06 (03); MANIKBOND, 17-04-06 (16).

Parts used: Whole plant.

Purpose and mode of use: Crude extract of whole plant is used in the treatment of diabetes.

Established Report of Utilization: Stimulaant, carminative, stomachic, bitter tonic, astringent, febrifuge, alternative and antiperiodic, stomach pain and dysentery. The bark is useful in heart disease, asthma, chronic diarrhea, leprosy, dyspepsia. The decoction of leaves is used for beriberi, congestion of liver and ulcer. The milky juice or latex is applied to ulcers, sores, tumors and in rheumatic pain.

Herbs, caespitose, stemless. Leaves rosettes, long, spiny –serrate. Flowers sessile, violet on a stput peduncle terminally borne cone like, very dense, oblong spike, crowned with tuft of leafy bracts with suckers arising from base as also on top of spike; bracts subspinecent, projecting bearing a solitary flower embedded in the axil, uppermost empty, more or less leafy. Sepals 3, petals 3, Stamen 5. Carpels 3, syncarpus, ovary inferior. Fruit formed of coalescence of thickened rachis, spiny toothed bracts, abortive ovaries and adhering parts into the large globose, ovoid or fleshy syncarpium. Seeds few, ovoid or oblong.

Fls. & Frts: March – August.

Specimen examined: CHERAGI, 21-06-06. (42)

Cultivated on slopes of hillocks for edible fruits.

Parts used: Whole plant.

Propagation: By suckers.

Purpose and mode of use: Crude extract of whole plant is used in the treatment of diabetes.

Established Report of Utilization: Diluted root extract is used to cure urinary problem. Leaf stipule extract is used to cure roundworm infection. Fruit juice mixed with sugar or honey used to cure cough.

"Thikhama", "Kairata" (R) "Kalmegh" (B).

Well branched undershrubs. Branches tetraquatrous, glandular hairy, glabrous below, 3-8x1-2 cm, subsessile or the base attenuate. Flowers pedicillate, pubescent. Bract foliceous c 1 cm long. Calyx c3 mm long. Corolla c 5 mm, bilipped, 2+3 lobed, purplish white. Capsules oblong, c 1.2x0.3 cm, glandular, hairy, yellowish brown; retinunacula curved upward.

Fls & Frts.: Throughout the year.

Specimen examined: CHERAGI, 21-06-06. (85)

Grows wild on forest floor. Often cultivated on for medicinal uses.

Parts use: whole plant.

**Purpose and mode of use:** Plants as a whole. Decoction of whole plant is used 2-3 times a day for the treatment of diabetis.

**Established Report of Utilization:**

Terrestrial herb., rhizome erect, broad. Stipe long, swollen at base. Fronds ca 100-200cm long, 2 pinnate., pinnae ca 80cm long, spreading., pinnules shortly stalked, lanceolate, acuminate, serrate towards apex. Sori dark-brown, arranged in two close rows.

**Fls & Frts**: February to November.

**Occurrence**: Rare, in moist places in the hilly portion of Bhuban hill ranges of Cachar district.

**Specimen examined**: GANGANAGAR 23-06-05 (65).

**Parts use**: Leaf & petiole.

**Purpose and mode of use**: Decoction of Leaf & petiole is used 2-3 times a day for the treatment of diabetes.

**Established Report of Utilization**: No established reports have been found.

*New addition to the list of anti-diabetes plants.*
Small tree; branches spreading. Leaves ca 5-12×1.5-2.5cm, oblong-lanceolate, acute. Flowers yellow, ca 2-3cm long, axillary, solitary or few together. Sepals 3. Petals 6, narrowly oblong, fleshy. Staminal filaments short. Carpels subconnate, confluent into an ovoid or globose syncarpous fruit. Fruits tubercled; pulp sweet.

Fls. & Frts.: June – September.

Occasionally, scattered along the study area.

Specimen examined: MAGURA, 16 -04- 06 (62), CHERAGI, 22 – 05 -06 (61).

Parts use: Leaf

Purpose and mode of use: Leaf extract is used in the treatment of diabetes.

Established Report of Utilization: The root extract with goat milk is used to cure dysentery and general weakness. The ripe fruit is used to cure body ache. The leaf and seed dust used in boils, septic etc.


Tall unbranched, annualated palm. Leaves ca 1-2m long, pinnatisect. Flowers monoecious, white, in branched spadix. Nuts ovoid, ca 3.5-5×2.5-3cm, smooth.

Fls. & Frts.: April-June (Usually most part of the year)

Scattered along the study area near the fence on village houses.
Specimen examined: MANIKBOND. 16 - 04 - 06 (81); CHOTOSALGANGA, 18 - 09 - 06 (84).

Parts use: Nuts.

**Purpose and mode of use:** Water obtained after soaking the nuts overnight is used to cure diabetes

**Established Report of Utilization:** Aphordis., useful in urinary disorder, astrin., anthelm., nervine tonic, emmen., in veterinary medicine for tape worm., snake bite.


Evergreen tree. Leaves *ca* 5-18×4-9 cm, elliptic or obovate, coriaceous, cuneat at base, dark green above, stipules large, caduous. Flowers in cylindrical axillary and terminal heads, embraced by leathery caduceus sheath. Perianth 2-lobed. Stigma spathulate in female heads. Fruits oblong , tubercled.

**Fls. & Frts.:** March – August.

Specimen examined:- GANGANAGAR 23-06-05 (68).

**Parts use:** Leaves

**Purpose and mode of use:** Leaves are used as extract and dry powder in the treatment of diabetes.
Established Report of Utilization: the extract of dried rachis is used to cure muscular rheumatism. The leaf extract is used to cure skin disease, ring worm infection etc.


Deciduous Tree; leaves imparinnate, crowded at the end of the branches, leaflets 5 - 15, sub opposite, lanceolate, acuminate, serrate, oblique: flowers White, fragrant, in lax axillary panicles; calyx lobes 5, obtuse or rounded, petals 5, ca 0.6cm long, linear - oblong, obtuse, staminal tube laciniate at the apex, anther sessile, stigma 3- toothed; drupes oblong, ca 2 cm long, 1 - seeded.

Fls & Frts.: March – July. Fruits ripen from May-July.

Specimen examined: MAGURA, 16 -04- 06 (10), CHERAGI, 22 - 05 -06 (31).

Occasionally, scattered along the study area.

Parts used: Leaves and seeds.

Purpose and mode of use: The crude extract of the leaves & seeds is used to cure diabetes.

Established Report of Utilization: decoction of leaves antisept., used in ulcers and eczema; Dry flower - tonic, stomach. The crude extract is applied to boils. Bark-bitter tonic, astrin., antiper.. Leaves and seeds have antidiabetic properties.
Anti-Diabetes Plants of Southern Assam with Special Reference to Biological Screening


Tall deciduous tree, up to 30 m tall, armed with prickles, bark grayish, smooth. Leaves crowded at the ends of branches, digitately 5-7 foliolate, glabrous. Flowers Oblong. Seeds many, enveloped by dense white silky floss. Along streams in deciduous forests, often cultivated. Flowers bright red and orange yellow, large _ca_ 7-8 cm long, solitary or clustered at the ends of branches. Calyx lathery, cup shaped. Petals obovate or oblong. Stamens many, connate below. Fruits oblong – _ovoide_ capsule, 6 valved. Seeds many, white silky hairy.

Flower: February – April, Fruit.: ripen from March to May.

Propagation: By seeds.

Parts used: Flowers and stem bark.

Purpose and mode of use: The crude extract of flowers and stem bark is used in the treatment of diabetes.

Established Report of Utilization: Cotton fibers obtain from woolly seeds and used for stuffing beds and pillows, flowers and stem bark has anti diabetic property.

Herb; rootstock tuberous. Leaves ca 20-50×8-16cm, oblong or elliptic-lanceolate, acuminate. Flowers reddish, in lax terminal racemes; bracts orbicular. Perianth 6, outer 3 sepaloid, free; inner petaloid, connate below. Lip orange spotted red. Stamen inner one fertile with 1 celled anther, adnate to the petaloid margin near apex. Capsules ellipsoid, ca 2 cm long, tipped by persistant calyx.

Fls & Frts.: Most parts of the yaer.

Occasionally, scattered along the study area.

Propagation: By rhizome.

Parts used: Leaf and aerial parts

Purpose and mode of use: Leaf and aerial parts are used as extract to treat diabetes.


Aeromatic herb. Leaves alternate; upper ones often 1-3 and lower ones 5-11 foliolate; leaflets ca 5-12 × 0.2-105 cm, lanceolate, serrate, acuminate, sessile, pubescent; stipules lateral. Flowers white, small. Male flowers in axillary paniced symes; tepals ciliate; stamens exserted. Female flowers axillary, solitary; bracts leafy, glandular, pubescent; tepals absent. Fruits compressed crustaceous nut.

Fls. & Frts.: April to December

Propagation: By seeds.

Specimen examined: MAGURA, 16-04-06 (11), CHERAGI, 22-05-06 (32).

Occasionally, scattered along the study area.

Parts used: Flowers, leaves and resin.

Purpose and mode of use: Flowers, leaves and resin useful in the treatment of diabetes.

Established Report of Utilization: All parts of plant are intoxicating (narcotic), stomachic, anti spasmodic, analgesic, stimulant, aphrodisiac and sedative. Its habit leads to indigestion, body waste, melancholia and impotence. In large doses it produces mental exultation, intoxication, a sense of double consciousness and finally loss of memory, gloominess etc.

A Herbaceous shrub, digitately lobed, orbicular, glaucous beneath, long peteoled, forming a crown, palminerved. Flowers bisexual, greenish-white, subsessile or in long pendant panicles; pepo variable, pyriform, yellow when ripe. Seeds many, brownish black.

Fls & Frts.: Most parts of the year.

Specimam examined: MAGURA, 14 - 04 - 06 (18); TRIPURAPUNJI, 18 - 09 - 06 (75)

Commonly distributed in the study area.

Fls & Frts.: Most parts of the year.

Propagation: By seeds.

Parts used: Seeds.

Purpose and Mode of Use: One teaspoon of dried powder is mixed in hot water and taken orally for 7d to cure diabetes. Fruit juice is taken in empty stomach in an amount of 10-15ml reduces glucose level.

Established Report of Utilization: Milky juice of unripe fruit-used as cosmetic to remove freckles and other blemishes form skin; anthelm., particularly helpful in expulsion of lumbrici; Leaf is used in bone fracture.latex is used in ring worm and other skin disease and dog bite. Latex is also used for tooth and gum ache. The fruit and seeds are useful in bleeding piles and dyspepsia. it has emmenagogue property. The root is abortifacient and diuretic. It checks the irregular bleeding from the uterus. It also used for piles. The root is applied in yaws, abacterial disease on the soles of feet. The
leaves are used in jaundice; gonorrhoea, fever and beri-beri. An infusion of dried leaves is purgative and may cause abortion also used for relief in asthma. Ripe fruit- Stomach., carmine., diur.; Seeds-vermifuge, emmen., used to quench thirst. Dried seed powder taken with hot water during bed time cure round worm or tape worm infection, seeds have antidiabetic property.


Desiduous small tree. Leaflets 4-8 pairs , opposite, ca 7-10×5-7 cm, ovate, oblong- lanceolate , acuminate, cuneate or rounded at base, shining above. Flowers yellow, ca 4 cm long, in axillary drooping racemes. Stamens all fertile. Pods ca 25-60 ×1.8-2.3 cm, cylindric, indehiscent, dark brown when ripe. Seeds flat, ovate.

**Fls & Frts.:** April-January.

Common, along road side and forest margins of the study area.

**Propagation:** By seeds.

**Specimen examined:** TRIPURAPUNJI, 18-09-06 (38).

**Parts used:** Flowers, seeds and stem bark
**Purpose and Mode of Use:** Flowers, seeds and stem bark used as extract and mixed with a little honey to cure diabetes.

**Established Report of Utilization:** Plant used as ornamental purpose, plant has antidiabetic property.


Erect undershrub, leaves glandular at the base; stipules obliquely cordate; leaflets 3-5 pairs, ca 3-7 × 1.6 - 2.5 cm, ovate or elliptic – lanceolate, acuminate; flowers orangr yellow, in short axillary corymbose racemes; pods ca 8 - 12 × 0.5 – 6 cm, compressed, slightly recurved, septate, 20-30 seeded.

**Fls & Frts.:** April – October

**Propagation:** By seeds.

**Specimen Examined:** MANIKBOND, 22-06-06 (52).

Common, along road side of the study area.

**Parts used:** Leaf, seed.

**Purpose and Mode of Use:** Crude extract of leaf and seed is taken 10-15ml two to three times a day reduces blood sugar.

**Established Report of Utilization:** Whole plant-febge., purg., diur., tonic; Leaves, root & seed- purg.; Seeds and leaves – applied externally to trae skin.
diseases, antiper.; Root in snake bite. The dried fruit is powered and mixed with garlic and taken once daily for week to cure stomach and digestive problems.


Undershrub, leaf rhachis with conical basal gland; leaflets 4-8 pairs, opposite, Lanceolate, acute or acuminate, cuneate at base. Flowers yellow, in terminal or axillary corymbose racemes. Pods ca 5-10 × 0.5 cm, slightly curved, transversaly septate.

Fls & Frts.: June – December

**Propagation:** By seeds.

Specimen examined: TRIPURAPUNJI, 18-09-06 (08).

Commonly distributed along the study area.

**Parts used:** Mature seeds and stem bark

**Purpose and Mode of Use:** Mature seeds and stem bark are crushed to yield a crude juice. The crude juice is mixed with water and used to cure diabetes.

**Established Report of Utilization:** Leaves-externally against ringworm; Decoction of leaves is used in acute bronchitia. The leaf is crushed to yield extract which is applied to the affected part of skin disease for 2-3 days.

Foetid herb; leaves rachid with a 2 gland between two lower pair of leaflets, leaflets 3 pairs, opposite, ca 2 - 5 x 1 -2.5 cm, ovate oblong, obtuse or subulate, unequal at the base, pubescent beneath; folwers yellow, in subsessile pairs, in leaf axils, stamens 7 fertile; pods ca 8-11 cm, obliquely septate.

Fls & Frts.: July - November.

Specimen examined: MANIKBOND, 22 - 06 - 06 (08).

Common Along the road side of the study area.

Propagation: By seeds.

Parts use: Seeds.

Purpose and Mode of Use: Seed extract is used to treat diabetes.

Established Report of Utilization: Crude extract of the leaves in water is used as antiseptic. The leaf extract is applied to treat itching.


Undershubs, erect, diffusely branched. Leaves 2-6.5cm, opposite, ovate, oblong or obovate, narrowed at the base to the short petiole, fallen leaves leaving scar on stem. Flowers axillary 1-2, rose pink with a reddish eye, pentamerous; sepals linear; petals forming a tube, salver shaped, lobes 5, twisted; stamens 5, inserted at the middle of the corolla tube; styles connate at stigma; ovaries 2, free, alternating with 2 glands of the disc.

**Fls & Frts.:** Through out the year.

**Propagation:** By seeds.

**Specimen examined:** MANIKBOND, 22 - 06 - 06 (06)

Grows wild in barren places, also cultivated as an ornamental plant.

**Parts used:** Leaves.

**Purpose and Mode of Use:** Leaves crushed to make paste and then by filtration process the juice is extracted the juice is diluted approximately ten times with water and then taken 5-7.5ml two to three times daily to cure diabetes.

**Established Report of Utilization:** Plant is used to cure diabetes. The whole plant is hypoglycemic.

Perennial herbs with long creeping stem, rooting at the nodes. Flowers 3-5 in an umbel, subsessile, each with a pair of ovate sub-amplexicaule bracts. Petals deep red, ovate, acute or obtuse, imbricate. Stamens red. Mericarps indehiscent, laterally compressed, brown, oblong with prominent secondary ridges. Propagation: Rooted stem cuttings and by seed.

**Fls. & Frts.:** November – August.

**Propagation:** By seeds, by the rooted stem cuttings.

**Specimen examined:** MAGURA, 14 - 04 - 06 (07); TRIPURAPUNJI, 18 - 09 - 06 (29).

Commonly distributed in the study area.

**Parts used:** Whole plant.

**Purpose and Mode of Use:** Whole plant extract is useful in the treatment of diabetes.

**Established Report of Utilization:** Alterative, tonic diuretic and local stimulant, sedative plant paste is applied on boils and tumors. Leaf decoction is taken in cough, cold, fever, stomach ache and as an anthelmintic. Also used as cure for diarrhea and dysentery. The plant is used for treatment of Leprosy and skin disease and also to improve memory. The plant is used as an antidote to Cholera and also applied in rheumatism, elephantiasis and hydrocele. The plant is used as a tonic and used in Bronchitis, Asthma, Gastric, Catarrh, Leucorrhoea, Kidney troubles, Urethritis and Dropsy. A decoction of shoot is given for haemorrhoids. The plant is also used in Peptic ulcer and Tumours. In large doses the plant acts as narcotic, producing
cephalagia, vertigo and coma. The plant is considered as aphrodisise and used in venereal disease. The plant showed anti-inflammatory anti-fertility activity in female mice.

*Cicca acida* (Linn) Meer

(EUPHORBIACEAE), “Harboroi/Laboir” (B)

Small, smooth deciduous tree growing to a height of 5-10 meters. Branches are thickened with nodules in the axils of the fallen leaves. Leaves are unequally pinnate, crowded at the ends of the branches, 20-40 cm long. Leaflets are alternate, entire, oblong-ovate, 2-7 cm long. Flowers are small and crowded in fascicles along the racemes. Fruit is fleshy, acid, edible, greenish white, rounded, 1-1.5 cm diameter, angled, with a hard, bony, 6- to 8-grooved or 3- or 4-celled stone, each cell with a single seed.

Fls. & frts: February-April.

Propagation: By seeds.

Specimen Examined: TRIPURAPUNJI, 18-09-06 (42).

Parts used: Leaves.

Purpose and Mode of Use: The aqueous extract of leaf is taken to cure diabetes. Ethanolic extract of leaf has been applied to STZ induced Albino mice and the three parameters namely Cholesterol, Triglycerides and Glucose level have been measured independently and the result shown satisfactory to lower these levels.

Established Report of Utilization: Astringent. Root is purgative. Seed is cathartic. Leaves are diaphoretic, mucilaginous and demulcent. Fruit contains
dextrose 0.33 per cent, levulose 1 percent, and saccharose 18% tannin is reported in the root-bark, with saponin and gallic acid. Decoction of leaves is used externally for urticaria, the fruit given at the same time to eat. Decoction of the bark used for bronchial catarrh. Some believe the roots to be poisonous, but the Malays boil it for steam inhalation in use for coughts. Root infusion used for asthma. Poultice of leaves for lumbago and sciatica. Root used for psoriasis. Decoction of leaves is diaphoretic. Leaves used for gonorrhea. Fruits are taken as liver tonic. Leaves, with pepper, are poulticed for sciatica, lumbago or rheumatism. Leaves taken as demulcent for gonorrhea. Root infusion, in small doses, taken for asthma. Decoction of leaves is used externally for urticaria, the fruit given at the same time to eat. Decoction of the bark used for bronchial catarrh. Some believe the roots to be poisonous, but the Malays boil it for steam inhalation in use for coughts. Root infusion used for asthma. Poultice of leaves for lumbago and sciatica. Root used for psoriasis. Decoction of leaves is diaphoretic. Leaves used for gonorrhea. Fruits are taken as liver tonic. Leaves, with pepper, are poulticed for sciatica, lumbago or rheumatism. Leaves taken as demulcent for gonorrhea. Root infusion, in small doses, taken for asthma. The root is used for foot psoriasis. Juice of the root-bark is used as poison to produce headache, sleepiness, abdominal pains, and sometimes death.

*New addition to the list of anti diabetic plants.

Trees evergreen medium sized. Leaves opposite, oblong-lanceolate, acuminate, 3-nerved at base, aromatic, 8-12 x 4-5 cm; petioles c 1 cm long. Inflorescence panicle, pubescent. Flowers creamy yellowish; perianth silky pubescent; stamens villous. Fruits black, ovoid, on thickened peduncle and enlarged base of perianth.

Fls. & frts: February-April.

Specimen Examined: TRIPURAPUNJI, 18-09-06 (14)

Found under cultivated condition.

Parts used: Stem bark and root.

Purpose and Mode of Use: Stem bark and root extract is useful in the treatment of diabetes.

Established Report of Utilization: Decoction is taken for cough and catarrh. The oil is used as dentifrice and tooth ache. It shows anti-bacterial activity. The leaves are carminative and used in colic, diarrhea and rheumatism, and also used in cough and cold. The leaf powder has hypoglycaemic action. It is useful in diabetes. The dried leaves act as anti-oxidant to oils and fats. The bark is carminative and given for gonorrhoea.

Shrub or small tree. Leaves ca 4.0-8.5×2-4 cm, elliptic or ovate, acute, petiole winged. Flowers white, axillary. Berries ca 5.5-7.0 cm in dia., globose; pulp sweet, yellow.

Fls & Frts: July-December

Occasionally present in the study area.

Propagation: By seed, cutting , budding and grafting .

Specimen examined: MANIKBOND, 22-06-06 (64).

Parts used: Fruit

Purpose and Mode of Use: Green fruits make extract and used to cure diabetes.

Established Report of Utilization: Fruits edibles, uses to scalp for cooling, fruit husk is used to skin to cure lesion.


Shrubs large with glossy green leaves, aromatic; spines delicate, short. Leaves elliptic, ovate-lenciolate, acuminate, petiolar wing narrow; petioles c 0.4 cm. long. Flowers white, regular, bisexual. Sepals 4-5 lobed; Petal 4-5;
Stamens 10. Ovary cells many ovulate. Hesperidium depressed; orange red when ripe.

Fls. & Frts.: July – December.

Propagation: By seed, cutting, budding and grafting.

Specimen Examined: TRIPURAPUNJLI, 18-09-06.(15)

Cultivated for edible fruits.

Parts used: Root and fruits

Purpose and Mode of Use: Crude extracts of root and fruits are used for curing diabetes.

Established Report of Utilization: Plant is anti diabetic, juice is used to cure skin diseases pimples.


Undershrub, softly tomentose, branches 4-angled: Leaves opposite, ca 5-20 × 4-14 cm ovate-cordate, acuminate, dentate, tomentose. Flowers white, tinged with pink terminal subcorymbose panicles; bracts foliaceous, deciduous, pubescent. Calyx ca 0.5 cm long; segments broadly lanceolate, acuminate, hairy. Corolla white, pubescent outside; lobes oblong, obtuse, ca
1 cm long; tube slender, ca 1.2 cm long. Drups globose, within persistant calyx black when mature.

Fls & Frts: March - July.

Common, along road side of the study area.

Specimen Examined: MAGURA, 14 – 40 – 06 (73).

Parts used: Whole plant

Purpose and Mode of Use: Whole plant is used as extract or powdered form to cure diabetes.

Established Report of Utilization: Plant is anti diabetic, root extract is used to cure dysentery.


Large, unarmed palm. Leaves crowded at the top of trunk, ca 2-3 m long, pinnate drooping spikes bearing few female flowers at their base and many male flowers in the upper portion; leaflets ca 1 m long, linear-lanceolate. Spadix interfoliar. Flowers polygamous, monoecious, enclosed in a spathe. Fruit obtusely trigonous drupe, gennish yellow. Nut large, ca 12-18 cm in dia., one seeded with fibrous pericarp.

Fls & Frts: Through out the year.

Propagation: By seeds
Specimen examined: MEHERPUR 14 - 08 - 06 (17); TRIPURAPUNJLI, 18 - 09 - 06 (29). Commonly distributed in the study area.

Parts used: Fruit and leaves.

Purpose and Mode of Use: Fruit and leaves useful for the treatment of diabetes.

Established Report of Utilization: Kernel of fruit edible and oil is extracted which is used for cooking and other purposes; fibrous for making ropes, mats, brushes etc.; leaves used for thatching and broom making.


Milled sized deciduous tree; branches drooping. Leaves alternate, ca 6-18 x 3.5-9.0 cm, elliptic or ovate, apex acute to obtuse, glabrescent or slightly pubescent. Flowers white, males and bisexual in dichotomous, lax, terminal and axillary pedunculate simose panicles. Calyx pubescent inside, campanulate. Corolla lobes narrow oblong recurved. Drupes globose, yellowish purple when ripe, supported by the saucer shaped accrescent calyx; juice sticky.

Fls. & frts.: August to January.
Specimen Examined: Ganganagar. 25-06-06, (36). Common along the study area specially in the forest edges and Bhuban hills.

Parts used: Leaves and fruits.

Purpose and Mode of Use: Leaves and fruits extract is used to treat diabetes.

Established Report of Utilization: Fruit juice is used as gum.


(ZINGIBERACEAE) “Karma” (R.) “Haridra” (S.) “Haldi” (H.) and (B.)

Herbs, rhizomatous, rizhom much brached, yellow inside. Leaves large, 25-55x8-15 cm; oblong, acuminate, narrowed at the base, glabrous; petioles shoter than blade. Spikes c 10 cm long. Flowers purplish white, epigynous, equaling the bracts; corolla tube c 2.5 mm long, lobes white; staminodes creamy with yellow median band; lip yellow.

Fls. & Frts.: July - September.

Propagation: By Rhizome.

Specimen Examined: MAGURA, 14 - 40 - 06 (19)

Cultivated for its rhizome in kitchen garden and hill slopes and abandoned jhum land.

Parts used: Rhizome.

Purpose and Mode of Use: Fresh rhizome is taken with molasses in empty stomach to cure diabetes.
**Established Report of Utilization:** Aromatic, stimulant, tonic, curminative and anthelmintic. Plant is used in the treatment of diabetes.


Perennial prostrate or creeping herb; rooting at nodes. Leaves linear-lanceolate; sheath compressed; ligul ciliate. Inflorescence a slender 4-5 digitate spike. Spikelets ca 0.2cm long compressed, sessile, one flowered. Glumes lanceolate. Lemma 3-nerved. Caryopsis oblong.

*Fls. & Frts.:* August to October.

**Propagation:** By stem cuttings.

**Specimen examined:** AMRAGHAT (GANANAGAR) 14 – 08 – 06 (67).

**Parts used:** Whole plant.

**Purpose and Mode of Use:** The whole plant is used as extract to treatment of diabetes.

**Established Report of Utilization:** Used as fodder, root is used to treat dental ache.


*Fls. & Frts.:* August to November.

Commonly present in the marshy places of the study area.

**Propagation:** By stem cuttings

**Specimen examined:** MAGURA 16-04-06 (63), MANIKBOND, 16-04-06 (68).

**Parts used:** Whole plant.

**Purpose and Mode of Use:** Whole plant is used in the extract or powdered form in the treatment of diabetes.

**Established Report of Utilization:** No established report have been found,

*New addition to the list of anti diabetic plants.


Twining herb; stem winged. Leaves alternate, ca 5-12 × 4.0-9.5cm, broadly ovate, 5-nerved acuminate, cordate at base, petioles ca 5-10cm long; flowers white, in axillary spikes; capsules broadly obcordate.

*Fls. & Frts.:* July – December
Occurrence: Occassionally distributed along the study area, rarely cultivated in home garden

Propagation: By underground stem cuttings

Specimen examined: MAGURA, 14 - 04 - 06 (67); TRIPURAPUNJI, 18 - 09 - 06 (82).

Parts used: Rhizome.

Purpose and Mode of Use: Rhizome extract is used to treat diabetes.

Established Report of Utilization: Tubers are used as vegetable, plants used as antidiabetic.


Large twining herb; bulbils axillary tubercled; Leaves simple, alternate, *ca* 4-17 × 2.8-15 cm, broadly ovate-cordate, acuminate; petioles *ca* 3-10 cm long; Male flowers in pendulous, axillary panicled spikes; Female flowers 3-4 together in axillary spikes; Capsules quadrately oblong.

Fls. & Frts.: July – December.

Occurrence: Occassionally distributed along the study area,

Propagation: By underground stem cuttings.

Specimen examined: AMRAGHAT (GANANAGAR) 14 - 08 - 06 (69).

Parts used: Leaves and twigs.
Purpose and Mode of Use: Leaves and twigs are used as extract to cure diabetes.


Procumbent hairy herb; leaves opposite, ca 1-2.5 x 0.8 - 1.5cm, elliptic or ovate oblong, subobtuse, oblique, serrulate, hairy; cyathis axillary and terminal in capitate cymes, involucres campanulate, lobes 5, hairy; capsules depressed globose, 3-lobed, pubescent.

Fls. & Frts.: Most part of the year.

Propagation: By seeds and stem cuttings.

Specimen examined: MAGURA 16-04-06 (13), MANIKBOND, 16-04-06 (27), CHERAGI, 21-06-06 (45).

Common, in grassland, forest floor and almost all part of the study area.

Parts used: Whole plant.

Purpose and Mode of Use: Whole plant useful for the treatment of diabetes.

Established Report of Utilization: Plant-used disease of children in worms, bowels and cough; Juice of the plant in dysentery and colic. Leaf extract along with seed powder of _Piper nigram_, used to cure asthmatic trouble, plant is antidiabetic.


“Bar, Barged Bhor” (H), “Vata, Bahupada” (S)

Evergreen tree; branches separating; aerial roots forming prop roots. Leaves alternate, ca 10.0-18.5×6-12cm, elliptic to ovate, obtuse, rounded at base, coriaceous. Receptacles globose, ca 1.5cm in diameter., axillary, sessile, paired, red when ripe; basal bracts 3. Tepals, lanceolate.

**Fls. & Frts:** April to November.

Commonly occurred in the road side of the study area.

**Propagation:** By seeds and stem cuttings.

**Specimen Examined:** MANIKBOND 23-06-05 (72)

**Parts used:** Stem bark and sap.

**Purpose and Mode of Use:** Stem bark extract and sap is taken in low dose to treat diabetes.

**Established Report of Utilization:** Bark-tonic, astrin., used in dynst., diar., diabetes; seeds- cooling and tonic; Leaves- applied to poultice to abscesses; Root fibre-in gonor.

Trees medium sized, branches fistular. Leaves oblong-elliptic, 8-12 x 4-6 cm; lateral nerves 6-10; petioles 1.5-2.0 long, stipules lanceolate. Hypanthodia solitary, axillary, 2cm across, shortly peduncled, yellow when ripe.

Hypanthodia: March-August.

Propagation: By seeds and stem cuttings.

Specimen examined: CHERAGI, 21-06-06. (36).

Parts used: Hypanthodia.

Purpose and Mode of Use: Aerial parts useful in the treatment of diabetes. Root exudates use to collect by cutting a root tip for overnight. The exudates then mix with water at a ratio of 1:10 and then taken twice or thrice daily to cure diabetes.


Large deciduous tree, branches pale or reddish brown with a few or no aerial roots, bark smooth, grayish white, branchlets white pilose. Leaves alternate, ca 8-18 x 3-6 cm, ovate-oblong or elliptic-lanceolate, glabrous, acut, rounded or acute at base, entire stipulate. Receptacles ca 2-3 cm in diameter, subglobose or pyriform, stalked, clustered on trunk or leafless branches. Male flowers in 2-3 rings; stamens 2.

Fl. & Fr.: Throughout the year.

Propagation: By seeds and stem cuttings.

Parts used: Stem bark and fruit.

Purpose and Mode of Use: Crude extract of stem bark and fruit used for the treatment of diabetes.

Established Report of Utilization: Bark-tonic, astrin., used in dyinst., diar., diabetes; seeds- cooling and tonic; Leaves- applied to poultice to abscesses.


Deciduous Tree; branches spreading. Leaves alternate, ca 8-17 x 6-9 em, broadly ovate, coriaceous, apex acuminate to a long tail, cordate to round at base, 3-nerved from base; petioles ca 4-9 em long. Receptacles ca 1 cm in dia.,
subglobose, axillary, sessile, paired, dark purple when ripe; basal bracts 3, broad. Male tepals 2, ovate; stamens 1. Tepals 3-4 in female and gall flowers.

Fls. & Frts.: April - September.

Specimen examined: TRIPURAPUNJI, 18-09-06 (86).

Rarely distributed in the study area.

Propagation: By seeds.

Parts used: Root bark and root.

Purpose and Mode of Use: Crude extract of root bark and root is used for the treatment of diabetes.

Established Report of Utilization: Bark-astrin., used in Gonor.; fruit-laxt.; seed-cooling, alter.; leaves and young shoots-purg.; infusion of bark given internally for scabies.


Climbing herb; roots tuberous. Leaves alternate, _ca_ 7-15×2.0-3.5 cm, linear to ovate-lanceolate, sessile, acuminate into a long spirally twisted tendril, rounded or cordate at base. Flowers orange red. Large, solitary, axillary on a long pedicel. Perianth segments 6, _ca_ 6-8 cm long, petaloid. Stamens _ca_ 5-6 cm long, spreading. Capsules linear-oblong.

Fls. & Frts.: August - September.
Commonly occurred in the hill slopes of the study area.

**Propagation:** Through seeds collected during October and through tubers.

**Specimen Examined:** GANGANAGAR (AMRAGHAT). (22-05-06)(48).

**Parts used:** Whole plant.

**Purpose and Mode of Use:** Whole plant is used in the extract or powdered form in the treatment of diabetes.

**Established Report of Utilization:** Plants used as ornamental purpose, anti-diabetic.


Deciduous tree; leaves ca 5.8 – 18 x 4 – 10 cm. Ovate, acute or acuminate, entire, cuneate at the base, long petiolate with two basal glands, flower yellow, in auxiliary or terminal panicles, clyx campanulate, 5-toothed, corolla ca 3cm, yellow, campanulate, pubercent outside, 2 – lipped, drupes obvoid – pyriform ca 1.5 – 2 cm in diameter, orange yellow when ripe.

**Fls. & Frts.:** March – June.

**Specimen examined:** CHERAGI, 21-04-06 (17).

Distributed in elevated slopes of the study area.
Parts used: Leaf, Fruit & Stem.

*Purpose and Mode of Use:* Crude extract of leaf, Fruit & Stem useful in the treatment of diabetes.

*Established Report of Utilization:* No established report have been found.


Scabrous herb. Leaves usually lower ones opposite; upper ones alternate or subopposite, ca 3-10×0.8-4.0 cm, ovate or ovate-oblong, acute or subacute, serrate or undulate, sparsely hairy. Flowers whitish blue, sessile in extra axillary spike like long scorpoid cymes. Calyx lobes linear, ca 0.2 cm long, hairy. Corolla funnel shaped, ca 0.5 cm long; tube hairy outside. Drupes deeply 2-lobed, ovoid, nutlets compressed, 4-ribbed.

*Fls. & Frts.:* April-August.

Commonly occurred in the roadside of the study area.

*Propagation:* By seeds.

*Specimen examined:* GANGANAGAR (AMRAGHAT). (22-05-06)(79).

*Parts used:* Aerial parts.

*Purpose and Mode of Use:* The aerial parts are used in the form of water extract form in a low dose to treat diabetes.

*Established Report of Utilization:* No established report have been found.


Large deciduous shrub. Leaves opposite, ca 7.5-2.5×9-8 cm, ovate to elliptic-oblone, acuminate entire rounded or tapering at base; throat glabrous; lobes ca 1.2 cm long, oblong; tube pubescent. Follicle two. Slender, ca 20 cm long, curved; coma brown.

Fls. & Frts.: July-December.

Commonly occurred in the hilly regions of the study area.

Propagation: By seeds.

Specimen examined: GANGANAGAR (AMRAGHAT).(22-05-06)(89).

Parts used: Bark and fruit.

Purpose and Mode of Use: Crude bark and fruit extract are used in the treatment of diabetes.

Established Report of Utilization: Bark extract is taken in dysentery.

Hydrolea zeylanica (Linn.) Vahl, Symbo. Bot. 2:46. 1791; Clarke in Hook. f., FBI., 4:133. 1883; Deb, Fl. Tripura 2:310. 1983; Chauhan et al. in Hajra, Fl.

Erect or procumbent herb; rooting at lower nodes; younger parts glandular hairy. Leaves ca 1.0-5.5×0.4-0.8 cm, linear-lanceolate, acute, membranous. Flowers blue, in short racemes or cymes. Calyx ca 0.4 cm long, glandular. Corolla ca 0.6-0.8 cm long; lobes ovate. Capsule ovoid-oblong, enclosed within persistent calyx.

Fls. & Frts.: November-March.

The specimen is commonly occurred in the muddy and marshy places of the study area.

Specimen Examined: CHERAGL, 21-04-06 (77).

Parts used: Leaf and twigs.

Purpose and Mode of Use: Leaf and twigs are used in the treatment of diabetes.

Established Report of Utilization: No established report have been found.

*New addition to the list of anti diabetic plants.


Perennial grass, variable in size. Culms ca 0.3-2.0 m long; rootstocks hard, creeping, stoloniferous. Leaves ca 0.2-1.5 m long, linear-lanceolate,

Fls. & Frts.: March-May.

Commonly distributed in the plain lands of the study area.

Specimen examined: GANGANAGAR (AMRAGHAT). (22-05-06)(74).

Parts used: Root,

Purpose and Mode of use: Root extract is taken in low doses for over twenty days in the treatment of diabetes.


“Kalmisak” (B).

Aquatic trailing herb; rooting at nodes; stem hollow. Leaves ca 4-10 × 1.0-3.5 cm, usually hastate, ovate-oblong, acute to acuminate. Flowers pale purple, ca 6 cm long, solitary or in few flowered peduncled cymes. Sepals ca 0.6 cm long, ovate-oblong. Corolla ca 4-5 cm long. Capsules ovoid, glabrous.

Fls. & Frts.: August - February.
The specimen is commonly occurred in the watery and marshy places of the study area.

**Specimen examined:** GANGANAGAR (AMRAGHAT).(22-05-06)(77).

**Parts used:** Leaf and twigs.

**Purpose and Mode of use:** Crude extract of leaf and twigs are used in the treatment of diabetes.

**Established Report of Utilization:** No established reports have been found.

*New addition to the list of anti diabetic plants.


"Lalbherenda" (B), "Nikumba" (S), "Verenda, Bherenda" (H).

Shrub with watery latex. Leaves ca 5-15×5-12cm, broadly ovate, slightly 3-5 lobed, acute, cordate at base, long petiolate. Flowers yellow, in panicled cymes. Male sepals ca 0.4cm long, connate basally, ovate; petals ca 0.6cm long, yellow, Elliptic-ovate. Stamens 10, 2 seriate; filaments ca 0.3cm long. Female sepals and petals as in male. Stigma 2 lobed. Disk Deeply 5 lobed. Capsules ca 3cm in dia., subglobose faintly lobed.

**Fls. & Frts.:** May- November.

Commonly occurred in the roadside of the study area.

**Propagation:** By cuttings and seeds.

**Specimen examined:** GANGANAGAR (AMRAGHAT).(22-05-06)(75).

**Parts used:** Leaf and twigs.
Purpose and Mode of use: Crude extract of leaf and twigs are used in the treatment of diabetes.

Established Report of Utilization: Twigs used for tooth brushing to cure toothache, and watery latex used in skin disease.


Herbs perennial, erect, attaining a height of c 1.5 m. Steam hard, swollen at nodes. Leaves simple, opposite, petiolate, oblong – elliptic, 8-10 x 4-6 cm, succulent, petioles semi amplexicaulous. Inflorescence paniculate cymes. Flowers pale brownish yellow; calyx purplish green 2.0 x 3.0 cm long; corolla globose with basal portion octagonal, green, constricted in the middle. Fruits enclosed in the persistent, papery calyx and corolla.

Fls. & Frts.: January-October.

Specimen examined: CHERAGI, 26-03-06. (31).

Common in the study sites in dry areas.

Parts used: Whole plant.
Purpose and Mode of use: Leaf paste is applied in headache. Also used in boils, soars, wounds, gastric complication, insect bite, kidney stones. Crude extract of whole plant is useful for the treatment of diabetes.


_Mangifera indica_ Linn., Sp. Pl. 200, 1753; Roxb.,Fl. Ind. 2: 641, 1832; Hook f. Fl. Brit. Ind. 2: 13, 1876; Kanjilal et al., Mat. Fl. Arunachal Prad. 1: 339, 1996, (ANACARDIACEAE), "Am" (C, B & H). Ass; " Am, Amba; Ghariam" (A); "Am" (B); "Aam, Amra, Amba" (H), "Amrah, chutah" (S).

Evergreen trees; branches spreading; leaves ca 9 - 25 x 3 - 12 cm, oblong lanceolate, acuminate or or acute, coriaceous, margins undulate; flowers creamy, in terminal panicles; bracts elliptic, concave, sepals 5, oblong, concave, petals 5, imbricate, stamens 1 fertile; drupes ca 6-7 cm in dia., ovoid.

Fls. & Frts.: March - June.

Specimen examined: CHERAGI, 21-06-06, (46).

Commonly distributed along the study area.

Propagation: By seeds and grafting.

Parts Used: Leaf.

Purpose and Mode of use: The tender leaves of the mango tree are considered useful in diabetes. An infusion is prepared by soaking 15 gm of fresh leaves in 250 ml of water overnight, and squeezing them well in the water in the
morning. This filtrate should be taken every morning to control early diabetes. As an alternative the leaves should be dried in the shade, powdered and preserved for use when necessary. Half tea spoon of this powdered should be taken twice a day.

_Established Report of Utilization:_ Paste mixed with water and is taken for stomach and fever. Rind of unripe fruit grounded with menthe and a little honey is given in bleeding dysentery. Rind of unripe fruit mixed with curd is regarded a remedy against cholera. In cases of asthma, diarrhea, chronic dysentery, heamatisis, menorrhagia, leucorrhea, bleeding piles, round worm etc. Powdered seed kernel is administered in doses of 20-30 grains. Tender leaves are dried and made into powder are in useful in diabetes. Ashes of the leaves are good remedy for virus, burns and scalds. Gum resin from the bark mixed with limejuice is applied in scabies. Bark is anti-fertility. Gum is useful in toothache. Whole plant stem and leaf powdered together is good for ulcerated tounge. Leaves-used against scorpion sting., fruit-diurr., laxt., astrin., useful in haemorrhage from uterus, lungs or intestine; unripe fruit-ophthalmic and eruptions; seeds-used in asthma; bark astrin., used in haemor., in diar., anthelm., nasal bleeding.

(MIMOSACEAE) "Choitaymora" (C&B). "Lajjalu, Namaskari" (S) "Sensitive plant" (E).

Spreading, prickly undershrub, pinnae 4 digitally arranged, sensitive, pinnules 10 to 16 pairs, ca 0.5 x 0.3 cm, obliquely narrow, oblong, stipules ca 0.4-0.8 cm long, linear, lanceolate, acuminate, flowers pinkish head, in axillary penduncled, globular heads, stamens 4 pods ca 1.2-2 cm long, prickly 3-4 joined.

Fls. & Frts.: July-December.

Specimen examined: TRIPURAPUNJI, 18-09-06 (26).

Commonly distributed in the study area.

Propagation: By seeds.

Parts used: Whole plant

*Purpose and Mode of use:* Whole plant is useful in the treatment of diabetes. Mixture of leaf powders of *M. pudica* and *Gymnma sylvestre* reduce blood glucose level.

*Established Report of Utilization:* alterative, carminative, Root is aphrodisiac, juice is antiseptic, alterative and blood purifier. Decoction of leaf is used as a cure for diarrhea, skin diseases, for dissolving kidney and gall bladder stones. The leaf past is applied on boils. Decoction of root-useful in gravellish complaints; leaves and roots-used in piles and fistula; leaves-rubbed into apaste applied to hydricyle; leaves and stem-scorpion sting bite.

Climbers with simple tendrils profusely branched. Leaves orbicular, 5 lobed. Flowers solitary unisexuals, monoecious, yellow. Male flowers bracteate, on long peduncle; calyx campanulate, 5 lobed; corolla 5 partite, nearly to the base; stamens 3. Female flowers epigynous, with a bract near base; calyx and corolla same as in male flower; ovary fusiform, stigma 3. Fruits pointed at both ends; many ribbed covered with triangular tubercles; seeds sculptured on surface.

Fls & Frts: December- March.

Propagation: By seeds.

Specimen examined: TRIPURAPUNJI, 18-09-06. (33).

Cultivated in Jhum fields mainly for edible fruits.

Parts used: Leaves.

Purpose and Mode of use: Leaves extract is mixed with water at a ratio of 1:5 and taken in the empty stomach at a dose of 10-15ml two to three times a day for over twenty days to cure diabetes.

Established Report of Utilization: Leaf extract with pure ghee used to cure rheumatism; leaf extract is used to cure small pox, allergy, headache etc.

Herbs large, rhizomatous, steboniferous often-arborescent 2-4 m high, monocarpic; pseudostem composed of convolute leaf sheaths. Leaves very large, spirally arranged forming a compact crown at the top oblong, bright green above, glaucous beneath waxy, petiolate above the sheaths; apex cirrhose, lateral nerves parallel, mid nerve strong, raised beneath, channalled above. Inflorescence from the centre of pseudostem developed directly from rhizome; peduncles hard, bearing condensed spikes, pendant. Flowers enclosed in spatheceous bract, bracts reddish, flowers cream yellow, epigynous. Sepals 3 adnate to 2petals split on one side, third petal free concave, apiculate, stamens 5; stigma capitate. Barries oblong tapering both ends, yellow when ripe.

**Fls & Frts:** Once in a year.

**Propagation:** By underground stem cutting.

**Specimen examined:** TRIPURAPUNJI, 18-09-06. (42).

Cultivated in the study area for its edible fruits.

**Parts used:** Flower and fruit.

**Purpose and Mode of use:** Banana flower is eaten as vegetables and medicines for diabetes. Banana fruit is used in diabetes.
Established Report of Utilization: Rich source of iron, used to cure anemia, used by lactating mother after child birth.


Shrub; braches 4 angled. Leaves ca 5-15 × 2.5-7.5 cm ovate, acuminate, entire or dentate, scabrous. Flowers white, fragrant, in trichotomous cymes, bracteate. Calyx 5 loved. Corolla salver shaped; loves 5-7; tube ca 1 cm long. Capsules flat, suborbicular, 1-seeded. Fls. & Frts.: Sept to January.

Fls & Frts: September – January.

Propagation: By seeds and stem cuttings.

Specimen Examined: GANGANAGAR (AMRAGHAT). (22-05-06)(89).

Commonly distributed in the study area and cultivated in the village houses for its flowers.

Parts used: Leaf

Purpose and Mode of use: Leaf extract mixed with water at a ratio of 1:4 and consumed two to thrice daily at a dose of 10-15 ml to cure diabetes.

Established Report of Utilization: Cholagogue, anthemintic and laxative. Powdered seeds are employed as paste to cure scurvy and affection of scalp.

Annual or perennial herbs, branchlets creeping, rooting at nodes. Leaves digitately 3-foliolate, leaflets obcordate. Petioles ca 3-7cm long, pubescent. Flowers yellow, sub umbellate, axillary, Sepals ca 0.4cm long, lanceolate. Petals ca 0.8cm long, oblanceolate, notched at apex. Capsules sub cylindrical, ca 1cm long, pubescent, oblong, beaked, seeds brown.

Fl. & Frts.: July-December.

Propagation: By seeds and stem cuttings.

Specimen Examined: GANGANAGAR (AMRAGHAT).(22-05-06)(92).

Common in moist localities and shade part of the study area.

Parts used: Leaf

Purpose and Mode of use: Crude extract of leaves and stem used in the treatment of diabetes.

Established Report of Utilization: Leaves have been considered cooling, refrigerant and antiscorbutic, astringent, appetizing, useful in fevers and billourness. Whole plant is eaten raw or cooled to cure dysentery. Leaf juice is taken with honey to cure chronic cough and also as a cure for stomach ache. Paste is applied as antidote for snake bite. Sorrel should not be eaten by gouty persons. Decoction taken in the stomach trouble.

2:122. t.108. 1790; Kanjilal et al., Fl. Assam 4:159. 1940.


Deciduous tree; bark grayish. Leaves ca 0.6-1.2 x 2.3-3.3cm, oblong, obtuse to subacute, obliquely subcordate at base; stipules ca 0.1cm long, ovate. Flowers greenish yellow, in axillary clusters. Sepals 6, ca 0.1 cm long oblong. Stamens 3, connate. Styles basally. Drupes ca 2cm in diameter, globose, seeds 3-angled.

Fls. & Frts.: December – April.

Propagation: By seeds

Specimen Examined: FAKIRTILLA, 23-06-06,(93).

Commonly occurred in the study area

Parts used: Fruits.

Purpose and Mode of use: Fruits useful in the treatment of diabetes. Indian gooseberry, with its high vitamin C content, is considered valuable in diabetes. A tablespoon of its juice is mixed with a cup of bitter gourd juice taken daily for two months, will stimulate the islets of Langerhans, that is, the isolated group of cells that secrete the hormone insulin in the pancreas. The mixture reduces the blood sugar in diabetes.

Established Report of Utilization: Fruits used in indigestion, root extract is taken in asthmatic troubles.
*New addition to the list of anti diabetic plants.


Small to medium sized evergreen tree. Leaves ca 2.0-6.5×1.5-3 cm. elliptic-obovate or rhomboid, acute, cuneate at base, rough, serrate, shortly petuolate; stipules linear-lanceolate. Flowers unisexual. Male flowers pale yellow, in globose heads; stamens 4. Female flowers solitary. Tepals 4, enlarged in fruits. Drupes ca 0.6 cm in dia., 1 seeded, covered by the enlarged perianth.

**Fls. & Frts.** : February to July

**Propagation:** By seeds and stem cuttings.

**Specimen examined:** FAKIRTILLA, 23-06-06,(83).The specimen is commonly occurred in the study area.

**Parts used:** Bark.

**Purpose and Mode of use:** The aqueous extract of bark is taken to cure diabetes. Ethanol extract of bark has been applied to STZ induced Albino mice and the three parameters namely Cholesterol, Triglycerides and Glucose level have been measured independently and the result shown satisfactory to lower these levels.

**Established Report of Utilization:** No established reports have been found.

Trees large, evergreen, bark grayish black. Leaves elliptic oblong or ovate suborbuse, glossy green 6-12 x 3-6 cm, petioles grooved, 1.0-2.0 cm long. Cymes panicled, lateral, developed from leafless nodes. Flowers creamy, c 1 across; calyx turbinate, obscurely loved; corolla calyptrate. Berries black, inside purple-violet; seeds solitary.

Fls. & Frts.: May-July.

Propagation: By seeds and stem cuttings

Specimen examined: TRIPURAPUNJI, 18-09-06. (43).

Grows wild also cultivated for edible fruits as well as for timbers.

Parts used: Bark Fruits and Seeds.

Purpose and Mode of use: Bark and Fruits. The seeds are hypoglycemic. Jambul fruit is regarded in traditional medicine as a specific against diabetes because of its effect on the pancreas. The fruit as such, the seeds and fruit juice are all useful in the treatment of this disease. The seeds contain a glusoside ‘jamboline’ which is believed to have the power to check the pathological conversion of starch into sugar in cases of increased production of glucose. The seeds should be dried and powered. One teaspoon of this powder should
be mixed in one cup of milk or water or half a cup of curd, and taken twice daily.

Established Report of Utilization: Bark-astrin., used in the preparation of astrin. Decoction gargles and washes, fresh juice given with goatmilk in the diarrhoea of children; leaves – dysentery; fruit-useful astrin in bilious diar.

Terminalia chebula Retz. Obs. Bot. 5:31, 1789; Hook.f., FBI 2:446, 1878; Kanjilal et al., FA 2:244, 1938; Deb, FTS 1:385, 1981. (COMBRETACEAE) “Baukhla” (R); “Harir” (H); “Haritaki” (S) & (B). Sanskrit: “Haritaki, Harra, Harada, Abhaya” (S), “Hilikha” (As); “Haritaki” (B); “Har, Harara, Harra” (H).

Trees medium sized; deciduous; bark grayish; branches often pendent. Leaves 6-14x 4-6 cm, alternate or sub opposite, glabrous, elliptic or ovate-oblong, shortly acuminate at the apex; petioles 2-6 cm long with two or more glands at the top. Spikes terminal or form upper axiles on new shoot, often panicle or fascicle. Flowers minute, rusty pubescent when young, bisexual with obnoxious smell; calyx cup shaped limbs expanding, glabrescent outside, villous within. Drupes 3-5 cm long, ellipsoid or obvoid, yellowish green when ripe, 5 angled, bitter.


Propagation: By seeds

Specimen examined: TRIPURAPUNJI, 18-09-06. (97). Rarely distributed in the study area.

Parts used: Seeds.
**Purpose and Mode of use:** Powder of the seeds is used at a dose of 1-2g with lukewarm water two to three times a day for over twenty days reduces the blood sugar.

**Established Report of Utilization:** Fruits edible and powder used as purgative; timber used for miscellaneous works.


A large deciduous, woody climber with succulent stem, peaked with lenticles, bark corky; young shoots glabrous; leaves 6 - 12 x 4 - 7 cm, ovate or roundish, 7-9 nerved; petioles slightly shorter than leaves; flowers minute greenish yellow, glabrous, axillary and terminal raceme or racemose penicle, male flower clustered and female flower solitary; drupes ovoid, glossy, succulent, red; seeds curved.

**Fls. & Frts:** February - June.

**Specimen examined:** CHERAGI, 21-06-06, (56)

Rarely distributed in the study area.

**Parts Used:** Leaf and bark.

**Purpose and Mode of use:** Dried powder of leaf or whole plant of about 2-3gm taken three times a day for over twenty days keeps glucose level normal

**Established Report of Utilization:** Juice is given in diarrhea, cough, cold, body ache piles, fever, anti-periodic, aphrodisia, asthma, bone fracture,
general tonic and is blood purifier. Stem is considered alternative, antipyretic, aphrodisiac, bitter, diuretic, febrifuge, stomachic and tonic. It is also useful in diabetes, enteric. Stem used in the treatment of bone fracture.
Plant Plate 1: Some Antidiabetis plants of Southern Assam. (A). Streblus asper; (B). Ficus religiosa; (C). Ficus racemosa; (D). Cicca acida; (E). Fruits of Cicca acida
Plant Plate 2: (A). Catheranthus roseus L.; (B). Aloe vera; (C). Musa paradisica; (D). Allium sativum; (E). Momordica charantia; (F). Azadirachta indica; G. Kalanchoe pinnata