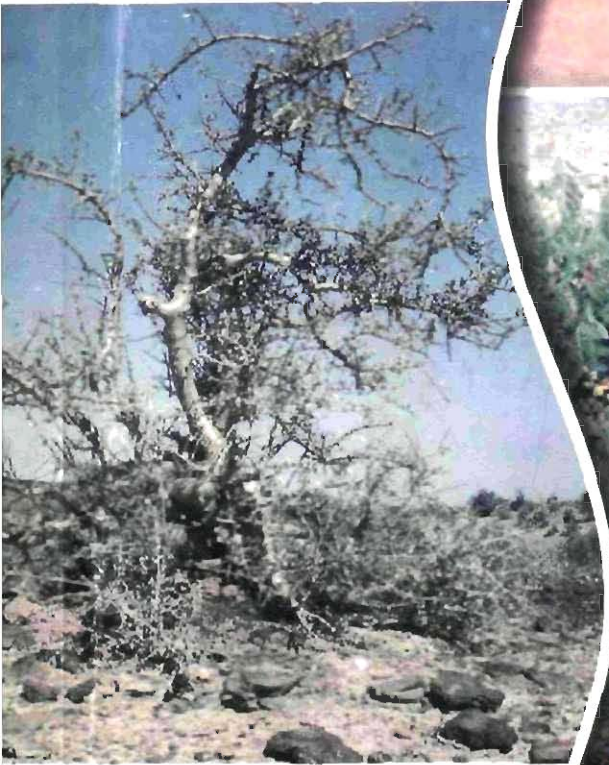




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Medicinal Plants in the Indian Arid Zone



Suresh Kumar
Farzana Parveen
Pratap Narain

Central Arid Zone Research Institute
Jodhpur



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**SURESH KUMAR
FARZANA PARVEEN
PRATAP NARAIN**



CENTRAL ARID ZONE RESEARCH INSTITUTE
Jodhpur

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Front Cover : Left half (top to bottom)

1. *Salvadora oleoides* (Pilu)
2. *Commiphora wightii* (Guggul)
3. *Withania somnifera* (Ashwagandha)

Right half

1. Sandy land scape
2. *Cassia angustifolia*, (Senna, Sonamukhi) a new herbal crop of arid region

Back cover

1. *Aloe vera* plantation for soil and water conservation

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FOREWORD

Arid and semiarid regions covering 38 percent geographical area of India have been the cradle of rich biodiversity in its variety of botanicals as well as their uses. Traditional wisdom perfected by centuries of ingenious and innovative human skill generated intellectual property and in India nearly 7500 species are recognized for their medicinal value. We look forward to these safe herbal drugs with increasing hope. It is this hope that has lead to commercialization of about 120 medicinal species of which about 15 percent are from arid zone that could be potential source of income to people living under harsh climatic conditions of the desert.

Entire herbal trade is witnessing a spectacular renaissance comprising of collector - grower - processor - pharmacies - multinationals - distributors - dealers and across the shelf shopkeepers and 'Pansaris'. Diversification of cropping system using medicinal plants will open new vistas for poor farmers to earn higher profits. However, education of enlightened farmer/collector with the basic knowledge of medicinal plants and their herbal marketable products so also their agro-techniques and value addition are key issues which can provide him an edge to realize full value of his products. The present publication "*Medicinal Plants in the Indian Arid Zone*" provides relevant information of species, their herbal products and agro-techniques along with their photographs. The scientists of CAZRI, Jodhpur deserve appreciation for this very informative and timely publication. It is hoped that the publication will benefit farmers, extension workers, line departments and researchers as well as planners to provide due right perspective to use this treasure of natural wealth in order to augment the income of farmers and to generate employment.


(MANGALA RAI)

Secretary, Department of Agricultural Research & Education
and

Director General, Indian Council of Agricultural Research
Dr. Rajendra Prasad Road, Krishi Bhawan, New Delhi 110001, India

March 4, 2005

PREFACE

Indian arid zone covers an area of 31.7 m ha under hot and 7.0 m ha in cold arid zone. Hot arid zone is characterized by scanty, ill distributed, 100-450 mm rainfall, high temperature and strong wind causing vary high 1800 mm annual evaporation. Its sandy soils have poor water holding capacity as well as low fertility. Droughts are recurring features of hot arid zone occurring at least once in three years. As agriculture is not a very dependable proposition, it becomes imperative to look for rich animal and vegetation wealth of ecosystem for survival. Many of the medicinal herbs are extremely hardy and survive under extreme dry situations.

Agroforestry with grasses, shrubs and trees have been mainstay of desert dwellers. A fast increase of 400% population of human and 250% that of livestock since independence is exerting insurmountable pressure on arid ecosystem. Per household land resources have decreased by 50%. Growing hunger of land is limiting trees to farm boundaries and wastelands. Besides, severe international competition is compelling arid zone farmer for higher cash options. Under these new emerging scenario and priorities, medicinal and aromatic plants, which are specific to arid zone have strategic role to play in times to come. Medicinal plant based farming system with value addition will support livelihood of farmers under adversities especially droughts. It is in this context that this publication may prove vary handy to farmers and entrepreneurs. The information provided here will help in correct identification of medicinal plants and their products by trade name and scientific name. This is further fecilitated by a glossary of medical terms commonly employed in describing usages of herbals and index of plant names in Hindi at the end of bulletin. It is therefore, a step forward in standardization of herbal sources and products, a gray area deserving focused attention now.

It is hoped that this bulletin will be useful to well-informed farmers, students and agricultural researchers on one hand and the Ayurvedic practitioners, planners and administrators so also entrepreneurs and industrial houses. We would consider our efforts amply rewarded if this information could evoke interests of researchers in their validation, domestication, agro technique standardization and post harvest value addition besides trading, commercialization and marketing so as to provide some additional income to cash starved poor farmers of arid zones and their conservational use for sustainability of entire arid ecosystem.

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We are extremely grateful to Dr. Mangla Rai, Secretary, Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR) New Delhi for his visionary guidance, constant encouragement and for writing 'Foreward' of this bulletin. Authors also thank Dr. J.S. Samra, Deputy Director General, (Natural Resources Management) ICAR, New Delhi for his enthusiastic advice and financial support. Dr. Amal Kar, Officer-in-Charge of Division of Natural Resources and Environment deserve our thanks for facilities. We appreciate the efforts of photographers, Sh. V.K. Jayalwal and Sh. Deva Ram for taking many of these excellent photos. We thank Dr. L.N. Harsh and Dr. H.A. Khan, Principal Scientists, Forestry and Organic Chemistry, respectively at CAZRI for photo of '*Salvadora oleoides*' close up of 'Pilu' and its harvested 'Pilu'. Dr. R.P. Meghwal provided photo of 'Aonla' and 'Anar' for which we are grateful to him. Though entire staff of Plant Ecology Section has helped us in various ways in completing this task, we would like to especially thank Sh. Harish Purohit for desktop formatting, Sh. V.K. Harsh, for market sampling of herbal products, Sh. Abhay Singh, for herbarium assistance and Sh. Narain Ram for growing many of these herbals in the Botanical Garden of CAZRI. We also appreciate the timely support of Administrative and Financial and Account Sections of CAZRI, enabling it to be brought out in this form.

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MEDICINAL PLANTS IN THE INDIAN ARID ZONE

Using plants to cure human ailments is as old as human civilization. Indian system of medicine viz. Ayurveda, Unani and Sidha employ a great variety of plants in their curative and preventive preparations. Renaissance of recent interest in the herbals as source of cosmetics, nutraceuticals, toners, rejuvenators, detoxifiers and anti aging compounds has opened up new vistas of research in their botany, cultivation, chemistry and clinical standardization. These plants are also being prospected for developing drugs to cure such diseases, for which no satisfactory control has been found in allopathy. Some of such diseases are brain related disorders, cardiovascular diseases, cancer, AIDS, arthritis, bronchial asthma, diabetes etc. The increasing use of herbals is also reflected in their rising trade: the present global herbal market of about US\$62 billion is growing 15% annually and may touch \$5 trillion by 2050. Indian share in the whole trade is just 2% against our immediate neighbor China having a lion's share of 33%. We export nearly Rs. 300 crores worth of herbals from annual production though their domestic trade is of Rs. 4000 crores. Exact share of arid zone of India is not known, but it is estimated at 20-25%.

Arid zone of Rajasthan is fortunately gifted with 628 species belonging to 352 genera and 87 families (Bhandari, 1990). Of these, 116 species from 99 genera and 52 families are medicinally important as household remedy and utilized in traditional system. Of these, 17 species are commercially exploited while 28 species are constituents of Ayurvedic and Unani preparations. Most of these species are collected from natural habitats, fallows, field fences and waste lands. A further study revealed that of the 19 species most frequently used in drug preparations and which also top the export market, 13 are from arid and semiarid zone. Besides, there are a large number of medicinal plants which are preferably sourced from arid and semi arid Rajasthan due to specific agro climatic conditions here. The information on these plants, their occurrence, botany, uses as well as their raw and final marketable produce is either scattered or scanty or quite often not available. An attempt has been made here to collate this information about some 110 medicinal plants. Besides published literature, we have relied heavily upon the botanical and ecological data archives of CAZRI, generated specifically on

herbarium and survey data records of various districts of arid Rajasthan. The information on each plant begins with its botanical name, followed by English, Hindi, Sanskrit and local name and family. Its occurrence on different landforms and land uses has been described. Morphological description of plants follows thereafter. Plant part used and usages are described. The information on agro techniques is based on both, published literature as well as authors own experiences in the past 25 years. The information on final produce as a commodity of trade is based on samples collected from the herbal markets of Jodhpur and Delhi. For all such samples, we have given color photos as an aid to achieve the standard desired in market.

The medicinal uses of different plants described in this bulletin are compiled from a large number of books and publications mentioned at the end. Besides, these have been supplemented also by the ethnobotanical data collected by authors in the past 15 years. Since these uses have not been validated clinically, it is important that using any of the plant for any health disorder/disease should be under the strict supervision of qualified and practicing medical doctor in Ayurveda / Unani / Sidha or Allopathy system. Authors and the Institution, i.e. CAZRI will not be responsible for any ill effects/side effects or damages/losses of any type by way of use of these plants which is only and only at the user's risk. Further, in view of widely fluctuating market prices of herbals, the trading information is only indicative and not final. In fact prevalent market cost at the time of trading should be considered final.

***Abrus precatorius* Linn. (Fabaceae)**



English	: Indian Liquorice
Sanskrit	: Gunja, Raktika
Hindi	: Chirmiti, Ratti
Local	: Chirmi



It is a perennial twining climber on hedges particularly on hills in most parts of India. It has multiple branches. Leaf has leaflets 10-20 pairs, oblong, obtuse and hairy below. Flowers pink or white. Pods 3-5 seeded oblong turgid, beaked and pubescent. Seeds 3-6 scarlet red with black spot around the hilum, shining and smooth. Flowering and fruiting from October to March.

Part used: Root, Leaf and Seed

Usage : The root, a substitute for liquorice in coughs and catarrhal affections is diuretic, tonic and emetic. The decoction of roots is used to cure leucorrhoea. Leaves paste is applied on wounds and painful swellings. Decoction of leaves is used for cough, cold and hoarseness. Seeds are used as purgative, emetic, and aphrodisiac and also in nervous disorders. Seed paste is used for baldness, dandruff and other hair and skin diseases.

Agrotechniques : No specific agro technique is available as it is a commonly occurring weed. However, it can be propagated through seed/stem cuttings. Mature seeds can be collected and sold @ Rs. 40/kg.

***Abutilon indicum* (L.) Sweet (Malvaceae)**



English	: Country Mallow
Sanskrit	: Atibala
Hindi	: Kanghi
Local	: Tara Kanchi



Common in waste places throughout hotter parts of India, it is a hoary tomentose perennial small shrub. Leaves velvety on both sides, cordate with toothed margin. Flowers golden yellow. Fruit subglobose and depressed in the center. Seeds brownish black, reniform with rough surface. Flowering and fruiting in October to January.

Part used : Whole plant

Usage : A febrifuge, anthelmintic, anti-inflammatory, diuretic, aphrodisiac and demulcent, its decoction is used to cure gonorrhoea. A known antidote for the scorpion bite. The extract of leaves is applied locally to boils and ulcers and as a fomentation to painful parts. Root infusion is used as a nerve tonic and antipyretic. Powdered flowers are used in cough. The infusion of seed is a cooling drink.

Agrotechniques : No specific agrotechnique available as it is collected from the wild. Plant prefers hot and humid climate and can be propagated through seeds/ shoot cuttings. Seeds sold @ Rs. 20 / kg ; Bark @ Rs. 10 /kg

Acacia nilotica (L.) Del. Sub Sps. *indica* (Benth.) Brehan (Mimosaceae)



English	: Indian gum
Sanskrit	: Babbula, Sukshmapatra
Hindi	: Babul
Local	: Banwal



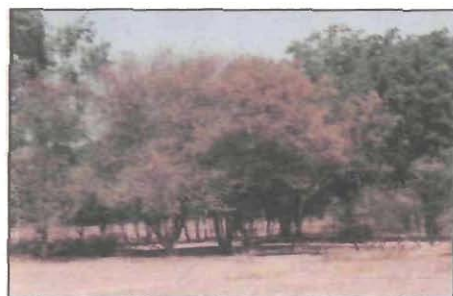
Through out the area it is common on open grounds. Now extensively planted on wastelands in the drier parts. It is a medium sized evergreen tree. Stem has black to dark brown longitudinally fissured bark, Leaves bipinnate with whitish straight stipular spines. Flowers golden yellow in globose heads. Pods compressed, moniliform and constricted between seeds. Seeds black brown, smooth, compressed and suborbicular. Flowering and fruiting in March to May.

Part used: Gum, Leaf, Bark and Pod

Usages : Gum is used to prepare 'Laddus', a sweet dish which is used after delivery as tonic for general health. The decoction of leaves and bark is used to cure toothache and sore throat. Pod decoction is used in the treatment of urinogenital diseases. Leaves useful for treating bronchitis, piles and eye diseases. Leaf paste applied over pimples, blisters and boils. The twigs are used as tooth brushes. Bark paste is applied on fractured bone for early recovery.

Agrotechnique : Propagated through seeds, it grows well on deep, loam to clay loam soils. Irrigation at regular intervals is needed in first year of plantation. Weeding as and when required. A cut is made in the old stem to obtain gum from the bark. Babul gum sold @ Rs. 55/- kg.

Acacia senegal (L.) Willd. (Mimosaceae)



English	: Gum-arabic, Acacia
Sanskrit	: Snetā
Hindi	: Kumta
Local	: Kumbat, Kumatiyo



It is a small, prickly tree common on wastelands and gravels throughout the desert. It has glabrous-grey pubescent branches having hooked or straight spines. The two spines are slightly curved upwards and middle one curved downward. Leaves dark green. Flowers in whitish fragrant spikes. Fruit is linear, oblong, thin flattend pod, pale brown, 3-6 seeded. Flowering and fruiting in August - January.

Part used : Gum resin, Stem and Flower

Usage : Source of true gum Arabic, which is demulcent and cures intestinal trouble because of soothing effect on mucous membrane. Externally it is applied on inflammed parts and burns and sores. It cures malaria, cough and sore throat. Gum is used to prepare sweet dishes which are used after delivery as a tonic. Twigs are used for cleaning teeth. The bark decoction is beneficial as a gargle and mouth wash in throat infection. The decoction of flowers is used to wash the infected eyes by desert dwellers. Seeds eaten as vegetable.

Agrotechniques : Propagated through seeds, it prefers sandy loam soils besides sand dunes and rocky areas. Direct sowing of seed/ one year old plant prepared in nursery can be planted in June-July. It requires 1-3 irrigations in first year after plantation to ensure better survival. Weeding as and when required after planting. Gum is collected from bark. Pods are dried in the sun light and seeds are taken out. Gum sold @ Rs. 55/kg, Kummat seed sold @ Rs. 100/kg.



***Achyranthes aspera* Linn. (Amaranthaceae)**



English	: Rough chaff
Sanskrit	: Apamarga
Hindi	: Chirchita
Local	: Undo kanto



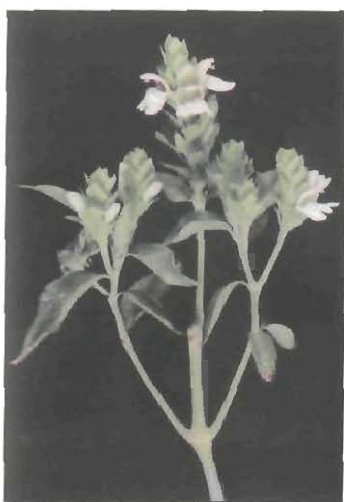
It is a common weed under shade throughout up to 1000 m elevation in India. An erect, stiff annual herb, up to 1 m tall, branching near the base. Stem angular, ribbed, thickened, light green or pink covered with short, stiff and slightly rough hair. Leaves simple, elliptic or obovate, acuminate or rounded at apex and glabrous. Flowers greenish white, small arranged on terminal / axillary spikes. Seeds light brown, sub cylindrical, pointed at apex and rounded at the base. Flowering and fruiting in August to December.

Part used : Whole plant

Usage : Its ash having high proportion of potash, acts as antacid. A bath with whole plant decoction relieves itching in skin diseases. Powder of whole plant cures spleen enlargements. Decoction of plant is diuretic while its ash is used in cold and cough. Leaves are used to treat asthma. Decoction of powdered leaves useful in the early stages of diarrhoea and dysentery. The juice of leaves is valuable in stomach disorders, kidney problems and is also applied externally over cuts and wounds. Its powdered root is very useful in pneumonia and cholera. Paste of the root is very beneficial in eye disorders (Ophthalmia and opacity of the cornea). Root paste with cold water is given to stop bleeding after abortion. Root powder given as an antidote in dog bite, scorpion sting and rat bite. Root paste is applied on the abdomen for facilitating easy and painless delivery. Seeds mixed with milk are used as tonic.

Agrotechniques : Propagation through seeds. It is normally a weed and hence collected from nature. No specific agro techniques are available. Whole dried plant is sold @ Rs. 8-10/kg and of seeds is sold @ Rs. 40/kg.

***Adhatoda vasica* Nees (Acanthaceae)**



English	: Malabar nut
Sanskrit	: Vasaka
Hindi	: Arusa
Local	: Adusa



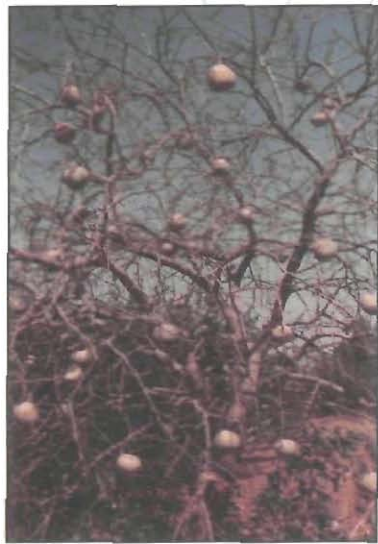
A tall, densely branched, perennial evergreen shrub with unpleasant odour, common in wastelands, in rocky places and along the fences. Leaves large elliptic lanceolate, opposite. Flowers born on solitary axillary spikes, white in colour with few purplish marking. Fruit brown, pubescent and four-seeded capsule. Seeds glabrous. Flowering and fruiting throughout the year

Part used : Whole plant

Usage : Fresh juice / decoction, infusion and powder are extensively used as an expectorant, sedative and anthelmintic. The drug 'vasaka' is often taken in the form of juice extracted from its leaves mixed with ginger or honey. Both, leaf powder and decoction effective in bronchitis, severe asthma, tuberculosis, cough, diarrhoea and dysentery. Paste and juice of fresh leaves is beneficial in healing wounds and in skin diseases. The root and stem bark has the same medicinal uses as the leaves. The flowers are used to treat tuberculosis.

Agrotechniques : Propagated through Seeds / Stem cuttings, 8-10 cms long with 3-4 internodes. Cutting takes 15-20 days to sprout and 30 days to root after which transplanted at 2x2m, with regular watering and weeding. Whole plant can be cut and dried in the shade. This whole dried plant sold @Rs. 20/- per kg.

***Aegle marmelos* (L.) Corr. (Rutaceae)**



English	: Bael tree, Bengal quince
Sanskrit	: Bilva
Hindi	: Bel
Local	: Bil patar



Wild in mixed deciduous forest of Aravallis, it is now cultivated in orchards and planted near temples. It is a large deciduous tree with thorns and trifoliate leaves. Leaflet ovate-obovate with acuminate apex, crenate margin and densely punctate on both surfaces. Flowers are greenish white and sweet scented. Fruit is woody and smooth, ovoid or subglobose. Seeds are embedded in a sour, mucilaginous aromatic pulp. Flowering and fruiting in January to July

Part used : Roots, Stem bark, Leaf and Fruit

Usage : Infusion of leaves is effective in peptic ulcers. Leaves rich in tannin, reduce inflammation and heal the ulcers. The oil prepared from leaves is used in the treatment of cold and respiratory disorders. The juice of leaves effective in diabetes. Paste of leaves applied externally heals boils. Extract of root mixed with neem oil cures infection, inflammation and discharge in ear. Decoction of fruit is useful in typhoid fever. Ripe fruit is aromatic, cooling, laxative and is used in the form of 'sherbat'. The pulp of ripe fruit is very useful in constipation. The unripe fruit is very effective in case of chronic diarrhoea and dysentery.

Agrotechniques : Propagated through Seeds/ root cutting. Sowing is done in June or July and saplings are transplanted in the next second rainy season in 1x1x1 m pits spaced 10-12 m. Irrigation every 15-20 days in summer, and weeding essential. Fruits should be collected after ripening and used as such. Its pulp should be dried in the shade. Dried pulp sold @ Rs. 12-25/ kg, Stem bark sold @ Rs. 20-25/ kg and leaves sold @ Rs. 25/kg



***Albizia lebbek* (L.) Willd. (Mimosaceae)**



English	: Indian walnut
Sanskrit	: Sirisha
Hindi	: Siris
Local	: Sares



A deciduous tree with spreading crown occurs commonly in wastelands and also planted along road sides. Leaves are bipinnate. Pinnae usually 1-4 pairs and leaflets 5-10 pairs, elliptic oblong with oblique base. Flowers fragrant, white or greenish yellow born in globose umbellate heads. Pods wide, linear, oblong, pointed, thin, green turning straw coloured on maturity. Seeds smooth shining, pale brown and compressed. Flowering and Fruiting in August to December

Part used : Whole plant

Usage : Paste of stem bark is used to treat boils, pimples and ulcer. Leaves are used to treat night blindness. The leaf paste is applied in snake bite and scorpion sting. Flowers are used as a cooling medicine and used externally in treating boils, skin eruptions and swellings. Root paste is used to cure ophthalmia, skin diseases and inflammations. The powdered root bark and root gum used for strengthening the gums. Seed oil is applied externally for leucoderma.

Agrotechniques : Propagation is best by seeds, can be also by stump planting. Nursery raised saplings are planted in 60 cm pits at 5x5 m during rainy season. Weeding at regular intervals. Seed sold @ Rs. 40/kg.

***Aloe vera* (L.) Burm.f. (Liliaceae)**



English	: Barbados aloe
Sanskrit	: Ghritkumari
Hindi	: Ghikanwar
Local	: Gwarpatha



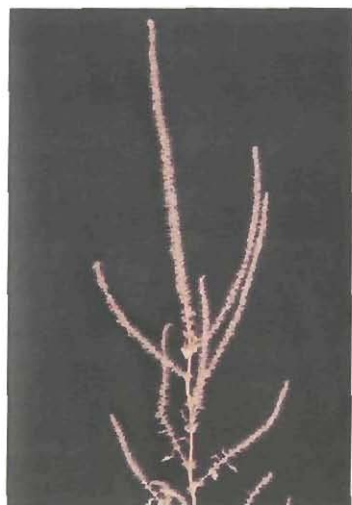
A perennial erect, succulent shrub found almost throughout the area. It has multiple tuberous roots. Stem is very small and leaves are pale green, fleshy, radical, sessile, tapering to a blunt point with horny prickles at the margins. Yellow or orange coloured cylindrical flowers on leafless scapes appear in December to February.

Part used : Juice and Leaf pulp

Usage : Fresh juice of leaves is cooling, cathartic and treats dermatitis, burns and other skin problems. It is a hair conditioner and additive in skin creams. A yellowish coloured juice from the cut leaves is concentrated to make commercial drug “aloes”. The juice of roasted leaves is valuable in colds, coughs, sciatica, rheumatism and stomach disorders. Aloe is externally applied on inflamed painful parts of the body. Pulp of leaves is applied externally to expel the guinea worms. It also cures jaundice, disturbed menstruation, earache, eye diseases, liver and spleen problems. Poultice of pulp tied over boils and tumor hastens suppuration. A tooth paste containing the Aloe gel has been prepared for preventing gingivitis and other bacterial infections. Leaves are eaten as vegetable and as pickle.

Agrotechniques : Propagated through Root suckers in July August, preferably in sandy soil. Plant to plant distance should be 50x50 cm and row to row, 75-100 cm. The field should be ploughed and farm yard manure added at 2.5 t/ha. Irrigation increases growth of plant. In rainfed areas, growth is slow. Weeding after one month. After one year of plantation leaves can be cut and used as such. Fresh leaves sold @ Rs. 5-10 /kg.; Dried Aloe sold @ Rs. 150/kg.

***Amaranthus spinosus* Linn. (Amaranthaceae)**



English	: Prickly Amaranth
Sanskrit	: Alpamarisha
Hindi	: Kantabhaji, chaulai
Local	: Kantio-chandelo

An erect armed annual herb grows as weed of waste places, fields and gardens. Stem branched, angular, green or reddish. Leaves long petioled ovate elliptic or lanceolate. Flowers monoecious, minute, grayish green in dense axillary clusters or in terminal dense or interrupted spikes. Fruit dehiscent and ovoid. Seeds are shining black and compressed. Flowering and fruiting in August to November.

Part used : Whole plant

Usage : The plant is diuretic, subdrific and febrifuge. It is used in treating fever and colic pains. The poultice of leaves is applied to bruises, burns, inflammation and infusion as diuretic. Leaves are eaten as vegetable to dissolve calculi. The decoction of root is given to cure stomachache and externally applied on wounds and boils. In Ayurveda root is used to treat uterine disorder. Root paste also applied over the scorpion bite.

Agrotechniques : Directly collected from the nature and hence no agrotechniques are available.

***Andrographis paniculata* (Burm. f.) Wall ex Nees (Acanthaceae)**



English	: Indian chiretta
Sanskrit	: Kaalmegha
Hindi	: Kiryat, Kalmegh
Local	: Kalmegh



An erect branched annual herb in moist and shady plains of uncultivated fields it is also cultivated now. Stem quadrangular, branched with longitudinal furrows. Leaves dark simple, opposite, green and lanceolate. Flowers pale purple in axillary and terminal, panicle racemes. Fruits almost linear-oblong compressed capsules. Seeds subquadrate or oblong, numerous and yellowish brown. Flowering and fruiting from August to February.

Part used : Whole plant

Usage : The extract of whole plant is useful in jaundice, liver troubles, bronchitis and diabetes. Many household medicines known as "Alvi" is prepared from the leaves and is given to children suffering from stomach complaints. A decoction of plant is considered a blood purifier and its extract or infusion is reportedly used to relieve fever. The dried leaves and tender shoots constitute the well known drug 'Kalmegh' or 'green chiretta' used as bitter tonic and febrifuge.

Agrotechniques : Seeds sown during May-June. Seedling transplanted at a distance of 60x60 cm and irrigated 2-3 times with regular weeding. Whole plant harvested during November to January. Dried whole plant (Panchang) sold @ Rs. 50/ kg

***Argemone mexicana* Linn. (Papaveraceae)**



English	: Mexican prickly poppy
Sanskrit	: Svarnakshiri
Hindi	: Shial kanta, kateli
Local	: Satyanasi, Kateli



Naturalized throughout as weed of waste places, croplands, gardens and drains. A prickly annual whitish green herb with erect usually branched stem. Leaves sessile with slightly incised undulate margins and white veins. Sharp, yellow prickles on leaf margin and mid rib. Flowers yellow solitary, axillary. Fruit a prickly capsule, oblong or elliptic with many seeds. Seeds small round, blackish brown and pitted. Flowering and fruiting throughout the year in moist localities but mainly from January to April

Part used : Whole plant

Usage : Plant juice is used in eye infection, cataract problem, to increase eyesight and to relieve rheumatic pain, cutaneous affections and jaundice. Roots are useful in chronic skin diseases. The leaves are rubbed on the skin to cure scabies. Seeds laxative, expectorant, demulcent and cure cold, cough, asthma and other respiratory problems. Seed oil is used externally for skin diseases. Seed paste applied for tooth decay and pyorrhea.

Agrotechniques : Not Available as it is collected directly from the wild. Seeds sold @ Rs. 35/kg.

***Argyria nervosa* (Burm. f.) Boj. (Convolvulaceae)**



English : Elephant creeper
Sanskrit : Vidhara
Hindi : Samandar-ka-pat
Local : Ghav-bel



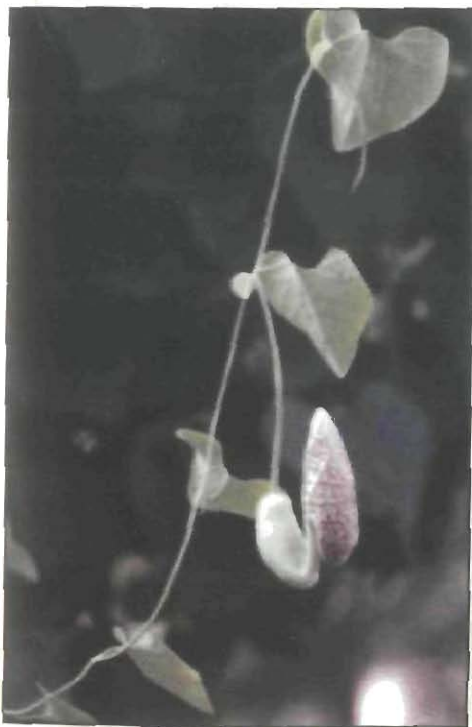
A large climbing shrub grown as an ornamental in the gardens. Stem tomentose white. Leaves ovate, cordate, glabrous with lower surface white tomentose. Flowers silky pubescent funnel shaped and purple. Fruit globose and apiculate with black seeds. Flowering and fruiting in August - December

Part used : Root and Leaf

Usage : The roots are diuretic, aphrodisiac and used as a tonic. The decoction of roots purifies the blood and cures rheumatic pain. The lower hairy surface of leaves is tied over tumour, boils and wounds for early suppuration and healing. Poultice of leaves is used to reduce the swelling. The upper surface of leaves has cooling properties.

Agrotechniques : It grows on all types of soils. Seeds can be sown direct in the field or polybags during June-July and saplings are transplanted after one month and irrigated every 10-15 days with regular weeding. Roots and leaves harvested and dried in shade. Roots sold @ Rs. 20/kg.

***Aristolochia bracteolata* Lamk. (Aristolochiaceae)**



English : Birth wort
Sanskrit : Kitamari
Hindi : Kirmar
Local : Hukka bel

It is an erect perennial, climber on hedges and road side pebbles through out the area. Leaves reniform with pointed tip. Leaves much variable in shape and size. Flowers solitary and dark purple. Fruit an oblong ellipsoid capsule. Seeds 2 lobed and compressed. Flowering and Fruiting in September to February

Part used : Whole plant

Usage : An infusion of whole dried plant is used as an anthelmintic, purgative, anti-inflammatory and antiperiodic. Decoction of the root expels round worms. Leaf juice mixed with mustard oil cures skin diseases like eczema. Leaf paste is used for expulsion of the guinea worms from the affected part. Lotion is prepared by crushing/soaking seeds in water that softens hairs.

Agrotechniques : It occurs abundantly in nature and complete agrotechniques are yet to be standardized. It requires good ordinary and well drained soil in which stem cuttings can be planted directly during rainy season.

***Asparagus racemosus* Willd. (Liliaceae)**



English : Garden Asparagus.
Sanskrit : Satavari
Hindi : Satawar, Satmuli
Local : Narkanto, Satawar



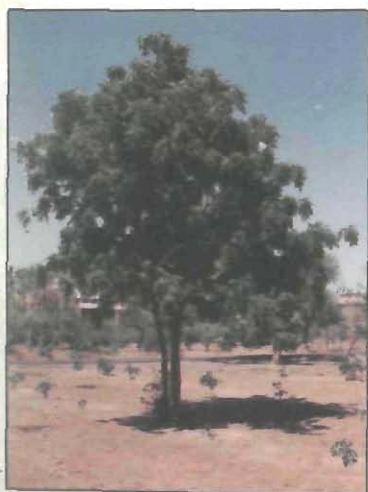
A straggling much branched spinous perennial climber on open rocks and hills. It has many finger like tuberous roots. Leaves scaly membranous on the main stem with a conical, spinous straight or curved spur. Flowers white small, arranged in long raceme. Fruit a globose berry, red in colour with black seeds. Flowering and fruiting in May to December.

Part used : Tuber

Usage : Fresh juice from tuber is given orally in dysentery, acidity and to increase the breast milk after delivery. The juice and tuber paste is applied externally to the burning feet and to heal the wounds. Tuber powder an aphrodisiac, diuretic, demulcent and cures leucorrhoea and gout. Medicated oil prepared using tubers is beneficial for nervous and rheumatic complaints. Fresh tubers eaten to give strength, beat the heat and cure body ache, boils, cough and urinary infection.

Agrotechniques : Seeds collected in February to April, dried in the sun and soaked for 2 days in water and then sown in poly bags or beds. Saplings are transplanted in July. Root suckers can also be planted in rainy session. Regular watering and weeding at monthly interval essential. After 12-18 months of planting when leaves become dry, tubers harvested and disc (small roots) should be separated from tubers so that it can be grown within 20 days in the field and a new crop can be taken. Root tubers washed in water and dried in shade. Dried roots sold @ Rs. 50/kg.

***Azadirachta indica* A. Juss. (Meliaceae)**



English : Margosa tree
Sanskrit : Nimba
Hindi : Neem
Local : Nimro



Wild as well as planted on all types of soils, it is a drought hardy large evergreen tree growing 10-11m tall with spreading branches. Leaves have leaflets 4-7 pairs, opposite, lanceolate with serrate margins. Small white scented flowers in axillary clusters. Fruit smooth ellipsoidal drupe, green or yellow with a sweet pulp enclosing a seed. Flowering and fruiting in March to July.

Part used : Whole plant

Usage : The leaves applied externally, are very useful in skin diseases, boils, chronic ulcers, eruption of smallpox, glandular swellings and wounds. The decoction of the leaves with inflorescence taken orally cures malarial fever. Washing of hair with leaf decoction stops hair loss. Leaf juice useful in night blindness and conjunctivitis. The juice of leaves and equal quantity of pure honey is an effective remedy for any inflammation in the ear. The juice and the half quantity of honey when taken empty stomach for seven days cures jaundice. Paste of leaves with black pepper and rock salt is used to treat fever. The smoke of dried leaves is very effective to repel the mosquitoes and other insects. The infusion is used as an antiseptic wash for healing of ulcer and wounds.

The root bark and stem bark has more or less same properties. The bark is stimulant, very useful in piles. A decoction of bark, sandal and giloy taken internally removes the urticaria. The paste of bark is applied on burnt portion for early healing. Paste applied on cuts and boils hastens suppuration. The sap of tree has been found

effective in the treatment of leprosy. Cleaning the teeth with neem twig prevents gum disease and protects the mouth from various infections. The fruit is anti-periodic, purgative and anthelmintic. The dry fruits are bruised in water and used to treat skin diseases. Fruit powder is used to kill lice in the hairs. It is also eaten for curing pimples and boils. Seed oil extracted from the seeds is known to have anti-inflammatory and healing properties and is used especially to treat skin infections.

Agrotechniques : Seeds collected in February-March sown directly in polybags. The saplings can be planted in 50 x 50 x 50 pit filled with local soil mixed with farmyard manure (2: 1). The plant to plant distance may be between 5 to 8 m. Irrigation required before and after plantation and 2-3 times in first two years, with regular weeding. Mature leaves and ripe fruits are collected and dried. Oil is extracted from the dried seeds. Leaf sold @ Rs. 20/kg; Seed sold @ Rs. 30/kg; Seed powder sold @ Rs. 120/kg.

***Balanites aegyptiaca* (L.) Delile. (Simaroubaceae)**



English	:	Desert Date
Sanskrit	:	Ingudi
Hindi	:	Hingot
Local	:	Hingotia



Common in open sandy plains with impeded soil and scrub forests especially in desert. It is a small spiny evergreen tree. Leaves are bi-foliolate and palmate compound. Flowers are greenish white in dense axillary cymes. Fruit is a stony drupe with a bitter pulp of unpleasant odour. It has a single oily seed. Flowering and fruiting in December-July.

Part used : Whole plant

Usage : The unripe fruits, bark, leaves and seeds possess anthelmintic and purgative properties. The seed kernel oil is effective in skin diseases, burns, cuts and wounds and in the treatment of leprosy. Seed endosperm cures dry cough, stomachache and cataract. Fruit pulp is useful in skin diseases, leucoderma and cough. Dry powder of the mature fruit is used to prevent pregnancy. Root paste applied externally cures guinea worm. Roots and fruits have 'Diosgenin' widely used for production of steroid and oral contraceptives.

Agrotechniques : No specific agrotechnique are available because its gregarious populations from root suckers are abundant in Rajasthan. Fruit sold @ Rs. 40/kg.

***Barleria acanthoides* Vahl (Acanthaceae)**



Hindi	:	Bajradanti
Local	:	Bajardanti, Chapri

Dominant on rocks and buried pediments, it is a very rigid, spinous undershrub. Leaves are dark green, oblong, mucronate and pubescent. Flowers white with long tubes. Fruit a capsule, ellipsoid tapering at both ends. Seeds compressed, silky hairy and ovoid. Flowering and fruiting in October - March

Part used : Whole plant



Usage : The decoction of whole plant is used in the treatment of toothache and to cure bleeding gums.

Agrotechniques : No specific agrotechniques are available. It is collected directly from the nature. However, it can be propagated through seeds/root cuttings. 'Panchang' sold @ Rs. 30/kg.

***Barleria prionitis* Linn. (Acanthaceae)**



Sanskrit	:	Saireya
Hindi	:	Jhinti
Local	:	Bajardanti

Occurring wild in ravines, hillocks, rocky and shady habitats in the hotter parts of area. Very often planted as hedge also. A much branched prickly undershrub with 2 or 4 branched axillary spines. Leaves opposite, elliptic, lanceolate and acuminate at both ends. Flowers yellow, sessile in terminal spikes. Fruit is a 2-seeded capsule with a tapering solid beak. Seeds are much compressed and ovate. Flowering and fruiting in December to April

Part used : Whole plant

Usage : Decoction of plant is used as a wash in dropsy. Decoction of young branches and bark relieves pain and swelling in the gums. Fresh juice of bark is diaphoretic and expectorant. Twigs are used as tooth-brush. Root extract is taken orally for leucorrhoea. Root paste is applied externally to reduce boils and glandular swellings. The fresh leaves are crushed and tied on the wounds for early healing and to relieve rheumatic pains, scabies and itches. Gargling with leaf decoction relives toothache. The leaf juice is useful in fever and cough.

Agrotechniques : Since it is wildy found in nature, its agrotechnique is not available. It can be cultivated through stem cutting and seeds.

***Blepharis indica* T. Anders. (Acanthaceae)**



Sanskrit	:	Shikhi
Hindi	:	Uttangan
Local	:	Untkantalo, Bhangari



Dominating rocky gravelly sites and impeded habitats in western desertic zone, it is a small dichotomously branched annual herb with woody root stock. Leaves are sessile, whorled, linear and recurved at margins. Flowers pale blue in strobilate, axillary or in clusters surrounded by white membranous bracts. It has ellipsoid, compressed, polished capsule tapering at both the ends and 2-seeded. Seeds are densely villous. Flowering and fruiting in August to January.

Part used : Seed and Leaf

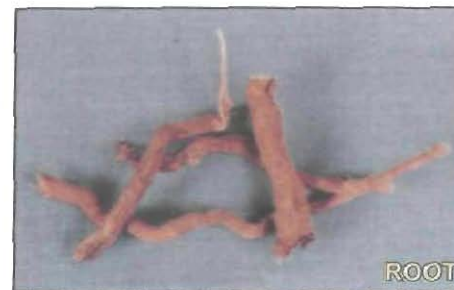
Usage : Seeds are diuretic, expectorant and aphrodisiac. Seeds boiled in milk and taken as tonic. Seeds are also given to cattle to increase milk production. The seeds are useful in liver, lungs and blood diseases. Leaf paste applied over wounds for early healing. The extract of seeds is used for earache.

Agrotechniques : No specific agrotechnique is available as it is very common in nature. Seed sold @ Rs. 250/kg.

***Boerhavia diffusa* Linn. (Nyctaginaceae)**



English	: Hogweed
Sanskrit	: Punarnava
Hindi	: Santhi
Local	: Santi, chinawari



Wild all over desertic area in slightly sandy soil or around dumping places, now cultivated also. A deep rooted spreading perennial herb, with a stout root-stock and many erect or spreading branches. Stem is creeping often purplish. The leaves are simple, thick and brittle usually whitish and smooth beneath and rough green on upper surface. Flowers white or pink in long stalked umbels. Fruits oval, 5-ribbed and green or brown in colour. Flowering and fruiting in through out the year, but maximum in rainy season.

Part used : Whole plant

Usage : The whole plant fresh or dried, is the source of drug 'Punarnava'. It is diuretic, antipyretic and laxative. Fresh boiled herb or liquid extract of the fresh or dry plant is very effective in the treatment of dropsy, inflammatory renal diseases and ascites. Fresh juice given as a blood purifier and to get relief from muscular pain. The leaves eaten as vegetable to cure night blindness.

Root powder effective in stomach disorder, particularly intestinal colic and in expelling intestinal worms, curing asthma, kidney and heart problem, gonorrhoea, anemia, cough, nervous weakness and paralysis. The roots are considered useful for jaundice. A paste of the root can be applied in several skin diseases.

Agrotechniques : It is a common weed and hence collected from nature. No specific agro techniques are available. It can be grown through seed /stem cuttings. Roots sold @ Rs. 40/kg.



***Boswellia serrata* Roxb. Ex Colebr. (Burseraceae)**



English	: Indian olibanum tree
Sanskrit	: Sallaki
Hindi	: Salai, luban
Local	: Salaran

Commonly found in the rocky areas, it is a deciduous, medium to large tree with ash coloured smooth papery bark. Leaves alternate imparipinnate; leaflet 8-15 pairs, opposite, pubescent, dark green and variable in shape. Flowers small, white in axillary racemes. Fruit trigonous, hard and winged. Flowering and fruiting in April December

Part used : Stem bark, Flower and Gum

Usage : The yellow colored gum exudes from the bark is an effective stimulant, expectorant, diuretic, in the treatment of ulcer, tumours, diarrhoea and dysentery, piles and skin diseases. Decoction of stem bark cures chronic cough and cold. Powdered flowers also cure cold and fever. Gum is used in the preparation of an ointment for sores and skin eruptions.

Agrotechniques : Seeds, root suckers, branch cuttings can be used to propagate it. Nursery raised saplings can be planted during rains in pits 60 cm even on rocky slopes with shallow gravelly and skeletal soils. Root suckers and branch cuttings can be planted directly in pits. Irrigation and weeding required frequently in first 3 years of its protection and care. Gum sold @ Rs. 75/kg.

***Butea monosperma* (Lamk.) Taubert (Fabaceae)**



English	: Flame of the Forest
Sanskrit	: Palaashaka
Hindi	: Dhak, Tesu
Local	: Phalas, Khakaria



Commonly on plains, stream banks and in deciduous forests. A small medium size deciduous tree with tomentose or downy, branches and ash coloured stem. Leaves are alternate 3-foliolate terminal leaflet largest than lateral ones, obtuse glabrous above and silky beneath. Flowers bright orange red, large, in dense raceme. Fruit is a flattened silky pod. The pod contains a single compressed dark brown seed at apex. Flowering and fruiting in January- June

Part used : Whole plant

Usage : Leaves useful as tonic, in diabetes, leucorrhoea, congested and septic throat and in treating incontinence of urine and also used as mouth wash. Flower extract applied over swelling for cooling effect. Gum is effective in diarrhoea and dysentery. Infusion of gum is used as local application for leucorrhoea. Seeds are beneficial in certain skin diseases and in eliminating roundworms.



Agrotechniques : It is raised through seeds in medium sized polythene bags. 3-4 months old saplings planted in pits (60x60x60 cm) 8-10 m apart during rains. Seeds or pods should be sown immediately after collection as they lose viability within six months of collection. Saplings irrigated and weeded every 1-2 months. Gum is collected from the stem bark and dried in shade. Flowers and seeds also collected. Gum sold @ Rs. 85/kg. Seeds sold @ Rs. 25/kg. Flower sold @ Rs. 15/kg.

***Calligonum polygonoides* Linn. (Polygonaceae)**



Hindi	: Phog
Local	: Phog, Phogro

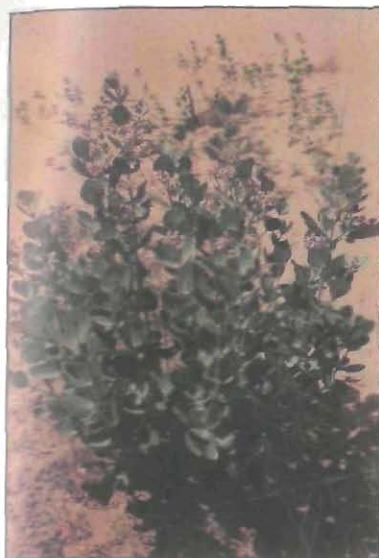
An evergreen leafless shrub with pale glabrous branches on sandy hummocky area. Stem ash colored, with internodes 3-4 cm. long. Flowers light pink. Fruits oblong densely covered with brown coloured bristles. Flowering and fruiting in April-May.

Part used : Whole plant

Usage : The aqueous paste of whole plant is given orally to the person who has taken heavy dose of opium as it acts as emetic. It gives cooling effect to the body. Flower buds effective in sun stroke. Flowers and fruits used in butter milk during summer. The juice of plant applied in eyes to remove the poisonous effects of *Calotropis procera* latex if gets into or contacted with eyes. Decoction of root is used as a gargle for sore gums.

Agrotechniques : Stem cutting 20-25 cm long, 1cm thick can be used to raise saplings. Seeds can be sown November - December and transplanted in July-August at 3x2 m spacing.

***Calotropis procera* (Ait.) R.Br. Ait. (Asclepiadaceae)**



English	: Swallow wort, Milkweed
Sanskrit	: Arka
Hindi	: Aak, Madar
Local	: Aak, Akara

A common weed in waste lands, cultivated fields, road sides, grazing land or degraded sites. It is stout hoary tomentose shrub with soft corky, spongy stem. Leaves are broadly ovate to ovate-oblong, almost horizontal, cottony pubescent on both surfaces with amplexicaul base. Flowers white with purplish tips cottony-pubescent in sub-umbellate cyme. Fruit is a pair of follicle, ellipsoid or ovoid. Seeds numerous broadly ovate flattened, light brown and white tuft of silky hair at the pointed end. Flowering and fruiting throughout the area

Part used : Whole plant

Usage : All parts of plants are used as anti-periodic, antidote and expectorant. The root paste is applied on snake and scorpion bite. Root bark diaphoretic used in dysentery, expectorant and emetic. The inner bark of stem is tied over cuts for early healing. Powdered flowers or gynostegium are used in cold, cough and asthma. Gynostegium is eaten for the cure of cancer. The latex is applied externally over swollen portion to reduce pain in piles and boils. The latex is also applied on knee with the help of camel's pellet to cure the knee pain. The extract of leaves is relieves earache. Fresh or warm leaf applied over painful rheumatic joints, swellings, sores and wounds.

Agrotechniques : It is abundantly found in nature. No specific agrotechniques are available.

***Capparis decidua* (Forsk.) Edgew. (Capparaceae)**



English	: Caper Berry
Sanskrit	: Karira
Hindi	: Karer
Local	: Kair, Kerro



Occurring on rocks, gravel and impeded sandy loamy plains, and even stabilized sand dunes it is a much branched, glabrous leafless spinous shrub or small tree with zigzag green branches and scanty small caducous leaves. Flowers usually 2-8 in terminal fascicles and red in colour. Fruit is a subglobose ovoid berry, consist of many seeds. The ripe berry is scarlet red. Flowering and fruiting in March-June, some times September-December.

Part used : Fruit, Stem and Root

Usage : Powdered young shoot cures toothache. The tender branches and young leaves are used as plaster for boils and swellings. Bark is useful for cough and asthma. Root bark is given in intermittent fever, rheumatism and inflammation. The ash of root used for bone setting. Fruit edible, useful in biliousness and cardiac trouble. Dried powdered fruit is used to cure cough and as vermifuge. The fresh juice of the stem cures ring worm disease.

Agrotechniques : The rooted stem cuttings are transplanted in 3x3 m spaced pits (50 x 50 x 50cm) during rainy season. One irrigation is required after transplantation, followed by weeding. Unripe and ripe fruits are collected from plants. Unripe fruits dried in shade and graded into smaller, medium and big sized products. Fresh fruits are sold in market @ Rs20-40/kg. Dried fruit sold @ Rs. 150- 300/kg according to size.

***Cardiospermum halicacabum* Linn. (Sapindaceae)**



English	: Ballon wine, Heartseed
Sanskrit	: Indravalli
Hindi	: Kanphuti
Local	: Kapal-phori, Gandio.

Commonly spreading on shrubs and hedges, it is a herbaceous annual climber. Leaves alternate, biternate to trinate, serrate, acute narrowed at base and apex deeply segmented. Flower white in umbellate cymes with a pair of tendrils. Fruit a bladdery capsule, pyriform, trigonous and membranous. Seed globose, smooth black with small white heart shaped aril. Flowering and fruiting in September to November

Part used : Whole plant

Usage : Promotes hair growth and for treating rheumatism, piles, nervous disorders and sprains. The juice of plant cures earache. Paste of plant cures rheumatism and stiffness of limbs. Roots are diuretic and laxative. According to Charak, Sushrat and Vagbhatt the plant is used as an antidote to snake and scorpion bite. The extract of plant is used to regulate the menstrual cycle.

Agrotechniques : It is directly collected from nature hence no specific agrotechniques are available. However, it can be easily propagated through seeds.

***Cassia angustifolia* Vahl (Caesalpiniaceae)**



English	: Indian senna
Sanskrit	: Svarna-pattri
Hindi	: Senna
Local	: Sonamukhi



A wild drought hardy shrub of semi arid regions of south India, becoming popular in Rajasthan, Gujarat and Madhya Pradesh. Leaves have glabrous pale green leaflets. Flowers bright yellow, borne as a racemose. The pods are flat, brown and papery, contain 5-7 dark brown smooth compressed seeds. Flowering and fruiting through out the year.

Part used : Leaf, Bark and Pod

Usage : Leaves are effective purgative, also used as an anthelmintic for killing intestinal worms. A paste of the dried leaves made with vinegar as a base can be used for acne, eczema and pimples. Bark is astringent and is used to treat sore throat and for treatment of rheumatism. Its decoction relieves stomachache and juice of fresh bark is good for dysentery.

Agrotechniques : Sandy loam soil pH 6-8.5 is suitable for cultivation. It can be raised through seeds in warm arid region except in water logged area. Seeds are sown in mid of July to last week of August. It does not require irrigation but one weeding. Leaves are harvested after 80 to 90 days and second cut after 90-120 days of first cut. Two to three cuttings of leaves possible in a year. The leaves and pods should be dried in a shade. Leaves sold @ Rs. 35/ kg. Seeds sold @ Rs. 200/ kg.

***Cassia fistula* Linn. (Caesalpiaceae)**



English	: Golden shower
Sanskrit	: Aragvadha
Hindi	: Amaltas
Local	: Amaltas



It occurs throughout but common in forest area or as avenue plantation along the roads. Small to medium sized tree with large dark green, shining leaflets. Bright yellow flowers are in large axillary racemes. Fruit cylindrical pod 50-60 cm long and dark brown in colour. Seeds are small flat, black shiny and embedded in sweetish black pulp. Flowering and fruiting from April to February.

Part used : Whole plant

Usage : The bark is antidysentric tonic and eaten raw to treat stomachache. It is also used in skin diseases such as eczema, leucoderma and arthritis. Leaves are useful in rheumatism and facial paralysis. Juice or paste of leaves is also used in ringworm and inflammation of the hands or feet caused by exposure to cold. Fruit pulp is well known safe purgative. The pulp is effective in loss of sense of taste (Aguesia) due to excessive use of opium. A decoction of the pods is also used for pneumonia and common fever. The powdered seeds are a cure for intestinal amoebiosis. Root is useful in common colds. Inhaling smoke from the roots encourages nasal discharge. Root and bark are also useful in reducing fever.

Agrotechniques : It can be raised by direct sowing, planting out saplings or stump planting. The nursery raised saplings 15-30 cm tall are planted in pits 30 cm at the start of monsoon rains. These are spaced at 5x5 m. One light irrigation is required after transplantation of plant. After that one or two irrigations are required up to flowering. Weeding required regularly. Mature pods collected directly from the plant and dried in shade. Pulp sold @ Rs. 40/kg.

***Cassia occidentalis* Linn. (Caesalpiaceae)**



English	: Coffee senna
Sanskrit	: Kasamarda
Hindi	: Kasonda
Local	: Kesudo

Commonly occurring on waste lands after rainy season, it is an erect woody under shrub with furrowed smooth purplish stem. Leaves alternate 15-20 cm long. Leaflets are 3-5 pairs with a gland on petioles, opposite, membranous and lanceolate. Flower yellow in short few flowered racemes. Pod recurved, glabrous, compressed and transversally septate. Seeds are numerous, compressed, ovoid, smooth and shining dark olivegreen. Flowering and fruiting in August-January.

Part used : Whole plant

Usage : A decoction of plant treats dysentery and other stomach problems. Paste of leaves used both externally and internally to treat skin diseases like scabies, ringworms and itches. Hot decoction of leaves acts as anti-periodic. Poultice of leaves and flowers treat eczema. Externally seed paste is also applied to treat skin troubles. The roots are purgative and diuretic. Paste of root is effective in eczema, ringworm and other skin problems.

Agrotechniques : No proper agrotechniques are available though it is propagated by seeds.

Catharanthus roseus (L.) G. Don. (Apocyanaceae)



English	: Periwinkle
Sanskrit	: Rasna, Nityakalyani
Hindi	: Sada Bahar
Local	: Baramasi

An ornamental perennial herb with erect stem, flexible branches bearing leaves which are simple cauline, opposite, exstipulate, petiolate and glossy. Flower 2-3, in axillary cymes and in terminal clusters, white to pinkish purple. Fruit is a cylindrical follicle with many black seeds (two varieties var. *alba* white flowered and var. *roseus* pink coloured flowers). Flowering and fruiting almost through out the year.

Part used : Whole plant

Usage : Maximum concentrations of alkaloids like vincristine and vinblastin found in root bark particularly during flowering. All parts have hypoglycaemic properties and are used to treat diabetes. Plant infusion if gargled, is said to relieve sore throat and laryngities. Extract of leaves is applied as antidote to wasp stings. Decoction of stem and leaves is used for regulating menstruation, urine and kidney problem. Leaves are emetic and diaphoretic. The alkaloid vincristine derived from leaves is used for the treatment of acute leukaemia including lymphocytic leukaemia.

Agrotechniques : It can be raised directly by seeding in the field @ 2.5 kg/ha. ½ kg seeds are required to prepare plants in nursery. Plants should be transplanted after 60 days of sowing at 30 cm x 45 cm. One to three irrigations required, alongwith weeding. After 6 months of growth, the picking of leaves can be done and thereafter picking can be done every 3 months. The leaves should be dried in the shade. Roots should be harvested after 8-10 months. Leaves sold @ Rs. 100/kg.

Cissus quadrangularis Linn. (Vitaceae)

English	: Edible stemmed vine
Sanskrit	: Asthisamhara
Hindi	: Hadjod
Local	: Hadjod

A succulent, glabrous deciduous climber in gardens with distinct nodes and internodes. The stem is thick, quadrangular, ridged and dichotomously branched restricted at the nodes. Tendrils long and simple. Leaves thick coriaceous, broadly ovate smooth on both the surfaces. The flowers are in short cymes and the fruit is globose berry, 1- seeded and red when ripe. Flowering and fruiting in July to January

Part used : Stem

Usage : The plant is carminative, anthelmintic, aphrodisiac and stomachic. It is used in the treatment of gastro intestinal disorders and indigestion. Crushed stem is used as a poultice for bone setting. Soaked green gram ground to paste is mixed with paste of its one internode. This mixture is fried in butter and consumed for a week for early bone setting. It is also used to relieve burns, wounds and the bites of poisonous insects. The juice of stem is said to be beneficial in scurvy. The paste of fresh shoots/stem heals burns and wounds healing.

Agrotechniques : It can be propagated through stem cuttings.



***Citrullus colocynthis* (L.) Kuntze (Cucurbitaceae)**



English	:	Bitter apple
Sanskrit	:	Indravaaruni
Hindi	:	Indrayan
Local	:	Tumbo



Common on sandy tracts in the desertic zone, it is a perennial, tender climbing monoecious plant with 2-3 fid tendrils. Leaves are deeply 3-5 lobed and both male and female flowers are yellow. Fruit globular variegated dark green with yellowish blotches. When ripe it is filled with a dry spongy very bitter pulp. Seed compressed, pale brown and smooth. Flowering and fruiting throughout the year but maximum in rainy season.

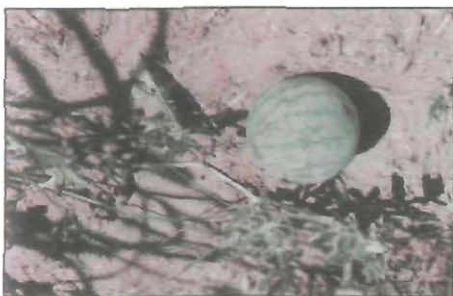
Part used : Fruit and Root

Usage : The fruit is bitter, pungent, cooling, purgative, antipyretic, anthelmintic and used for gaseous problem. In large doses it is toxic. 2-3 drops of root extract in the ear cures earache. Root powder is effective in jaundice, urinary diseases and rheumatism. Root extract is an antidote to scorpion bite. The commercial drug "colocynth" from dry pulp of fruit is cathartic. The inhalation of smoke of fruit kills the germs found in tooth. Poultice of fruit is applied on tumour and boils.

Agrotechniques : Sandy soil is suitable for cultivation. Sowing of seed should be done after first rain of June / July. Plants should be transplanted after one month of sowing. The distance amongst plants is kept 1 m and row to row 5 m. It is rainfed crop which should be weeded regularly. Crop matures after 90-150 days. After 20-25 days of harvesting, seeds should be separated from fruits. Seeds sold @ Rs. 30/kg. Roots sold @ Rs. 40/kg. Fruits sold @ Rs. 30/kg.



***Citrullus lanatus* (Thunb.) Mansf. (Cucurbitaceae)**



English	:	Watermelon
Hindi	:	Tarbooz
Local	:	Matira



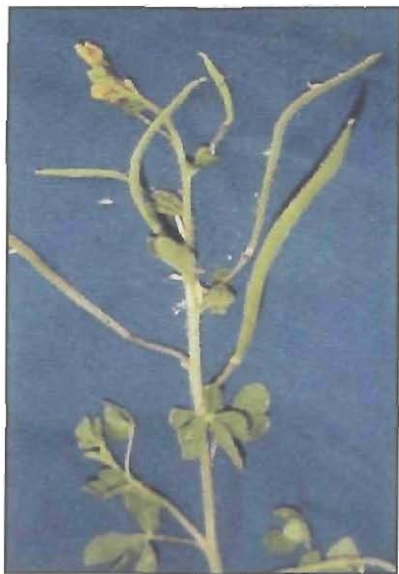
A climbing or trailing hispid annual cultivated in the warmer parts of the area. Stem densely hairy with bifid tendrils. Leaves triangular lobed and densely hairy. Male flowers in the axil of spoon shaped bracts and greenish yellow in colour. Female flowers on long peduncles and also yellow in colour. Fruit globose to ellipsoid, smooth, with dark green irregular bands or lines. Seed numerous, compressed, dark brown, black and white. Flowering and fruiting in August to December.

Part used : Fruit and Seed

Usage : Pulp is sweet, appetizer and refreshing with cooling effect. Fruit juice stored for one year is used as an antidote in snakebite. Seeds are diuretic. Seed powder is used during famine for preparation of bread.

Agrotechniques : Cultivated through seeds. Direct sowing of seed done in the field during rainy season. Irrigation not required. Ripe fruits are collected and used as such. Seeds also collected from the ripe fruits and dried in the sun light. Ripe fruits sold @ Rs. 5-10 / kg. Dried seeds sold @ Rs. 40/kg.

Cleome viscosa Linn. (Capparaceae)



English : Wild mustard, sticky cleome
Sanskrit : Adityabhakta
Hindi : Hulhul
Local : Bagro



A common weed in wastelands and croplands during rainy season. An erect glandular hairy annual herb with strong unpleasant odour. Stem grooved, pubescent with long and short glandular hairs. Leaves 3-5 foliate. Flower yellow in leafy racemes. Fruit is a glandular hairy cylindrical capsule tapering at both ends. Seeds are brown black and granular. Flowering and fruiting in July to October.

Part used : Whole plant

Usage: The paste of whole plant is applied externally to heal ulcers and wounds. The leaf juice in small quantity is used in fever, and as ear drop to reduce earache. The paste of leaves applied externally heals ulcers and wounds. The leaf extract has strong antifungal properties. The seeds are carminative, anthelmintic, effective in diarrhoea, kidney pain and liver disorders. The poultice of seed relieves chronic joint pains.

Agrotechniques : It is a wild plant, collected from the fields. No agrotechniques are available for propagation. Panchang sold @ Rs. 25/kg.

Clerodendrum phlomoides Linn. f. (Verbenaceae)



Sanskrit : Agnimantha
Hindi : Arni
Local : Arni



An erect bushy shrub on hummocky sands in the desert. It has pubescent, whitish grey quadrangular branches. Leaves ovate, rhomboid with crenate-dentate margins. Flowers white, 3-9 flowered arranged in a rounded terminal panicles, and fragrant. Fruit obovoid drupe and 4 lobed. Flowering and fruiting in October to March.

Part used: Root, Leaf and Seed

Usage : It is one of the important ingredient of the Ayurvedic formulation 'Dasamula'. Aromatic roots are acrid, astringent, cardio-tonic and carminative. Decoction of fresh root cures measles. Leaves bitter and their juice is effective in syphilis. Extract of leaves cures flatulence and leaf paste heals wounds. Decoction of leaves and poultice is used for curing piles. Infusion of leaves treats fever, colic and flatulence. Leaf paste is tide over stomach for reducing urinary inflammations. Seed powder is useful in the treatment of rheumatism.

Agrotechniques : Since it is collected from wild, its agrotechnique is not available. It can be propagated through seed/cuttings. Roots sold @ Rs. 25/kg.

***Cocculus hirsutus* (L.) Diels (Menispermaceae)**

English	: Broom creeper
Sanskrit	: Patalagarudi
Hindi	: Jamti ki bel
Local	: Bajar bel

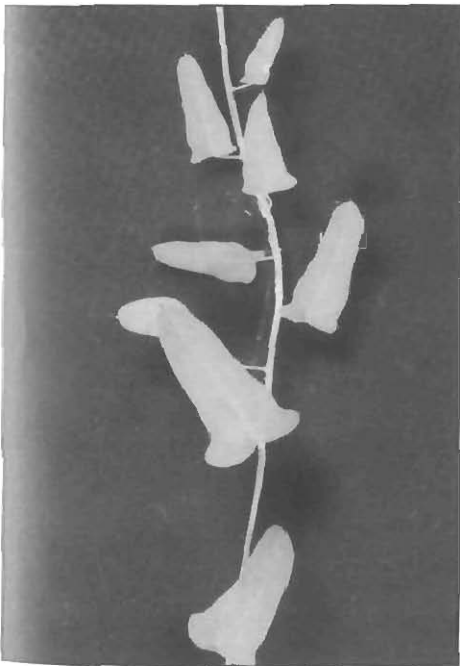
It is common among bushes and shrubs in wastelands in the desert area. A climbing, scandent shrub with pendulous branches. Stem, leaf and inflorescence densely covered with grayish hairs. Leaves variable in shapes subhastate to obtuse, subcordate at the base and villous on both surfaces. Flowers are monoecious, small and pale yellow. Fruit is a fleshy drupe and purplish black. Flowering and fruiting in September to April.

Part used : Leaf, Stem and Root

Usage : Leaves juice mixed with water forms a jelly like substance, a cooling medicine for gonorrhoea and externally for eczema. Paste of leaves applied on forehead and eyelids in the morning for cooling effect and headache. The decoction of leaves is used to cure leucorrhoea. Roots are used as tonic, diuretic and antiperiodic. Roots are used in chronic rheumatism and venereal diseases. The decoction of root is very effective in diarrhoea.

Agrotechniques : It is occurring abundantly in nature and directly collected from wild. Hence no agrotechniques have been standardized.

***Cocculus pendulus* (Forsk.) Diels (Menispermaceae)**



Hindi	: Parwatti
Local	: Pilwan

A climbing shrub occurring in drier parts of India mostly on *Prosopis cineraria*. Leaves ovate oblong hairy and very variable in shape and size. Flower in axillary fascicles. Male flower small hairy and greenish. Female flower 2-3 together. Fruit is a small drupe and keeled. Flowering and fruiting in October to January.

Part used : Root, Leaf and Fruit

Usage : Leaf sap mixed with water forms a green jelly, which is used externally for skin diseases. Leaf extract with cold water is applied on head for cooling effect. Juice of the leaf is beneficial in leucorrhoea. Decoction of leaf is used in kidney pains. Roots are bitter and are used in several local

medicines as an antidote to snakebite. It is also used in intermittent fever. Juice of ripe berries makes durable purple blue ink.

Agrotechniques : It is normally a weed and hence collected from nature. No specific agro techniques are available

***Commiphora wightii* (Arnott) Bhandari (Burseraceae)**



English : Indian bedellium tree
Sanskrit : Gugala
Hindi : Guggul
Local : Guggul



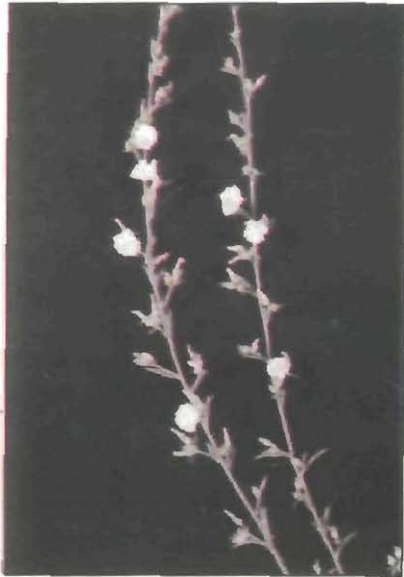
A much branched woody shrub on open dry hills and other rocky habitats, now also cultivated. Spirally crooked branches have white papery flaking bark. Leaves 1-3 foliolate, rhomboid, smooth and shining. Flower solitary, brownish red in colour. Fruit is an ovoid drupe and red in colour. Flowering and fruiting in January to May.

Part used : Stem and Gum resin

Usage : It is a source of Indian bedellium gum- a fragrant gum-resin obtained from stem. In local medicines it is used as an antiseptic on old wounds, as urine stimulant, in the treatment of ulcer and pyorrhea. The drug is also used as expectorant, carminative and demulcent. The smoke from the burning guggal is inhaled to cure bronchial infections. The powder of stem bark is used to cure leucorrhoea. The young branches are also used as tooth brushes. The gum resin is hypolipdaemic, hypocholesterolemic and anti-rheumatoid arthritis.

Agrotechniques : Propagated through cuttings/seeds. The saplings are planted in pits (50 x 50 x 50cm) filled with local soil and FYM (2: 1). Pre and post plantation irrigation, weeding and 3 to 4 waterings in first two years essential. The oleo gum resin is extracted by making circular incision on at least 3" thick stem, during February. The yellow sap that comes out dries up as 'guggal' of the trade. Gum resin sold @ Rs. 220/ kg.

***Convolvulus microphyllus* Sieb. ex Spreng. (Convolvulaceae)**



Sanskrit : Shankhpushpi
Hindi : Shank pushpi
Local : Santari



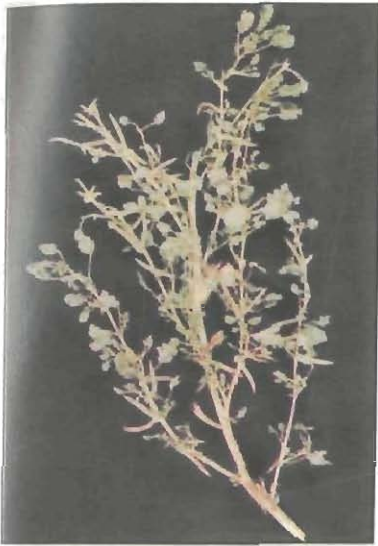
The plant is very common throughout the area on sandy habitats and cultivated fields. A branched procumbent or sub erect densely hairy herb. Leaves linear-oblong, mucronate and densely villous on both sides. Flower axillary, sessile, solitary, funnel shaped and pinkish white. Fruit a sub globose smooth capsule. Flowering and fruiting in August to December and some time upto March.

Part used : Whole plant

Usage : The whole plant is a source of an important drug in Ayurveda known as 'Shankhpushpi'. This drug is used as brain tonic and as a laxative. The whole herb is used medicinally in the form of decoction. The leaves and flowers posses hypotensive and antifungal properties.

Agrotechniques : Since it occurs as a common weed no systematic agrotechniques have been developed. Sold @ Rs. 30/kg.

***Corchorus depressus* (L.) Christensen (Tiliaceae)**



Sanskrit	:	Bhedani
Hindi	:	Bahuphali
Local	:	Cham gash



A very common species on open gravelly places, it is a woody perennial much branched and prostrate herb. Flowers small yellow on leaf opposed cymes directed upwards. Fruit is a capsule directed downwards, 4 valved and septate between the seeds. Flowering and fruiting is almost throughout the year

Part used : Whole plant

Usage : The whole plant, particularly the roots are used as a tonic and also in gonorrhoea. The powder of dried leaves mixed with a powder of seeds of *Pedalium murex* is used in the treatment of diabetes. The dried powder of leaves is used to cure impotency. The decoction of the fresh plant is used to cure dysentery and liver disorders. Powdered stem and young leaves gives cooling effect during heat.

Agrotechniques : It is a common weed hence agrotechniques have yet not been standardized. However, it can be propagated through seeds. Sold @ Rs. 30/kg.

***Crotalaria burhia* Buch. Ham. ex Benth. (Fabaceae)**



Sanskrit	:	Shudra Shana
Hindi	:	Jhamo, Khip
Local	:	Shinio

Occurring on croplands, fallowlands and grazinglands mostly on sandy places, it is much branched xerophytic under shrub with variable leaves. The lower leaves are larger and upper ones are smaller. Flowers are on terminal racemes and yellow in colour. Pods are ovoid, beaked and brownish, single seeded. Flowering and fruiting in August-January.

Part used : Whole plant

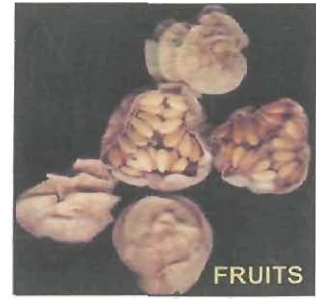
Usage : The extract of whole plant is used as expectorant. Paste of plant is externally applied over inflammation and rheumatic swellings, also used as on antidote to dog bite and scorpion bite. Roots boiled in water and its filtrate is taken as coolant. Paste of root is diuretic. Root decoction is taken in pneumonia and jaundice.

Agrotechniques : Not available but can be raised through seeds.

***Cucumis callosus* (Rottl.) Cong. (Cucurbitaceae)**



Sanskrit	:	Vishala
Hindi	:	Kachri
Local	:	Kachri



A much branched perennial, prostrate herb, common in sandy areas, mostly on fallow fields. Stem is angular with rough hispid hairs. Young part of stem is densely hairy with simple tendrils. Leaves 3-5 lobed have dentate margins and hairs on both sides. Male and female flowers are solitary and yellow in colour. Fruits obovoid, rounded, ellipsoid and variegated with green stripes consisting of white elongated seeds. Flowering and fruiting in August to November-December.

Part used : Fruit, Seed and Root

Usage : Ripe fruits are eaten as vegetable, dried fruits digestive. The decoction of root act as mild purgative. Seeds have cooling action and useful in bilious disorders.

Agrotechniques : Proper agrotechniques are not available though it can be propagated through seeds. Sold @ Rs. 60 / Kg.

***Cynodon dactylon* (L.) Pers. (Poaceae)**



English	:	Bermuda grass
Sanskrit	:	Duurva
Hindi	:	Doob
Local	:	Dhob

Cosmopolitan grass found at the margins of tanks, in fallow fields, wastelands and also grown in the lawns throughout the area. It is a perennial extensively creeping grass with adventitious and spreading roots. Leaves narrow short, subulate and flat. Flowers born on 2-6 spikes, green or purplish in colour. Spikes radiating from the top of peduncle. Grain turgid and oblong. Flowering and fruiting throughout the year.

Part used : Whole plant

Usage : In Ayurveda the whole herb is considered cooling, astringent, demulcent, ophthalmic and diuretic. Fresh juice of whole plant is useful in epistaxis, in vomiting and as an application in conjunctivitis. The paste of whole plant is used to get relief from burning sensation during urination. Paste is applied over eyes to cure eye pain and to minor cuts and wounds to checks bleeding. Decoction of root is used as diuretic and to cure skin diseases.

Agrotechniques : Rhizomes/stolons are transplanted during monsoonic rains in a well prepared field with enough farm yard manure. In 2-3 months period, it spreads in all directions to assumes gregariousness.

Cyperus rotundus Linn. (Cyperaceae)



English	:	Nut grass
Sanskrit	:	Musta
Hindi	:	Motha
Local	:	Motho



A cosmopolitan weed of damp habitats, it is a perennial stoloniferous glabrous sedge with globose, ovoid tubers. Leaves usually clustered at the base of stem. Inflorescence an umbel bearing 3-10 spikelets. Spikelets reddish brown, linear and variable in length. Achenes trigonous, brown black, shining and ellipsoid. Flowering and fruiting throughout the year.

Part used : Rhizomes (Tubers)

Usage : The dried tubers are aromatic and considered diuretic, carminative, anthelmintic, stomachic and stimulant. Powder of rhizome is effective in conjunctivitis. Paste of rhizomes applied externally heals wounds. The tubers yield an essential oil of antibiotic and cooling properties. The fresh tubers applied to nursing mother's breast promotes lactation.

Agrotechniques : As it is a weed of abundant occurrence, agrotechniques have not yet been developed. It is propagated by rhizomes. Roots sold @ Rs. 25/kg.



Datura metal Linn. (Solanaceae)

English	:	Devil's Trumpet
Sanskrit	:	Dhattura
Hindi	:	Kala dhatura
Local	:	Kalo daturo



Common in waste places, railway tracts and in village sides throughout the area. Datura is a sub glabrous spreading shrub 3-5 feet tall, branching at the top with dark purple stem. Leaves large, rhombic to ovate with irregular margins strongly tinged purple. Flowers are solitary, funnel shaped double or triple and whitish purple. Fruit is globose capsule bearing short to conical tubercles. It is 4-valved near the apex containing mass of closely packed, yellowish brown, compressed D-shaped seeds. Flowering and fruiting in September to January.

Part used : Whole plant

Usage : It relieves cardiac pains, distress, palpitation and aortic disorders. The dried leaves and seeds are used as antispasmodic and in critical condition of asthma and whooping cough. Smoke of burning leaves cures asthma. Fresh leaf juice relieves earache. Warmed leaves used externally to expel guinea worms. Fruit is a specific remedy for phlegmatic and bilious types of malarial fever. Paste of seed is useful in patchy baldness. The seeds are used to treat leucoderma, skin diseases, leprosy, bronchitis and ulcers. Paste of leaves and seed oil is used to reduce rheumatic pains. The root possess antipyretic and antiseptic properties.

Agrotechniques : Propagated through seeds. Sown in July and August in the field at 1x1m and irrigated at 10-15 days interval till the final harvest. Weeding and thinning is done when plants are 25-30 cm in height. Fully grown, green

***Echinops echinatus* Roxb. (Asteraceae)**



English	: Camel's Thistle
Sanskrit	: Kantalu, Unt Kantara
Hindi	: Bhangra
Local	: Unt Kantalo

Common in wasteland, grassland and open forest through out the area. It is much branched thistle like annual with pinnatifid spinescent leaves. Flower head is white or purple, compact, globose and spinous. Pappus small yellowish. Achenes densely villous. Flowering and fruiting in December-April.

Part used : Whole plant

Usage : Plant is diuretic, bitter tonic and used to treat cough, indigestion, eye problems and hysteria. Powdered roots are applied over wounds of cattle for early healing. Roots and seeds are aphrodisiac. Powdered roots applied to hair destroys lice. Root extract in water is given orally to treat cold and cough. In Ayurveda, root is reportedly used to facilitate child birth. Seeds have cooling effect.

Agrotechniques : It comes up naturally in agricultural fields and waste land hence no agrotechniques are available. However, it can be propagated through seeds

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



English	: Trailing Eclipta
Sanskrit	: Bhringaraja
Hindi	: Bhrangraj
Local	: Bhangra



Wet and marshy habitats of the desert area, support this small erect or prostrate, much branched, hairy annual herb often rooting at the nodes. Simple elliptic leaves, variable in shape, bright dark green in colour. Flower axillary or terminal, peduncled and white coloured. Seed small achene and black in colour. Flowering and fruiting almost through out the year in suitable habitats.

Part used : Whole plant

Usage : Plant juice improves the liver and spleen disorders. Decoction of herb is used to rinse hair to maintain the black colour. The roots and leaves of the plant also promote the flow of bile juice. The extract of the leaves is used in jaundice, fever and for new born babies suffering from catarrh.

Leaves fresh juice promotes growth of hair and stops the premature graying of hair. Leaves of the plant are useful in uterine hemorrhages. A paste of the leaves is also applied to chronic glandular swellings, skin diseases and to wounds as astringent. Leaf juice can be used for cleaning and healing of the sores. The juice of leaf is applied on scorpion bite portion as an antidote.

Agrotechniques : It is a weed and collected from nature. No specific agro techniques is available. It can be propagated through seeds/stem cuttings. Sold @ Rs. 30/kg.

***Emblica officinalis* Gaertn. (Euphorbiaceae)**



English : Indian Gooseberry
Sanskrit : Amalki
Hindi : Amla, Aonla
Local : Anwla



Common in forests, it is now extensively planted in orchards. A moderate sized deciduous tree. It has small very closely set long leaves. The branches of the tree appear feathery. Flower greenish yellow, minute unisexual born in dense axillary fascicles along the branches. Male flowers numerous and number of female flowers few. The fruits are fleshy, globose, pale green or yellowish, 6-lobed containing 6-trigonous seeds. Flowering in March and fruit setting in April and harvestable fruit available in November onwards.

Part used : Fruit, Seed, Leaf and Bark

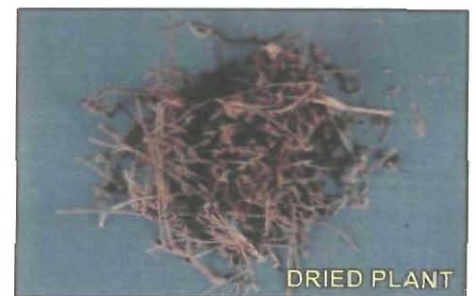
Usage : Fruits extensively used in digestive and other disorders, are a rich source of vitamin C. Fruit eaten raw or cooked is cooling, astringent, diuretic, refreshing and laxative. Effective in treatment of respiratory disorders like asthma, bronchitis. Fresh juice or dry powder of the fruit is used in diseases of heart, eye, rheumatism, scurvy, ageing and in diarrhoea, dysentery. Decoction of fruit shows hypoglycemic activity. Used also as hair tonic to prevent graying of hair and pigmentation. Leaves used to treat eye disease and chronic dysentery. Seeds used in treatment of asthma, bronchitis and to cure leucorrhoea and syphilis. "Triphala" and "Chavanprash" are prepared from the fruit. Flowers cooling and root bark astringent.

Agrotechniques : Seeds sown in nursery in February-March and planted in July-August in a 1m pit. Requires regular irrigation, weeding and FYM application. Grafting the mother plant with improved variety is commonly followed. Fresh fruit sold @ Rs 15/kg, Dried Fruit sold @Rs 35/kg.

***Ephedra foliata* Boiss. & Kotschy ex Boiss. (Gnetaceae)**



Hindi : Phok
Local : Lana, Suo phogaro



The only wild gymnosperm *Ephedra* in Western Rajasthan is a small climbing, dioecious shrub with many branched stems, minute leaves. Male flowers yellow greenish, 1-3 together on 1-2 cm long peduncle. Female flowers sessile and 2-3 in numbers. Fruit is globose, milky white semi transparent, fleshy and two seeded. Seed planoconvex, brown, glabrous acute at apex and rounded at the base. Flowering and fruiting in January to April.

Part used : Whole plant

Usage : The fruits are eaten by natives in the time of scarcity. It is a substitute of *E. gerardiana*. Extract of plant has ephedrine which is used in respiratory and heart diseases. It is also used in diphtheria and pneumonia. The dried powder or infusion is useful in acute rheumatism.

Agrotechniques : No specific agrotechnique available.

Euphorbia caducifolia Haines (Euphorbiaceae)



Sanskrit	:	Snuhi
Hindi	:	Thuar, Sehund
Local	:	Danda Thor

Common on rocky sites, and as hedge plant, it is succulent dendroid shrub with many jointed branches. Branches cylindrical erect bearing short, paired stipular thorns in 5-slightly spiral lines. Leaves alternate deciduous, clustered at the branches and ovate oblong. Flowers yellow, 3-7 together in short peduncled cymes. Fruit a capsule, deeply 3-lobed have 3 seeds in each locule. Flowering and fruiting in February to May.

Part used : Root and Latex

Usage : The milky latex of plant is used as an expectorant. It is used locally as rubefacient, digestive, abortifacient. It is effective in earache, enlargement of spleen and liver, cutaneous affections, inflammation, rheumatism, asthma and dysentery. Latex is externally applied to skin on blisters/wounds, to remove warts and an antidote to snake bite. Root decoction is an abortifacient, leaves eaten as vegetable.

Agrotechniques : No proper agrotechniques are available. It is vegetatively propagated through stump planting during February - March.

Euphorbia hirta Linn. (Euphorbiaceae)

English	:	Australian Asthma weed
Sanskrit	:	Dugdihika
Hindi	:	Lal Dudhi
Local	:	Dudhi dudheli



It is small annual leticiferous, erect herb common in damp places of open fields. Young stem is densely clothed with yellow hairs. Leaves are oblong lanceolate, opposite and hairy. Flowers reddish brown, small in axillary involucre. Fruit is a small capsule containing seeds. Seed light reddish brown. Flowering and fruiting almost throughout the year.

Part used : Whole plant

Usage : Effective in bronchial affections, cough, asthma and in de-warming. Whole plant water extract checks diarrhoea and gonorrhoea. The alcoholic extract of the whole plant is used in modern allopathic medicine.

The milky juice of the plant is useful in promoting hair growth, in the treatment of warts and cracking of skin. It should be applied externally on the affected area. Juice of the leaves is applied on burns and skin disorders. Leaves are crushed and applied as paste in pain on joints of hands and legs.

Agrotechniques : It is a common weed hence agrotechnique yet to be standardized. It can be propagated through seeds. Sold @ Rs. 60/kg.

***Evolvulus alsinoides* (L.) Linn. (Convolvulaceae)**



Sanskrit	:	Vishnukranta
Hindi	:	Shan Khahuli
Local	:	Phooli



Commonly occurs in association with other weeds in grassy habitats and drier parts of area. This perennial herb has prostrate hairy branches and small elliptic oblong to lanceolate, mucronate leaves. Flowers mostly solitary, light blue or white, rotate and broad funnel shaped. Fruit a globose, 4-seeded and 4-valved capsule. Seed smooth and black in colour. Flowering and fruiting in August to January.

Part used : Whole plant

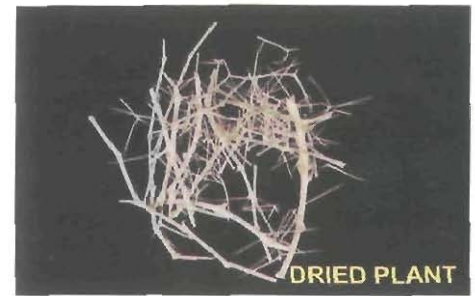
Usage : Decoction of whole plant effective in fever, debility, loss of memory and syphilis. It is also used as a brain tonic. Leaves smoked in chronic bronchitis and asthma. Flowers useful for treating the uterine bleeding. Roots are antidysentric and antiseptic used to treat gastric ulcers and intermittent fever. Seed oil promotes the growth of hairs.

Agrotechniques : It is a common weed hence agrotechnique yet to be standardized. It can however, be raised through seeds. Sold @ Rs. 30/kg.

***Fagonia indica* Burm. f. (Zygophyllaceae)**



Sanskrit	:	Dhanvayaasa
Hindi	:	Dhamasa
Local	:	Dhamaso



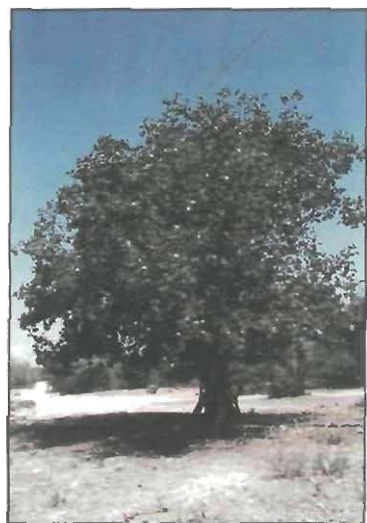
Common on sandy to gravelly habitats, this is a much branched annual palegreen under shrub. Leaves uni or trifoliolate with stipular spines. Flowers pinkish purple. Fruit hairy capsule rounded at base. Seed ovoid. Flowering and fruiting in September-February.

Part used : Whole plant

Usage : Decoction of the whole plant cures fever, smallpox, eczema and other skin diseases. Plant paste applied externally to abscesses and wounds. Powdered leaves and flowers are given in vomiting and diarrhoea. Decoction of leaves and twigs is blood purifier. Smoke from whole plant inhaled to treat asthmatic attack.

Agrotechniques : It is naturally occurring weed, hence directly collected from the nature. No agrotechniques are available. Sold @ Rs. 25/kg.

***Ficus religiosa* Linn. (Moraceae)**



English	: Sacred fig
Sanskrit	: Ashvatha pipala
Hindi	: Pipal
Local	: Pipali

Common in waste lands, planted along the roads, usually near temples as an avenue tree. Large deciduous tree with spreading branches and grayish white bark. Leaves broadly elliptic obovate, leathery with rounded base and narrow long apex. Fruits paired receptacles (figs) smooth, globose, black or purple when ripe. Flowering and fruiting in April to June.

Part used: Whole plant

Usage: Leaves useful in healing bruises, wounds and in the treatment of skin diseases. Warmed leaves smeared with oil/butter is tied over boils for early suppuration. Powdered leaves and tender shoots purgative. Infusion of leaves is highly effective in cardiac weakness. Stem bark is cooling, alterative and used in treatment of diabetes, diarrhoea, leucorrhoea and inflammatory ulcers. Decoction of bark used to wash the mouth to reduce the inflammation in gums. Fruits and seeds laxative. Fresh fruit juice is effective in treating cold, cough and fever. Dried leaves and fruit powder cures asthma. Roots useful for treating gout. Decoction of root used in fever after delivery and in stomach diseases. Latex applied externally for skin diseases.

Agrotechniques : Propagated through seeds and stem cuttings. Saplings raised in nursery are transplanted in 1m pit in July. Irrigation essential at least in first three years.

***Fumaria indica* (Haussk.) Pugsley (Fumariaceae)**



English	: Fumitory
Sanskrit	: Parpata
Hindi	: Pit papara
Local	: Pith papara



A common weed of garden and cultivated fields during winter season, it is a diffuse annual herb with glabrous stem. Leaves multifid segmented flat narrow, linear and glaucous. Flowers pale rose with purple tips, membranous and in terminal or leaf opposed racemes. Fruit globose and 1-seeded. Flowering and fruiting in November to February.

Part used : Whole plant

Usage : The plant is used as diuretic, laxative and an efficient liver tonic. It is also used in skin diseases and to purify blood. The dry plant is beneficial in jaundice and fever. The fresh juice of leaf is used in eye problems. The leaf paste is taken with water to increase the flow of urine in fever. The drug sold in the market as 'Pitpapro'.

Agrotechniques : It is abundant in wild hence, agrotechnique not standardized. It can however, be propagated through seeds. Sold @ Rs. 40/kg.

***Glycyrrhiza glabra* Linn. (Fabaceae)**



English	: Liquorice
Sanskrit	: Yashti Madhu
Hindi	: Mulhati
Local	: Mulathi



Commercially cultivated as crop in semi arid regions now becoming popular in arid zone. A perennial highly branched herb with under ground stem. Leaves alternate, pinnate with 8-15 ovate, yellow green, hairy leaflets. Flower purple in terminal axillary leaves. Fruit 2-2.5 cm flat pod with 4-5 kidney shaped seeds.

Part used : Rhizome and Root

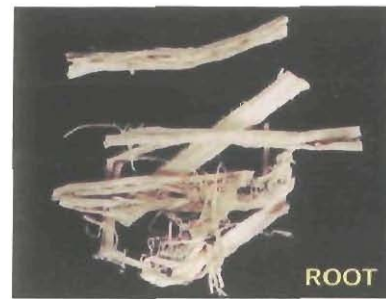
Usage : Rhizomes and roots tonic, expectorant, demulcent and laxative. Used for treating gastric ulcers, cough, sore throat, myopia, irritation in urinary tract and mouth disorders. Infusion of root relieves chronic joint problems. Root paste is effective in initial stages of baldness, hair loss and dandruff.

Agrotechniques : Propagated through root cuttings treated with seradex B and planted directly in field at 90x60 cm in July. FYM application, irrigation and weeding essential. After 2-2.5 years, roots are dug out, dried to have up to 10% moisture. Roots sold @ Rs 50/kg.

***Grewia tenax* (Forsk.) Fiori (Tiliaceae)**



Sanskrit	: Nagabala
Hindi	: Gondni
Local	: Gangren



Most common shrub growing amongst *Euphorbia* bushes on the rocky gravelly wastelands and forests of the area. Leaves broadly ovate and coarsely dentate. Flowers in leaf opposed short contracted branches and white coloured. Fruit a drupe, deep orange yellow when ripe. Flowering and fruiting in August to October, September to December.

Part used : Stem and Root bark

Usage : Stem bark decoction is effective in cough and muscular pain. Mucilage of the bark is used in the treatment of tuberculosis in hilly areas. Fruits eaten by villagers to quench thirst during summer season. It has cooling effect. Decoction of fruit is used to cure asthma, cough and urinary problems.

Agrotechniques : Abundant in wild hence agrotechniques yet to be standardized. It can be grown through seeds. Roots sold @ Rs. 40/kg.

***Hibiscus rosa-sinensis* Linn. (Malvaceae)**



English : Shoe Flower, China Rose
Sanskrit : Japa
Hindi : Gurhal
Local : Gurhal



Commonly planted as an ornamental in the gardens, evergreen shrub with ovate and glabrous leaves. Flowers solitary, axillary and red to orange red coloured.

Part used: Leaf and Flower

Usage : Cold infusion of leaves and flowers used for syphilis treatment. Decoction of flowers given in bronchial catarrh and infusion in fever. Flowers and leaves yield a dye used for blackening hairs, for treatment of alopecia and burning sensation of body. Good coolant and tonic for heart and purifies blood. Dried powdered leaves aphrodisiac, diuretic, demulcent, refrigerant and emmenagogue. Fresh root juice is given for gonorrhoea and powdered root for menorrhagia.

Agrotechniques : Propagated by shoot cuttings, during February March. Saplings transplanted in July August in a pit .5x.5x.5 m. FYM, irrigation and weeding essential in first 2-3 years, at regular intervals. Dried flower sold @Rs. 80/kg.

***Holarrhina antidysentrica* (L.) Wall. (Apocyanaceae)**



English : Conessi tree
Sanskrit : Kutaja
Hindi : Kurchi
Local : Kadwa Indarjau



Very hardy species commonly found on deforested sites, also cultivated as an avenue tree and for reforestation of degraded lands. A small tree with rough pale greenish bark. Leaves opposite, elliptic or ovate oblong, pubescent. Flowers white, fragrant in terminal corymbose cymes. Fruits cylindrical follicles 15-40 cm long. Seeds 25-30 in numbers, light brown in colour. Flowering and fruiting in May to September.

Part used : Root, Stem and Seed

Usage : Root stem bark and seeds are being used to treat chronic dysentery diarrhoea, liver ailments, uterine discharge, fever, to remove worms from intestine and colic pains. Decoction of stem bark used to treat chronic bronchitis, boils and ulcers. Flowers eaten as cooked vegetable to relieve cough and cold. Stem paste is applied as an antidote to snake bite poisoning. The twigs are used as tooth brush for treatment of pyorrhoea.

Agrotechniques : Propagated by seeds. Seed sold @ Rs. 120 /kg.

***Indigofera tinnaei* Ali (Fabaceae)**



Sanskrit	:	Vasuka
Hindi	:	Latahai
Local	:	Bekario

It is a prostrate much branched grey pubescent annual herb in dry and barren habitats with a woody root stock. Leaves are 7-9 foliolate and densely covered with white hairs. Flower pinkish red, small, 10-20 in axillary racemes. Fruit is a cylindrical pod and consist of 2 ovoid, globose seeds. Flowering and fruiting in September to December.

Part used : Whole plant

Usage : The decoction of whole plant is used in epilepsy. The juice of plant is diuretic, alternative and is also used to treat chronic venereal diseases. The leaf juice is used as an eye drop to cure migranc. Seed powder with milk is taken as a tonic for general health.

Agrotechniques : It is a common weed hence agrotechniques have yet to be developed. Seed sold @ Rs. 30/kg.

***Jatropha curcas* Linn. (Euphorbiaceae)**



English	:	Physic nut
Sanskrit	:	Dravanti, Sthula-eranda
Hindi	:	Safed Arand, Ratanjot
Local	:	Jamal Ghota



It is common in village hedges and fencing, now being cultivated for its seeds. A small soft wooded tall shrub with 3-5 angled ovate and cordate leaves. Flowers are greenish yellow. Fruit is a globose ovoid capsule. Seed ovoid, oblong and dull brownish black. Flowering and fruiting in most part of the year.

Part used : Leaf, Stem, Seed and Fruit

Usage : In Ayurveda the fruit and seed are considered astringent and useful for treating chronic dysentery, anemia and fistula. Leaf juice has insecticidal properties and applied externally over tumors, piles and scabies. Decoction of the bark is given for rheumatism and leprosy. Tender twigs, as toothbrush strengthen the gums. Fresh latex from stem is useful in the treatment of pyorrhea, bleeding gums, gingivitis and also for treating scabies, eczema and ringworms. Seed oil is used as cleansing agent for wounds and sores. Its oil now known as biodiesel.

Agrotechniques : Propagated through seeds/cuttings, planted at 3 x 3 m distance and for single row plantation spacing should be 2 x 2 m. The pit size should be 0.30m . Fertilizer application @ 250 gms. per plant having N.P.K. (15:15:15) should be repeated at the start of rainy season every year from 2nd year onwards. 3 Seeds should be sown in each pit. But by the end of August only one healthy plant to be retained. In 4th year plant is expected to be ready to produce seeds. From 5th year onwards the seed production start increasing, which stabilizes from 7th year onwards. One or two irrigation and weeding is required after rainy season. After drying the fruits in shades, the seeds should be collected. Yield stabilizes at 700 kg/ha in fifth year onwards. Seed sold @ Rs. 50/kg.

Lawsonia inermis Linn. (Lytheraceae)



English	:	Henna
Sanskrit	:	Mendika
Hindi	:	Mehndi
Local	:	Mehndi



Cultivated as hedge plant in the gardens and also as a commercial dye crop in the area. A much branched shrub or small tree. Leaves opposite, sessile, lanceolate with entire margins. It has small white or pinkish fragrant flowers in large terminal branches. Fruits are small, rounded and purplish green to brownish, containing numerous seeds. Flowering and fruiting in August to December.

Part used : Bark, Leaf, Flower and Seed

Usage : In Ayurveda, leaves are used to treat leucoderma. Paste of leaves applied over eyelids to cure conjunctivitis. Leaf paste applied on soles relieves burning sensation. This paste is also beneficial in the treatment of prickly heat, skin problems like boils, burn, rheumatic joints, bruises and inflammatory swellings. Henna also helps in the treatment of baldness. The decoction of leaves is used as a gargle in sore throat.

Bark of plant is useful in treatment of jaundice and liver enlargement. Flowers cure headache caused by heat of the sun. Powder of seed is very effective in treatment of dysentery and is used as an antifertility agent. Henna as a colouring agent, it is mixed with other natural dyes to make a hair dye and even for textiles.

Agrotechniques : Seed sown in the month of March-April. Saplings transplanted in the field at 30 x 30 cm spacing in the month of August. It can also be grown easily from stem cuttings. One or two irrigation and weeding required after rainy season. The leaves are cut in the month of March-April and should dry in the shade so as to retain green color of leaves. Dried leaves powder sold in market @ Rs. 80/kg.

Majorana hortensis Moench (Lamiaceae)



English	:	Sweet Majoram
Sanskrit	:	Maruttak, Maru
Hindi	:	Murwa
Local	:	Marwa



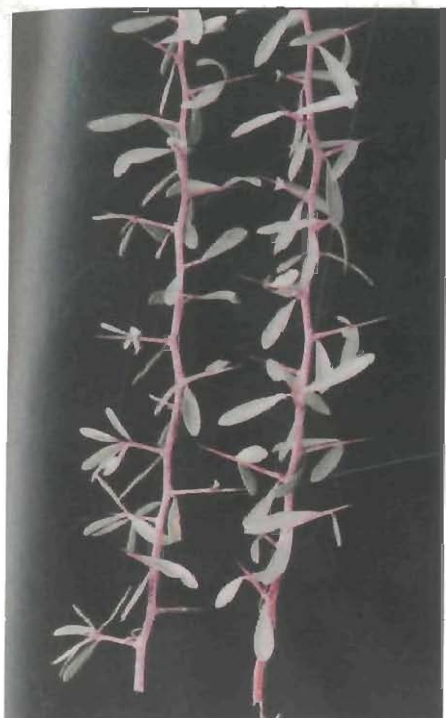
A pot aromatic herb in the garden, houses and religious places, it is 30 cm high. Leaves small, hairy on both sides. Flowers are in small-branched heads pale white or purplish. Flowering and fruiting in August to March.

Part used : Whole plant

Usage : Majorana is stimulant and tonic. The herb helps in asthma and common cold. Its flowers and seeds are useful in arresting secretion or bleeding. Seed oil is carminative, diuretic, diaphoretic and emmenagogue. Oil from the leaves and seeds is used as external application for sprains, bruises, stiff and paralytic limbs. Seeds soaked in water and taken with some sugar has cooling effect. Dried leaves also used as carminative and stimulant.

Agrotechniques : No specific agrotechnique is available. It can be propagated through seeds. Seeds sold @Rs. 60/kg

***Maytenus emarginata* (Willd.) Ding Hau (Celastraceae)**



English	:	Thorny staff tree
Sanskrit	:	Vikankala
Hindi	:	Baikal
Local	:	Kankero

Common on waste lands on low hills, it is a small tree with white bark, often spiny. Axillary spines are born at a node. Leaves are thick and ovate. Flowers white, born on stem and spines giving appearance of dichasial cyme. Fruits are globose bilocular and purple coloured. Flowering and fruiting in November to February.

Part used : Leaf and Fruit

Usage : An ointment prepared by mixing burnt leaves ash and butter heals the wounds. Leaf juice is taken for treating jaundice and other liver disorders. Paste of leaves is anti-inflammatory. The fruits are sweet, digestible, cooling and blood purifying. They are used to treat ulcers, piles and corneal opacities.

Agrotechniques : It commonly occurs in scrublands and agrotechniques are yet to be standardized. It can be grown by the stem cuttings. Leaves sold @ Rs. 50/kg.

***Mimosa pudica* Linn. (Mimosaceae)**



English	:	Sensitive plant, Touch me not
Sanskrit	:	Lajjalu
Hindi	:	Lajwanti
Local	:	Lajwanti



Grows as a weed in damp waste places and cultivated in the gardens. A diffuse spreading prickly undershrub with long brittle bristles and small thorns on its stem and branches. The sensitive leaves are bipinnate; pinnae 1-2 pairs. The flowers are mauve to pink and globose. Fruit slightly recurved, straw coloured pod. Flowering and fruiting throughout the year.

Part used : Whole plant

Usage : Extract of whole plant heals cuts and wounds. Infusion of leaves and decoction of roots is useful in piles and fistula. Leaf paste is used in glandular swellings. Leaf juice is applied over sores, fistula and hemorrhoids. Decoction of roots is also used in treating urinary infections.

Agrotechnique : Yet to be standardized though can be multiplied from seed and through stem cuttings. Seed sold @ Rs. 100/kg.

***Mollugo cerviana* (L.) Seringe (Molluginaceae)**



English	:	Tel, Tam
Hindi	:	Parpat
Local	:	Chirio ro khet

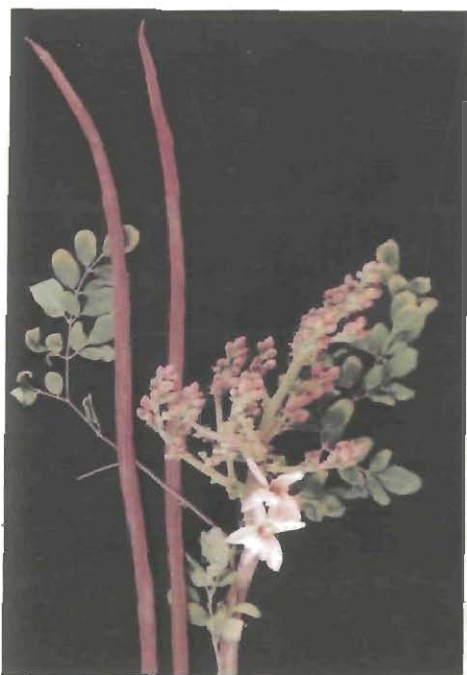
Common weed in dry and sandy habitats, waste lands and cultivated fields. An erect slender annual herb with slender stems, thickened nodes and umbellate branches. Leaves sessile in dense whorls at each node. Flowers on stiff filiform pedicels, usually in groups of 3-4. Fruit is a rounded capsule containing numerous smooth yellowish brown seed. Flowering and fruiting in September to November.

Part used : Whole plant

Usage : An antiseptic and stomachic. An infusion of plant is used in fevers and for promoting lochial discharges and blood purification. Oil prepared by boiling the roots in any edible oil applied externally for gout and rheumatism. Seed boiled in water and filtrate is taken orally to keep body cool during summer.

Agrotechniques : Not available, can be grown easily from seed.

***Moringa oleifera* Lamk. (Moringaceae)**



English	:	Drumstick tree
Sanskrit	:	Shigru
Hindi	:	Sahjan
Local	:	Sanjana

It is a small or medium sized tree occurring near the houses, gardens and roadsides. Leaves are usually 3-pinnate, and leaflets opposite, elliptic, ovate or obovate. Flowers are white and scented. Fruit is a pendulous capsule, triquetrous with 9 ribs. Seeds are trigonous and winged. Flowering and fruiting throughout the year.

Part used : Whole plant

Usage : Effective in ascites, rheumatism and circulatory stimulant, liver disorder, and also cardiac stimulant. Leaves, flowers and unripe pods are eaten as vegetables. A paste of leaves heals wounds. Leaves are anti-inflammatory, anodyne and anthelmintic. Flowers are used as tonic and diuretic. Seed oil is applied externally in rheumatism and gout. A decoction

of root is used as a gargle. An infusion of root is used to treat asthma, gout, rheumatism and swellings. The root and root bark paste is applied locally to cure inflammatory swellings. The fresh roots are used as stimulant to treat epilepsy, paralytic affections and as a cardiac and circulatory tonic.

Agrotechniques : It can be easily propagated through seeds or stem cuttings, in rainy season. Fortnightly irrigation and weeding essential in the first year. Fruits yield 10-25 kg/ plant. Fruit sold @ Rs. 10-20/kg; Bark sold @ Rs. 50/kg.

***Mucuna pruriens* (L.) DC. (Fabaceae)**



English : Cowhage, common cowitch
Sanskrit : Kapikachhu
Hindi : Kiwach
Local : Kanch



A large woody annual climber with white hairs, occurring in bushes, in open forests and wastelands in hilly area. Leaves are trifoliolate, rhomboid, ovate and glabrous. Flowers solitary, or 2-3 together with dark purple colour. Fruit is a slightly curved pod covered with stinging hairs. Seeds are oblong and white in colour. Flowering and fruiting in August-October-November.

Part used : Pod, Seed, Leaf and Root

Usage : Leaf paste applied externally promotes healing of ulcer and boils. Seeds are nerve tonic and effective in leucorrhoea and paralysis. Hairs of the pod are used for removing round worms. Seeds and hairs are considered a powerful aphrodisiac in Ayurvedic medicine. Roots are tonic, nerve stimulant, diuretic and purgative. A paste of root is used externally to treat dropsy.

Agrotechniques : Seed sown during the month of May-June in polybags and saplings transplanted after soaking rains in the field. Irrigation at 30 to 45 days interval is needed. Mature pods collected for seeds in November-December and roots in the last week of January and should be air dried. Seeds sold @ Rs. 25/kg.

***Murraya koenigii* (L.) Spreng. (Rutaceae)**



English : Curry leaf tree
Sanskrit : Surabhininiba
Hindi : Mitha neem
Local : Mitha neemra

Cultivated extensively for its aromatic leaves, it is a small tree upto 5-6 meters in height. The leaves are slightly bitter and aromatic. Leaves pinnately compound, crowded on the ends of branchlets, leaflets 10-25, ovate lanceolate with an oblique base. Flower white in terminal clusters. Fruit ovoid to subglobose berries wrinkled purplish black when ripe, 2 seeded. Flowering and fruiting between February to August depending on locality.

Part used : Root, Bark, Fruit and Leaf

Usage : A herbal tonic, leaves are used as a mild laxative in diarrhea, dysentery and piles. It also cures diabetes. Curry leaves prevent premature graying of hair and delays development of cataract. Paste of leaves applied externally to cure skin eruptions and to relieve burns. Bark of tree is useful in bilious vomiting. Juice of root relieves pain associated with the kidneys. Juice of berries mixed with equal proportion of lime juice is effective for external application in insect stings and bites of poisonous creatures.

Agrotechniques : Propagated through stem cuttings/seeds.

***Neurada procumbens* Linn. (Rosaceae)**



Local : Chapari

A woody tementose, densely woody herb commonly found on sand dunes of western Rajasthan. Leaves are densely hairy on both surface. Flowers white solitary and born in the axil. Fruit is softly spiny, flat and compressed. Flowering and fruiting in October to December.

Part used : Whole plant

Usage : One tea spoon dried powder of the whole plant is given with fresh goat's milk early in the morning to the patient who is suffering from heat stroke during summer season. It is also a good tonic.

Agrotechniques : Not available, can be grown from seeds.

***Nyctanthes arbor-tristis* Linn. (Oleaceae)**



English : Tree of sorrow,
Night flowering Jasmine
Sanskrit : Paarijaata
Hindi : Haar singar
Local : Haar singar



Abundant in forests, on dry hills sides, rocky terrain and also cultivated in the gardens for its flowers. It is a large shrub or small tree with quadrangular drooping branches. Leaves are long ovate, opposite and densely pubescent. Flowers tubular, fragrant, small white with orange center are arranged in cymes. Fruit is a compressed, 2-locular capsule with two seeds. Flowering and fruiting in August to January.

Part used : Whole plant

Usage : The leaves, bark and inflorescence are used medicinally. Leaves are antibilous, expectorant and are useful for treating fever and rheumatism. Leaf paste is used as an external application to treat ringworm, scabies and eczema. Decoction of leaves effective in sciatica and malaria. In case of internal injury, bark is mixed with *Terminalia arjuna* and paste is rubbed over that part of body. It is also believed to set the broken bones. Inflorescence and young fruits are pounded in water and given to relieve cough. Seeds are useful in treating baldness and affection of scalp.

Agrotechniques : It can be grown through seeds and stem cuttings but its agrotechnique are yet to be standardized. Leaves sold @ Rs. 50/kg.; Flowers sold @ Rs. 700/kg.

***Ocimum americanum* Linn. (Lamiaceae)**



English	:	Hoary basil
Sanskrit	:	Arjaka
Hindi	:	Vantulsi, Sabzah
Local	:	Bapji, Rantulsi



An erect much branched pubescent strongly sweet scented herb abundant near moist places. Stem and branches are green or some times purplish. Leaves elliptic lanceolate tapering at both ends, shallowly toothed or entire. Flowers are born in less closely whorls and white coloured. Fruit ellipsoid black, smooth nutlets, mucilaginous when wetted. Flowering and fruiting almost through out the year.

Part used : Whole plant

Usage : Plant is considered stomachic, anthelmintic and antipyretic. In Unani medicine it is considered diuretic and emmenagogue and is used to treat diseases of the heart and brain. Plant juice is useful for treating toothache, earache and headache. Decoction of plant is taken internally to provide relief in cough and fever. Leaves widely used for flavouring soups and sauces and are considered diuretic and tonic. Leaf paste is used externally for treating skin diseases. Seeds are useful in malaria fever and also used in the preparation of cooling drink.

Agrotechniques : It can be propagated through seeds and vegetative methods. Leaves sold @ Rs. 30/kg.

***Ocimum sanctum* Linn. (Lamiaceae)**



English	:	Holy basil
Sanskrit	:	Ramtulasi
Hindi	:	Tulsi, Kala tulsi
Local	:	Tulsi

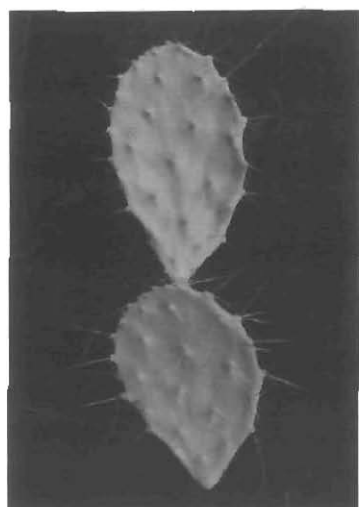
Common wild plant all over the area and planted in the garden, temples and homes as pot herb. It is much branched erect, stout and strongly aromatic perennial hairy shrub. Leaves are obovate smooth and purplish pink. Flowers are small purplish born in close whorled racemes. Fruit is minute sub globose dry nutlets enclosed in the enlarged membranous calyx. The seeds are small and yellowish brown or reddish in colour. Flowering and fruiting through out the year.

Part used : Whole plant

Usage : A decoction of leaves is an effective remedy for bronchitis, asthma, cough, cold, fever, sore throat, and neuralgia. Juice of the leaves with honey is used in the treatment of kidney stone and for expelling intestinal worms. Juice is also beneficial in the treatment of skin diseases, eye disorder, earache, and in insect bite. Leaves are also quite effective for ulcer and infection in the mouth. Dried leaves powder mixed with mustard oil good for pyorrhoea. Leaves paste in curd is used for the treatment of cancer. Root decoction is diaphoretic in treatment of malarial fever. A paste of fresh leaves applied on boils, mosquito bites and urticaria. Cold infusion of seeds is useful in dysentery, constipation and other stomach problems. The seed oil possesses antibacterial and insecticidal property, hence acts as mosquito replant.

Agrotechniques : Grows well in the sandy loam soil. Saplings are raised in nursery in April-June and after rains transplanted at a distance of 40x40 cm. Irrigation and weeding at 15 days interval. Leaves cut after 3 to 4 months and dried in shade. 2 cuttings of leaves can be taken in the year. Seeds are also collected from dried inflorescence. Leaves sold @ Rs. 24/kg and seed sold @ Rs. 500/kg.

***Opuntia elatior* (Willd.) Mill. (Cactaceae)**



English	:	Prickly pear
Sanskrit	:	Kanthari
Hindi	:	Nagphani
Local	:	Hatha Thor

A large succulent jointed branched, perennial shrub common in waste lands and degraded lands. Joints erect flat, obovate with many areoles having curved, yellowish spines. Flower yellow. Fruit red, fleshy, pear shaped marked with areoles, deep reddish when ripe. Flowering and fruiting in April to August.

Part used : Phylloclade and Fruit

Usage : Pulp of ripe fruit eaten to cure burning sensation in the stomach. Fruits is considered cooling and useful in gonorrhoea. Baked fruit used in whooping cough. Mashed phylloclade is used as poultice to reduce inflammation. Pulp also applied in ophthalmia. Fleshy phylloclade warmed slightly and tides over wounds and boils to get relief. It is also used to hasten suppuration of tumor and burns.

Agrotechniques : Propagated vegetatively through phylloclade.

***Pedalium murex* Linn. (Pedaliaceae)**



English	:	Caltrops
Sanskrit	:	Brihatgokshura
Hindi	:	Bara Gokhru
Local	:	Gokhru Kanti



Naturalized in waste lands and ruderal during rainy season, it is a much branched erect annual succulent herb with yellowish orange woody roots. It has simple, opposite, fleshy elliptic obovate leaves with crenate-serrate margins. Flower yellow solitary axillary. Fruit is pyramidal ovoid, 4-angled with short sharp conical, horizontal spines. Seed pendulous, elongate, elliptic and 3 angled. Flowering and fruiting in August to October

Part used : Whole plant

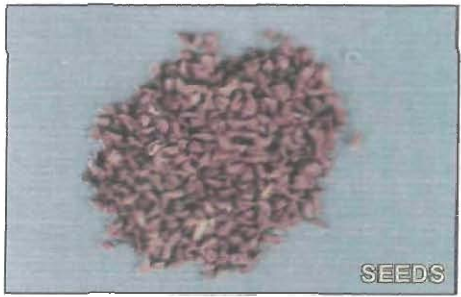
Usage : Its cold water infusion is demulcent, diuretic and cures urinary disorders. Leaves heal ulcers. Fruits aphrodisiac and given as a decoction for incontinence of urine, spermatorrhoea and impotency. Juice of fruit is used in puerperal disease and promotes lochical discharge. Decoction of roots is antibilious.

Agrotechniques : Seed sown in July or after first rain. It grows well in sandy loam soil. Plant to plant and line to line distance 50 to 50 cm. Irrigation normally not needed but given at 2-3 weeks interval if rains fail. Weeding should be done after 15-20 days of sowing. Fruits collected in the month of September and dried in the shade. Fruit sold @ Rs. 50-65/kg.

***Peganum harmala* Linn. (Zygophyllaceae)**



English	: Wild rye
Hindi	: Harmal
Local	: Hamal, Gandhiyo



It is a branched perennial shrub restricted on the margin of saline water bodies or on calcareous water logged soils. Stem dichotomously branched, sulcate. Leaves are divided into several narrow segments up to 5-8 cm. long. Flower appear single from the axil of the leaves, pedicillate and white in colour. Fruit a globose capsule, 3-valved and deeply lobed. Seeds many angled with reticulated seed coat. Flowering and fruiting through out the year.

Part used : Whole plant

Usage : It has narcotic, emetic and anthelmintic properties. Smoke of whole plant relieves toothache and also useful in asthma. It is used in the treatment of jaundice, fever, colic pains, hysteria and rheumatism, stimulates central nervous system. Also a dye plant. Powdered roots mixed in mustard oil to kill lice in hair. Plants kept in room to repel mosquitoes. Seeds constitute the drug 'harmal'.

Agrotechniques : Since it is collected from the wild, no agrotechniques are available as yet. However can be grown in rainy season on slightly saline soils at 0.5x0.5 m spacing. Watering and weeding at 3 weeks interval. Mature seeds and whole plant collected in December to January and should be dried in the sun. Seeds sold @ Rs. 400/kg; Dry plant sold @ Rs. 40/kg.

***Pergularia daemia* (Forsk) Chiov. (Asclepiadaceae)**



English	: Pergularia
Sanskrit	: Uttaramarini, Yugmaphala
Hindi	: Utran, Dudhi bel
Local	: Gadariari Bel

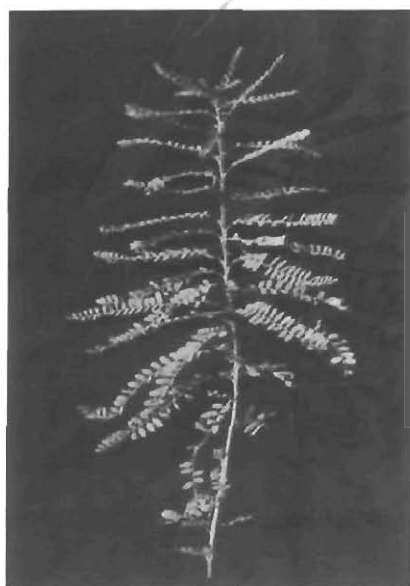
A hairy perennial twining climber common in field hedges through out the arid area. Plant has milky juice. Leaves membranous, opposite, deeply cordate, pubescent with acute apex. Flowers greenish yellow or dull white in axillary long peduncled dropping clusters. Fruits are follicles. Follicles lanceolate, echinate, consist of pubescent, broadly ovate seeds. Flowering and fruiting in August to December.

Part used : Whole plant

Usage : Plant extract is used for treating uterine and menstrual troubles. Leaf juice is used in diarrhoea, asthma and catarrhal affection. Externally it is applied to rheumatic swellings. Decoction of leaves is also given to relieve asthma. Paste of leaves also applied as a poultice to relieve carbuncles. Leaf juice and root bark is also used as purgative and anthelmintic.

Agrotechniques : Not available.

Phyllanthus amarus Schum. & Thonn. (Euphorbiaceae)



Sanskrit	: Bhuumyamalaki
Hindi	: Jarmala
Local	: Gugario

It is an erect annual herb with smooth, terete stem in open sandy moist places, gardens and cultivated fields. Leaves are elliptic, oblong and membranous. Male and female flowers are on different pedicels. Fruit is a capsule, trigonous. Flowering and fruiting throughout the year but profusely during rains.

Part used : Whole plant

Usage : Extract of the whole plant is used for the treatment of jaundice. The paste of plant is used for the treatment of cuts and boils.

Agrotechniques : It occurs abundantly in nature and directly collected from the wild. Hence no agrotechniques are available. It can be grown through seeds.

Phyllanthus fraternus Linn. (Euphorbiaceae)

Sanskrit	: Bhumyamalki
Hindi	: Bhuiamal
Local	: Hazardana



An annual erect, glabrous herb common in open sandy wastes and gardens. Stem angular, often branched at the base. Leaves sessile, elliptic oblong with rounded apex. Flowers axillary yellowish and numerous. The male flowers 1-3 and female flower solitary. Fruit is trigonous smooth capsule. Seed trigonous, pale brown and longitudinally ribbed. Flowering and fruiting in August to November.

Part used : Whole plant

Usage : It is astringent, diuretic, febrifuge, antiseptic and used for stomach trouble. In Ayurveda it is the source of drug 'Tamalaki' a reputed remedy for jaundice. Whole plant extract is used in viral hepatitis and as a diuretic in oedema. It also increases appetite and locally applied to reduce inflammations. Whole pounded plant is used as a poultice for ulcers, sores, swellings and skin affections. Latex is applied for early healing of sores and ulcers.

Agrotechniques : No specific agrotechniques available though it can be propagated through seeds.

***Plantago ovata* Forsk. (Plantaginaceae)**

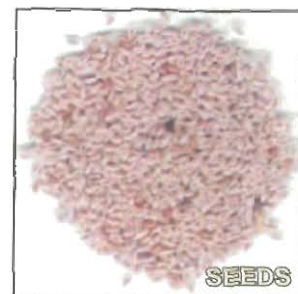


English : Bland Psyllium

Sanskrit : Ishad gola

Hindi : Isubgol

Local : Isabgol



Commonly cultivated for seed husk. A small annual herb covered with dense or soft hairs. Leaves narrow, rosette, linear 2-10 cm long. Flower small in oval or cylindrical thick spikes. Fruit 2-seeded capsule, ellipsoid and membranous. Seeds enclosed in a thin white translucent membrane called husk. Flowering and fruiting in January to March.

Part used : Seed, Husk

Usage : Dried seeds and husk constitute the drug used in chronic constipation, dysentery, diarrhoea and inflammatory conditions of intestine. It is a safe laxative, promotes regular bowel movement, also effective in treatment of piles and gonorrhoea. Poultice of seeds applied externally to get relief from rheumatic pains.

Agrogechiques : Well drained sandy soil mixed with adequate FYM (15T/ha) and BHC is prepared well and seeds broadcast in October to have plants in rows 22-25 cm apart. Irrigated at monthly intervals and weeding essential. Seeds harvested after 4 months. Seed Sold @ Rs 35/kg. The seed husk is separated and sold at higher price @ 120/kg.

***Portulaca oleracea* Linn. (Portulacaceae)**



English : Common purslane

Sanskrit : Lonika

Hindi : Khursa

Local : Luni, Kulfo

Common weed in cultivated fields, sandy riverbeds, gardens and also cultivated as vegetable. A succulent, erect annual with green stem swollen at the nodes. Branches radially spreading or prostrate with fleshy leaves. Flower bright yellow. Capsule obovoid with many reniform black seeds. Flowering and fruiting in June to August.

Part used : Whole plant

Usage : Eaten as vegetable for the treatment of scurvy and diseases of liver, kidney, spleen and bladder. Fresh leaf juice is an effective thirst quencher and cools the body. A paste of leaves is applied externally to the burns, swelling and scalds for its cooling effect. Stem juice applied externally relieves prickly heat and to the hands and feet when burning sensation is felt. Plant sap smeared on the body during summer provides relief in blister and boils. Powdered seeds are also used in heat burn, in diarrhoea and as a demulcent. Seed paste is also applied over burns and scalds.

Agrotechniques : No specific agrotechnique is available. It is directly collected from the field during rainy season.

***Prosopis cineraria* (L.) Druce (Mimosaceae)**



Sanskrit	:	Shami
Hindi	:	Shammi, Jand
Local	:	Khejri



A common tree growing throughout the desertic area. It is medium sized evergreen thorny tree with spreading and slender branches. Prickles are conical, straight, scattered on the internodes, Leaves 2 pinnate and leaflets 7-12 pairs. Its flowers are small, creamy white to yellow in axillary spikes. Pod 10-20 cm long rigid straight and 10-15 seeded. Seed dull brown and oblong. Flowering and fruiting in March to June.

Part used : Bark, Leaf, Flower and Pod

Usage : Flowers mixed with sugar is eaten by pregnant ladies to prevent abortion. Bark paste is effective in rheumatism, healing of injuries and scorpion bite. Leaves paste is applied on injured part for early healing and on boils to hasten suppuration. Pods having demulcent properties is also eaten as vegetable called 'Sangri'. Decoction of young pods used for curing pneumonia. Young pods boiled in water and made to paste expels guinea worm locally called 'Narubala'.

Agrotechniques : Propagated through seed/root suckers. Seed sown in the poly bags during the month of May-June and transplanted in field during rainy season. If rains are good direct sowing of seeds in the field could be done, at 10x10 meter. Weeding after 1-2 months and 3-4 irrigation in first 2-3 years promote its growth. Pods collected in the month of March-May and dried in shade. Dried pods sold @ Rs. 100/kg.

***Pulicaria crispa* (Cass.) Benth. & Hook. f. (Asteraceae)**



Hindi	:	Buhrna
Local	:	Soneli, Dhola-ligru

Restricted to drying beds of tanks, rivers and other water bodies, it is a herbaceous whitish-tomentose much branched herb with crisped leaves having recurved margins. Flower yellow and solitary. Fruit is an oblong achene. Pappus much longer than achenes. Flowering and fruiting in Sept. to March.

Part used : Whole plant

Usage : Whole plant is pounded in hot water and filtrate is used to cure jaundice, pneumonia, fever, cold and cough. Bruised leaves applied over forehead provide relief in headache. The young stem bark is tied as bandage over cuts and wounds for early healing.

Agrotechnique : No specific agrotechniques are available as it is a commonly occurring weed.

***Punica granatum* Linn. (Punicaceae)**



English	: Pomegranate
Sanskrit	: Dadima
Hindi	: Anar
Local	: Darim



A small tree or shrub with thin dark gray bark often armed with terminal or axillary thorns cultivated throughout India. Leaves opposite oblong or obovate and minutely punctate, shining above and bright green beneath. Flower scarlet red, tubular, solitary or 2-3 together. Fruit a spherical berry, septate interiorly with membranous wall containing numerous white, pink or red coloured seeds. Seed surrounded by whitish to red edible testa. Flowering and fruiting in November to March

Part used : Root, Bark, Flower, Fruit and Seed.

Usage : Root powder or decoction is used in dewarming among children. The juice of the flowers is put into bleeding nose. Fresh fruit juice is cooling and used to treat dyspepsia, cold, cough, diarrhoea and dysentery. Fruits with rind used in the treatment of bleeding piles, colitis, uterine disorders, diarrhoea, dysentery and cough. Powdered flower buds used to treat bronchitis. Seeds are stomachic. Stem bark also used to treat bronchitis and pyorrhoea.

Agrotechniques : Cutting/seeds. Mature stem pieces cut into lengths of about 30cm each are planted for rooting; the rooted cuttings planted at 4.5 to 6 m apart. Ordinary cultivation, addition of FYM, irrigation, and weeding at regular intervals are essential. Fully ripe fruits harvested and sold @ 15-20/kg, dried Anar Dana @ Rs. 200/kg and rind @ Rs 12/kg.

***Ricinus communis* Linn. (Euphorbiaceae)**



English	: Castor bean
Sanskrit	: Eranda
Hindi	: Arandi
Local	: Indi



It is naturalized in wastelands and cultivated for oil yielding seeds. The castor is tall shrub to small tree with green and reddish stem and branches. Leaves simple 5-12 lobed with toothed margins. Flowers green monoecious born in spikes; the male flowers on the lower and the female flowers are on the upper part of the plant. The fruit a spherical capsule with green or red spines has three small brownish mottled seeds. Flowering and fruiting through out the year.

Part used : Leaf, Seed, Root

Usage : Leaves are considered useful for treating intestinal worms, night blindness and earache. Leaves warmed and smeared with oil are applied to the abdomen to relief postnatal pains, on the knee and on affected parts to get relief in pain. A poultice of castor leaves cures boils and swellings. A decoction of the roots is also useful in the treatment of lumbago, rheumatism and sciatica. The root bark is effective in skin diseases. Fruit is used for piles and diseases of liver and spleen. Seed paste is used as a poultice for boils, sores, gouty or rheumatic swellings. Castor oil is a safe purgative and drug for reducing irritation of the skin. Oil cures dandruff, dermatitis and other skin affections.

Agrotechnique : Direct seed sowing in March and June-July. After two months, plants transplanted in the pits at 2x2 m. It requires 1-3 irrigation and weeding. Mature capsule harvested after drying. Seeds taken out from the capsules and air dried. Seeds sold @ Rs. 20/kg.

Salvadora oleoides Decne. (Salvadoraceae)



Hindi : Bara Pilu, Jhal
Local : Mitha Jal



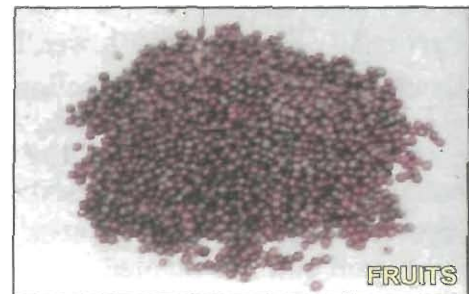
FRUITS

Common in moderately saline alluvial habitats of the desert area. Shrub or small evergreen tree with short twisted trunk and drooping branches. Flowers greenish white. Fruit a globose smooth berry. It becomes yellow to red on ripening and consists of single seeds. Flowering and fruiting in March to June.

Part used : Whole plant

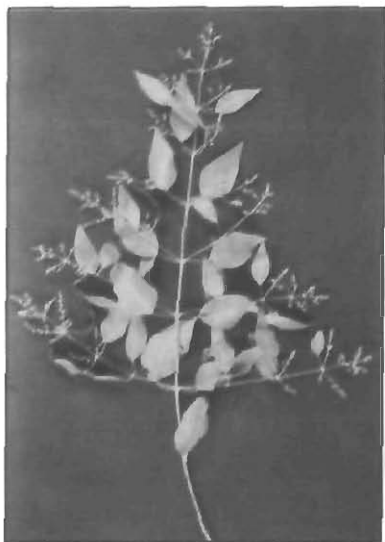
Usage : Sweet edible fruit eaten raw which has cooling effect. Leaves are used to cure cough. The young branches and roots are used as tooth brush. Seed paste and oil is applied to cure rheumatism.

Agrotechniques : Propagated through seeds directly or raised in nursery and transplanted in rainy season at 5x5 m. Irrigation 3-4 times followed by weeding in first year ensures survival. Fruit harvested and sold as 'Pilu'.



FRUITS

Salvadora persica Linn. (Salvadoraceae)



English : Mustard tree
Sanskrit : Pilu
Hindi : Chhota pilu, Kharjal
Local : Pilu, Khalo jhal

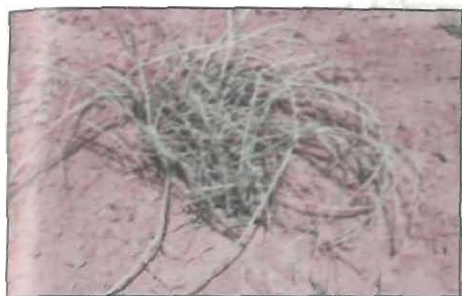
Dominant on saline plains and playas, it is a large much branched evergreen shrub with drooping, glabrous branches. Leaves are opposite, elliptical, lanceolate, succulent with acute apex and shining on both sides. Flowers are greenish yellow in compound panicles. Fruit is a drupe, juicy and red in colour on maturity. Flowering and fruiting in December to June.

Part used : Whole plant

Usage : Root decoction cures gonorrhoea and vesicle catarrh. Paste of root, bark and leaves is also applied on blisters. Decoction of leaves is used in asthma, cough and constipation problem. Leaves paste and seed oil applied externally cures rheumatism. Young branches as toothbrushes cure the problem of toothache and gums. Fruits are an antidote to the poison. Fruit possess carminative, diuretic and stomachic properties and are used in biliousness and rheumatism. Seeds are purgative, diuretic and used as tonic.

Agrotechniques : Propagated through seeds. Sowing/transplanting done in June-July. Irrigations 3-4 times and regular weeding required in first year. Young stem cut in small pieces and dried for the use as tooth brush. Bark sold @ Rs. 200/kg.

***Sarcostemma acidum* (Roxb.) Voigt (Asclepiadaceae)**



English	:	Moon creeper
Sanskrit	:	Soma
Hindi	:	Somlata
Local	:	Khirkhimp



Restricted under the bushes of *Euphorbia caducifolia* in dry rocky habitats. It is a perennial leafless much branched, straggling shrub with green cylindrical pubescent stem having milky white latex. Flowers in terminal many-flowered umbels and greenish white in colour. Fruit is a follicle, usually solitary, lanceolate tapering at both ends. Seeds glabrous. Flowering and fruiting in August to November.

Part used : Whole plant

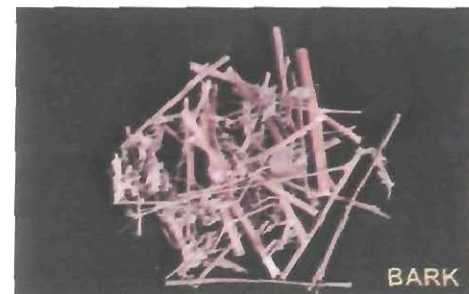
Usage : Whole plant extract is used internally to relieve rheumatic pains. Root paste is used in snake bite and taken as an infusion in dog-bite cases. Aqueous extract of the stem is given orally for bone setting and in rheumatic pains. Dried stem is emetic. The stem is some time used as substitute for *Ephedra gerardiana* as 'Soma' in Ayurveda.

Agrotechniques : No specific agrotechniques available as it is collected from the wild. It can be easily multiplied through stem cuttings. Roots sold @ Rs. 45/kg.

***Sida cordifolia* Linn. (Malvaceae)**



English	:	Country mallow
Sanskrit	:	Balaa
Hindi	:	Kungyi
Local	:	Bal



It is found throughout as a common weed under shade. An erect, perennial undershrub upto 1 m tall. Stem is ascending softly villous and densely pubescent all over. Leaves ovate oblong but cordate at base with irregular crenate margins. Flowers yellow and axillary. Fruit a subdiscoid and consist of 10 mericarp with trigonous black seeds. Flowering and fruiting in September to March.

Part used : Whole plant

Usage : A tonic and aphrodisiac, plant is also effective in intermittent fever, rheumatism and neurological affections. Leaves and roots are pounded and applied locally on boils to hasten suppuration. Powdered root bark is used for the treatment of urinary and nervous diseases. Powdered root with milk is given in leucorrhoea. Seed possess demulcent and laxative properties and are used in bowel complaints.

Agrotechniques : Since it is normally a weed collected from nature, no specific agro techniques are available. However it can be raised easily through seeds. Bark sold @ Rs. 10/kg.; Seeds sold @ Rs. 35/kg.



Sisymbrium irio Linn. (Brassicaceae)

English : Landon Rocket
Hindi : Khubkalan
Local : Asalio



A common weed throughout ranging from plains to the hills, it is a glabrous annual herb with pinnatifid leaves. Yellow flowers in leafless corymbose racemes. Fruit is 3-5 cm long siliqua with light brown seeds. Seeds are oblong and minutely granulate. Flowering and fruiting in November to February.

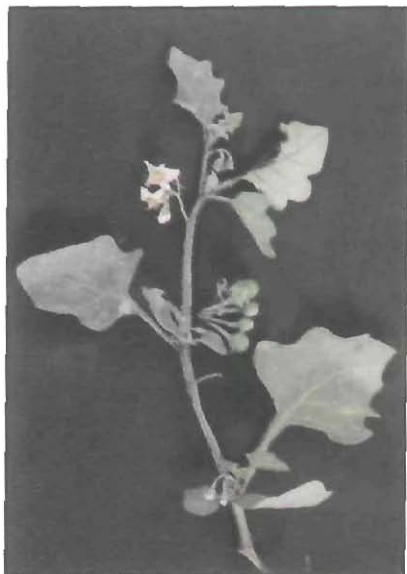
Part used : Leaf and Seed

Usage : Infusion of leaves gives relief in the affections of the throat and chest. Seeds are used in asthma and also reduce fever. Seeds soaked in water overnight and then given to children as a cooling drink during summer.

Agrotechniques : It is normally a weed and hence collected from nature. No specific agrotechniques are available. Propagated through seeds. Seeds sold @ Rs. 55/kg.

Solanum nigrum Linn. (Solanaceae)

English : Black night shade
Sanskrit : Kakamachi
Hindi : Makoi
Local : Makoi



It is common weed in waste places, gardens, cultivated lands and on road sides. A small erect, much branched, annual herb. Stem and branches are smooth soft terete or with raised lines. Leaves alternate egg shaped, elliptic. Flowers creamish white or violet and arranged in clusters. Fruit a globose berry. Ripe fruits purplish black and seeds flat, minutely pitted. Flowering and fruiting in September to December.

Part used : Whole plant

Usage : Whole plant is effective in chronic skin diseases, such as acne, eczema and psoriasis. A paste of plant is also useful in corrosive ulcers, pustules, burns and rheumatic pains. Freshly prepared extract of plant cures cirrhosis of liver, piles, dysentery, enlargement of liver and spleen. Decoction of plant is used in fever. Boiled leaves and tender shoots are used in dropsy. Fruits are used as appetizer, laxative, tonic and diuretic. Unripe fruits can be applied locally on ringworms. A decoction of the berries and flowers is used for relieving cough and cold. Decoction of dried fruits is given to mothers after delivery.

Agrotechniques : No specific agrotechniques are available as it is collected from natural populations. Easily propagated through seeds. Dry plant sold @ Rs. 20/kg.; Fruits sold @ Rs. 75/kg.

***Solanum surattense* Burm. f. (Solanaceae)**

English	: Yellow berried night shade
Sanskrit	: Kantakari
Hindi	: Kateli
Local	: Ringani



A frequent weed of degraded pastures and waste places in the area. It is prickly-branched perennial herb covered with hairs. Stem some what zig-zag with dense stellate tomentum. Leaves have long yellow sharp shining prickles on both surfaces. Flowers purple densely covered with hairs. Fruit is yellow globose smooth berry having reniform pale brown seeds. Flowering and fruiting in March and July.

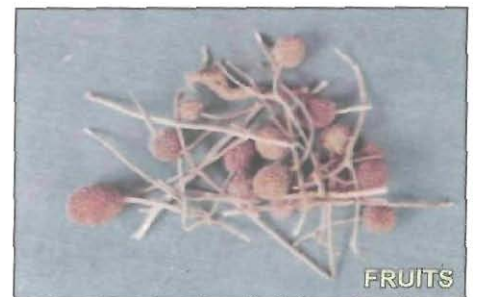
Part used : Whole plant

Usage : An antiasthmatic, astringent, digestive, diuretic and pungent, it is an important constituent of well known Ayurvedic drug "Dasamula and Arkadhi". The drugs prepared from it is used to treat stomach disorders, dropsy, throat disorder, gum diseases, enlargement of liver and spleen. Whole plant extract effective in bronchial asthma, piles and for rejuvenation. Root is used in asthma, cough and in chest pain. Root paste with lime juice is applied in snake and scorpion bite. Extract of the leaves with black pepper is useful in rheumatism. Crushed flowers are given orally to relieve diarrhoea in children. The smoke of fruit or whole plant is inhaled for treatment of infected teeth. Oil prepared from powdered fruit is used to treat skin eruption.

Agrotechniques : Since it is collected from its abundant populations in waste places, its agrotechniques are not yet standardized. Plant sold @ Rs. 45/kg

***Sphaeranthus indicus* Linn. (Asteraceae)**

English	: East Indian Globe Thistle
Sanskrit	: Hapusa, Mundi
Hindi	: Mundi, gorakh mundi
Local	: Mundi



A common annual weed of waste places and cultivated fields, it is a hairy herb, with many branches. Leaves alternate, glandular, hairy, simple and toothed. Flowers in terminal globose heads and whitish purple. Fruit a cypsela, oblong and villous. Flowering and fruiting in October to April.

Part used : Whole plant

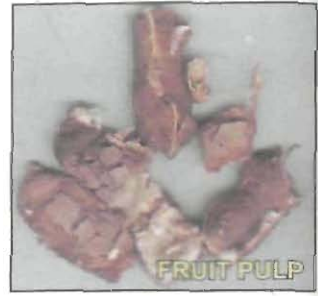
Usage : In Ayurveda and Unani, the whole plant is used to treat anorexia, jaundice, piles, worm infestation, blood disorders, scrofula, dysentery and fever. Effective in indigestion, colic, piles, leucorrhoea, impotence and eye problems. Powdered leaf cures skin diseases. Roots are useful in diabetes, leprosy, fever, cough and indigestion. Oil from root is aphrodisiac. Powdered seeds and roots are used as an anthelmintic. Flowers are cooling, eaten to treat conjunctivitis.

Agrotechniques : It is abundant in nature hence agrotechnique not yet standardized. It can be propagated through seeds. Fruit sold @ Rs. 20/kg.

Tamarindus indica Linn. (Caesalpiaceae)



English	: Tamarind tree
Sanskrit	: Amlika
Hindi	: Imli
Local	: Aamli



Commonly found in moist alluvial plains and near wells, now cultivated for its edible fruit pulp. A medium sized to large evergreen tree with thick trunk and dense spreading crown of green foliage. Leaves paripinnate, have 10-20 pairs of glabrous leaflets. Flowers small, white with reddish stripes. Pods are irregularly constricted between seeds, slightly curved, compressed and pale brown in colour. Seeds obovate, oblong compressed, dark brown and smooth. Flowering and fruiting in February to November onwards.

Part used : Fruit Pulp, Flower, Seed and Leaf

Usage : Fruit pulp is used in traditional system as a refrigerant, digestive, carminative and laxative. Infusion of pulp is useful for loss of appetite. Juice prepared from fruit pulp is very beneficial in heat stroke and fever. Poultice of fresh leaves is applied over swellings, bleeding piles and boils. Infusion of leaves gives cooling effect in bilious fevers. Powdered seed is used to treat chronic diarrhoea, dysentery and jaundice. Poultice of flower is used to treat inflammations and conjunctivitis. Seed kernel is used as a mild purgative and stimulant. The stem bark is also applied to sores and boils.

Agrotechniques : It can be propagated by seed or vegetatively and transplanted during July at 10x10m. First irrigation after transplantation and summer irrigation with weeding is necessary up to three years. Ripe fruits picked up 2-3 times in a year and sun dried for 5-7 days so that pulp gets detached from the outer shell and separates easily. Pulp sold @ Rs. 30/kg

Tecomella undulata (Sm.) Seem. (Bignoniaceae)



English	: Waved leave Bignonia
Sanskrit	: Rohi
Hindi	: Rugtrora
Local	: Rohiro

Commonly found in plains on sandy hummocky grounds and known as 'Marwar teak'. A medium sized tree with slightly hairy drooping branches. Leaves simple, glabrous, oblong, undulating with entire margins. Flower arranged in racemose inflorescence, campanulate and yellow to orange coloured. Fruit is a linear curved smooth capsule consisting of winged seeds. Flowering and fruiting in October to April.

Part used : Leaf, Stem, Root and Flower

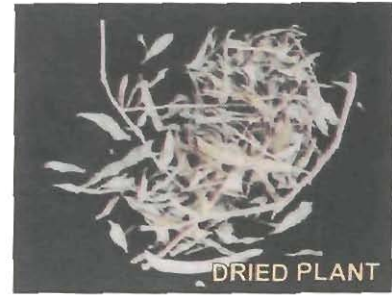
Usage : Paste of leaves, stem and root bark is used in the treatment of various skin diseases. Leaves and inner bark of stem extract obtained by heating them is used in eczema, psoriasis. Leaf juice is mixed with water and used in pneumonia and typhoid. Warmed leaves tied over swellings to remove guinea worm. Root bark is used in leucorrhoea. Flowers give orange colour herbal dye.

Agrotechniques : Propagated by seeds and rooting of stem cuttings. Seeds are sown in June-July. Seeds should be freshly collected as these loose viability with in a year. These become 30-45 cm tall in one year. In a pit (60x60x60 cm), FYM pond silt and local sandy soil should be mixed in 1:1:2 and planted with its sapling. 2-3 irrigations and weeding in the first and even second year are required.

***Tephrosia purpurea* (L.) Pers. (Fabaceae)**



English : Wild Indigo, Purple Tephrosia
Sanskrit : Sharapunkha
Hindi : Sarphonka
Local : Biyani



A much branched perennial erect herb distributed as weed in the desert. Leaves alternate, pinnately compound; leaflets 7-13, grey green, oblanceolate. Flower in terminal racemes and reddish purple. Fruit slightly compressed, curved pod and consist of 5-6 greenish-grey smooth ovoid seeds. Flowering and fruiting in July to November.

Part used : Whole plant

Usage : Whole plant is used in the treatment of respiratory diseases, piles, skin diseases and for stomach upset. It is also used as diuretic. It is beneficial in diseases of liver and kidney. Smoke of leaves gives relief in asthma. Extract of pod is used for relief in the body ache. Infusion of seed is used to treat intestinal worms. Oil from seeds is effective in eczema and other skin diseases. Roots are useful in skin diseases, flatulence, boils and asthma. Decoction of root is given in diarrhoea, dyspepsia, rheumatism and urinary disorders. Powdered roots smoked for relief from asthma and cough.

Agrotechniques : The seeds sown during rainy season @ 10kg seed/ha and irrigated once or twice and thereafter rained.. Whole plant is harvested in November and dried in the shade. After drying roots are separated from plant. Dried plant sold @ Rs. 20/kg; Roots sold @ Rs. 30-40 per kg.

***Tinospora cordifolia* (Willd.) Miers. (Menispermaceae)**



English : Moon creeper, Bile killer
Sanskrit : Amrita, Guduuchi
Hindi : Gulancha Giloy
Local : Nim Giloy



A climber on hedges and trees in rocky habitat and sandy areas mostly near human habitation. A large woody perennial, climber with thick, soft warted bark. Leaves are broadly cordate and membranous. Flowers dioecious in long axillary racemes. Male flowers in small fascicled and female flowers are usually solitary and yellow in colour. Fruit is red, a pea size small drupe. Seed white with median ridge on back side. Flowering and fruiting in February to April.

Part used : Whole plant

Usage : The aqueous extract of the plant is widely used for the treatment of jaundice, urinary diseases, eye and liver ailments. Extract of plant is hypoglycemic. Dry stem effective in diarrhoea and chronic dysentery as also a tonic. Its powder is very useful in fever. Fresh stem juice is antacid and effective in rheumatic arthritis and gout. Root decoction is emetic and is used as an antidote to snake bite.

Agrotechniques : Seed/ stem cuttings. Fresh seeds are sown in polybags in February and March. Semi hard cuttings of pencil thickness with 4-8 nodes are planted in polybags with two nodes inside the soil mixture during Feb-March. Plants transplanted after 4-5 months in the field along some tree, shrub or hedge. Light irrigation and weeding required intermittently. 3-4" pieces of stem should be cut after shedding of leaves and dried in the shade. Stem sold @ Rs. 20-25/kg.

Trianthema portulacastrum Linn. (Aizoaceae)



English	: Horse purslaine
Sanskrit	: Shwet Punarnava
Hindi	: Santhi, Safed punarnava
Local	: Šafed santo

A common succulent prostrate annual herb on damp waste places of saline, nonsaline areas, gardens and croplands. Stem often purple tinged. Leaves in unequal pairs and often with a red marginal line. Flowers, solitary axillary, pinkish white and enclosed by enlarged leaf bases. Fruit a capsule, consists of 5-10 reniform seeds. Seeds black kidney shaped covered with minute out growth. Flowering and fruiting in August to December.

Part used : Whole plant

Usage: Plant is used for the diseases of stomach, in rheumatism, dropsy and swelling of the body caused by disorder of liver or kidney. Decoction of plant effective in night blindness. Leaves eaten as vegetable for eye problems. Leaves diuretic and used in dropsy and oedema. Root paste is used externally for treating itching, corneal ulcer and night blindness. Roots infusion cures constipation and dropsy.

Agrotechniques : It is normally a weed and hence collected from nature. No specific agrotechniques are available.

Tribulus terrestris Linn. (Zygophyllaceae)



English	: Land caltrops
Sanskrit	: Gokshura
Hindi	: Gokhru, Trikantak
Local	: Kanti



It is a prostrate annual herb on loose sand and gravel along road sides and waste places. Branches silky, villous, densely covered with hairs. Leaves opposite peripinnate, unequal with leaflets of 3-6 pairs. Flowers yellow, solitary, axillary. Fruit globose consist of 5(-3) cocci, each possesses 2 lateral divergent acute spines and two shorter spines. Seeds are many in each of woody cocci. Flowering and fruiting in August to October.

Part used : Whole plant

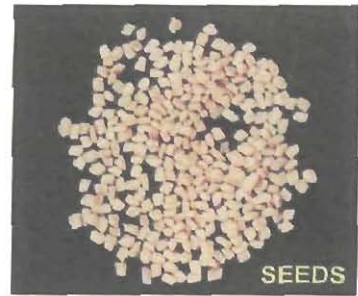
Usage: Mucilaginous water extract of the whole plant is taken as a remedy for impotency. Ash of the whole plant is good for external application in rheumatism. Leaves are used as a paste in the treatment of stones in bladder. Decoction of leaves is useful as a gargle for mouth trouble, painful gums and to reduce inflammation. Roots are said to be appetiser, diuretic, carminative and anti-inflammatory. Decoction of fruit is used as diuretic, demulcent, aphrodisiac and also as tonic. It is also used in treating calculous affections and painful micturition and other kidney diseases.

Agrotechniques : It is normally a weed and hence collected from nature. No specific agrotechniques are available. Fruit sold @ Rs. 40/kg

Trigonella foenum graecum Linn. (Fabaceae)



English	:	Fenugreek
Sanskrit	:	Methikaa
Hindi	:	Methi
Local	:	Methi



An aromatic annual, slightly branched herb grown as a forage crop and for medicinal purposes. Leaves are trifoliate. Flowers are yellowish-white in the axil of leaves. Fruit is a cylindrical pod with long persistent beak with 10-20 seeds. Seeds are greenish brown with a deep furrow. Flowering and fruiting in November to March.

Part used : Leaf and Seed

Usage : Leaves are used both externally and internally for their cooling properties and eaten as vegetables. Leaves paste is applied for swellings and burns. Seeds are considered tonic, antipyretic, mucilaginous, carminative and anthelmintic. Poultice of seeds is applied on swollen rheumatic joints and boils to get relief. Seed powder is also taken to control the diabetes and in the treatment of diarrhoea, abdominal pain and flatulence. Seeds cooked as vegetable and given to the patients of small pox and dysentery. Seed powder mixed with sugar and other ingredients to make sweet 'laddus' for the lactating mother and patients suffering from gout. This is also beneficial in general debility and chronic fever.

Agrotechniques : The seed is either broadcast or sown in rows about 15 to 30 cm apart in July-August. One light irrigation immediately after sowing and thereafter mostly rainfed; weeding essential. Leaves are continuously cut and used fresh and also dried in shade. Seeds collected when pods are mature and dried in the sun light. Fresh leaves sold @ Rs. 8-15/kg. Dry Leaves sold @ Rs. 50/kg; Seeds sold @ Rs. 20/kg.

Tylophora indica (Burm. f.) Merrill (Asclepiadaceae)



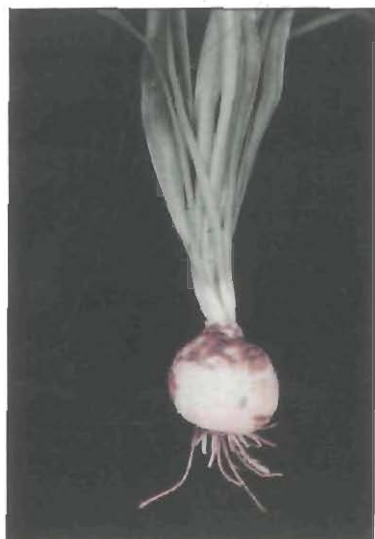
English	:	Emetic swallow wort
Sanskrit	:	Antamula
Hindi	:	Antamul
Local	:	Dama bel

Morphology : It is a small twining perennial climber cultivated for its medicinal value. Stem elongated and glabrous. Leaves are ovate or elliptic oblong with cordate and acute at apex. It has dull greenish, yellow flowers in umbellate cyme. Fruit is a 2-4 inches long follicle. Seed is ovoid and flat.

Part used : Leaf and Root

Usage : Fresh roots expectorant in chronic bronchitis, whooping cough and antirheumatic. Root paste is externally applied to relieve gout pain. Leaves are effective in the treatment of allergic diseases, particularly bronchial asthma. Leaves are also used as diaphoretics and emetic. Powdered leaves are beneficial for treating diarrhoea and dysentery.

Agrotechniques : No proper agrotechnique is available. It can be propagated through root cuttings.

Urginea indica (Roxb.) Kunth. (Liliaceae)

English	: Indian squill
Sanskrit	: Kolkanda
Hindi	: Jangli piyaz
Local	: Jangli kando

It is a perennial herb buried in the red mud cervices of the rocky habitats of arid area. Leaves linear acute and nearly flat. Flowers are light brown in colour drooping or spreading in terminal racemes. Fruit is an ellipsoid 3-celled capsule consisting of flattened black seeds. Bulb is egg shaped dull white 5-10 cm in diameter. Flowering and fruiting in February to May.

Part used : Bulb

Usage : Dried powdered bulbs yields 'Indian squill' an expectorant, stimulant and cardiogenic in small doses. It is used mainly in chronic bronchitis and asthma. Alcoholic extract of the bulbs has anticancer property and effective in rheumatism, skin problem and in the treatment of dropsy and renal calculi. Powder of bulb is externally applied for removing corns and warts. Poultice of bulb is used to reduce the pain and swelling of gout/rheumatism. Paste of leaves is externally applied over cracked skin.

Agrotechniques : Agrotechniques are not yet standardized, but it can be propagated through vegetative method i.e. from bulbs.

Vernonia cinerea (L.) Less. (Asteraceae)

English	: Purple fleabane
Sanskrit	: Sahadevi
Hindi	: Sahadevi
Local	: Sandari



A common weed found through out the desert area, it is an erect annual herb with slender, grooved and ribbed stem. Stem branched near the apex. Leaves much variable in size and shape, broadly elliptic or lanceolate, irregularly toothed and sparsely hairy. Capitula about 20 flowered, terminal or axillary corymbs. Florets pinkish purple. Achenes 3-4 angled, densely silky pubescent slightly narrowed at base. Flowering and Fruiting through out the year, maximum in September to November.

Part used : Whole plant

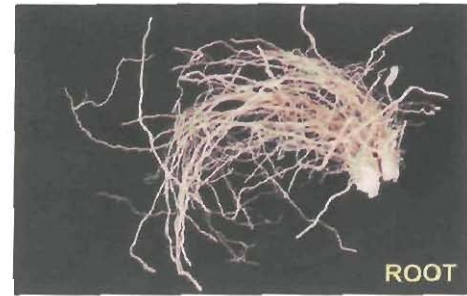
Usage : It is one of the ten herb that make 'Dasapuspa' an Ayurveda drug. Decoction of plant is used to promote perspiration in fevers. Infusion of herb with quinine used against malaria. Whole plant is used in the treatment of leucorrhoea, skin diseases, thirst, vomiting and cough. Plant juice is given in incontinence of urination and to relieve piles. Leaf juice is used for amoebiosis and poultice of leaves in eczema and ringworms. Roots used as an anthelmintic, in fever, boils, eye diseases and as a sedative. Juice of roots effective in cough and colic and decoction is given in diarrhoea and stomachache. Flowers used in fever, rheumatism and conjunctivitis. Seed powder is effective in the treatment of round worm, thread worm, leucoderma and psoriasis.

Agrotechniques : Since collected from nature, agrotechnique not standardized so far.

Vetiveria zizanoides (Linn.) Nash (Poaceae)



English	: Vetiver
Sanskrit	: Ushira
Hindi	: Khas, Gandar
Local	: Khas



A densely tufted perennial grass with spongy aromatic roots along river beds and sand beds particularly in low lying non-saline tracts. Leaves narrow linear, rigid and more or less hairy downwards. Flowers are arranged in 5 cm long racemes. Fruit a caryopsis, oblong grain. Flowering and fruiting in August to March.

Part used : Root

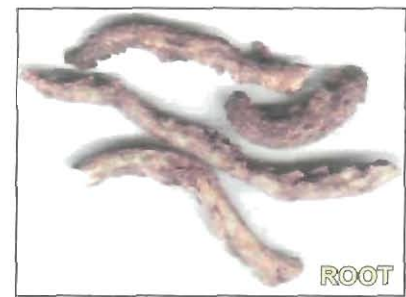
Usage: The roots are fragrant yield an essential oil used in medicine and cosmetics. Infusion of powdered grass used in bilious fever, chronic skin diseases, piles and debility. It is also used in fever, headache and palpitation, as a cooling tonic to heart and brain and as a blood purifier. Roots are also used as medicine in various forms. Roots are digestive, carminative, expectorant, diuretic, stimulant and antispasmodic. Paste of the root is applied externally over the temples to relieve headache. Ash of roots is also effective in acidity.

Agrotechniques : It is grown as rainfed crop in well drained sandy loam soils. It can be grown through seeds and 15 to 20 cm long rooted slips during rainy seasons. One light irrigation after sowing of seeds/suckers and weeding essential. Roots are dug out after 12 to 18 months during dry months and dried in the shade. Roots sold @ Rs. 60/kg

Vitex negundo Linn. (Verbenaceae)



English	: Chaste tree
Sanskrit	: Nirgundi
Hindi	: Sambhalu
Local	: Nirgandi



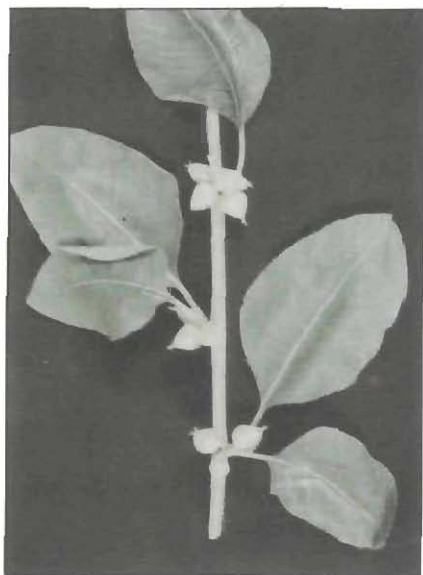
Grows gregariously on sandy soils, in open moist habitats, usually planted as hedge. Deciduous, aromatic shrub with quadrangular, densely whitish tomentose branches. Leaves 3-5 foliate, leaflets lanceolate, glabrous with entire margins. Flowers pale blue in terminal paniculate raceme. Fruit ovoid drupe, black when ripe. Flowering and fruiting in June to February.

Part used: Whole plant

Usage: Decoction of leaves used for bath to relieve body pains. Dried leaves as tonic and vermifuge also smoked for relief of headache and catarrh. Leaf juice is used to clean infected ulcers. Roots are febrifuge, tonic, expectorant, anodyne and diuretic. Flowers astringent used in fever, diarrhoea and liver complaints. Seeds considered cooling and used to treat skin diseases.

Agrotechniques : Specific agrotechniques are not available as it is collected from nature. However, it can be raised vegetatively through stem cuttings in February-April and later can be transplanted in rainy season (July August) on well drained soils. Sold @ Rs. 100/kg.

***Withania somnifera* (Linn.) Dunal. (Solanaceae)**



English	: Winter Cherry
Sanskrit	: Ashwagandha
Hindi	: Ashwagandha
Local	: Asgandh



It occurs wild on wastelands in drier parts of India and now cultivated for its medicinal roots. It is an erect, stout, branched perennial evergreen grayish tomentose undershrub covered with fine greenish white pubescence. Leaves are ovate, minutely stellate and pubescent. Flowers in axillary cyme and greenish yellow in colour. Fruit is an orange red berry enclosed in the persistent papery 5-angled calyx. Seeds numerous, yellow and reniform. Flowering and fruiting in January to April.

Part used : Root, Leaf and Seed

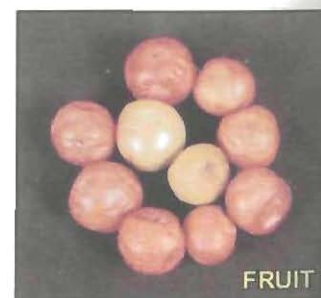
Usage : The roots are considered aphrodisiac, diuretic and germicidal. Powder of dried roots is a tonic in debility, nervous diseases, leucorrhoea and arthritis. Root effective in digestive disorder, rheumatic affections, tuberculosis, insomnia, cold and cough. The dried root powder can promote growth in children and retard the ageing process in older people. Dried roots after grinding and bruised leaves are externally applied to painful swellings. Leaves beneficial in skin diseases, wounds and tumors. Infusion of leaves is given to relieve fever. Fruits and seeds are diuretic.

Agrotechniques : Propagation through seeds. Generally it grows in all types of soil (pH. 7.5 to 7.8) under dry climate. Seeds are sown in rows 50 cm apart in the last week of July. Thinning is done after 30 days of sowing to have plant to plant distance 30 cm. 2-3 irrigations and weeding essential. When leaves and fruits turn dry (after 150-180 days) the whole plant is uprooted. Roots are separated from rest of the plants and cut into the small pieces and dried in shade. Dried fruits are harvested separately, for seeds. Seeds sold @ Rs. 45-50/kg ; Roots sold @ Rs. 100/kg.

***Ziziphus mauritiana* Lamk. (Rhamnaceae)**



English	: Indian jujube
Sanskrit	: Badarah
Hindi	: Beri
Local	: Borti



It is small evergreen shrub with spreading crown and drooping branches commonly planted in orchard. Prickles often in pairs, one straight and another curved. Leaves alternate, variable, ovate oblong, irregularly denticulate and tomentose. Flowers greenish yellow in small axillary clusters. Fruit oblong, globose, fleshy, glabrous, yellowish orange to red when ripe. Seeds compressed. Flowering and fruiting in September to January.

Part used : Whole plant

Usage : Mucilaginous fruits are cooling, anodyne and used as tonic, digestive and blood purifier. 'Joshanda' a unini medicine for cold, cough and chest problems is prepared from it. Seeds are sedative, anti emetic and relieve abdominal pain during pregnancy. They are also given as an antidote in case of poisoning. Leaf paste is massaged to cure bleeding gums. Root bark decoction is used in treatment of diarrhoea, dysentery, toothache, fever and healing of old wounds and ulcers. The root bark and fruit being used to treat thirst and bronchial asthma. The gummy product from branches is taken against dysentery. Fruits are edible.

Agrotechniques : Easily grown from seeds and planted at 5x5 m in rainy season. Fruits collected during winter and sold Rs. 20/- Kg

***Ziziphus nummularia* Wight & Arn. (Rhamnaceae)**



English : Wild jujube
Sanskrit : Sukshamaphala
Hindi : Jharberi
Local : Bordi, Borti



A small thorny shrub with spreading zig-zag branches common in croplands and grazing lands. Leaves ovate or orbicular, densely white and spinous. Thorns usually in pairs; One sharp, straight, long and other one small and hooked. Flower pale yellow, fruit globose drupe, glabrous red when ripe and 1-seeded. Flowering and fruiting in August to December.

Part used : Stem bark, Leaf, Fruit

Usages : Fruits boiled in water and its water is used to take bath for curing fever caused due to heat stroke during summer season. The fruits are also eaten. Paste of leaves is used for healing cuts and boils and cutaneous diseases. Leaves decoction is used as a bath after delivery and as a gargle for sore throat and bleeding gums. Dried leaves burnt and smoke inhaled to relieve cough and cold. Paste of bark gives cooling effect on burnt portion as an antiseptic.

Agrotechniques : It grows naturally, but can be propagated through seeds. Fruit sold @ Rs. 60/kg.

***Zygophyllum simplex* Linn. (Zygophyllaceae)**



Local : Lunwa, Lonk

A common plant in saline habitats, it is dichotomously branched diffused erect annual with glabrous, slender branches. Leaves 1-foliolate, fleshy and cylindrical. Flowers yellow. Fruit a capsule deeply 5-lobed and obovoid consist of fusiform smooth seeds. Flowering and fruiting in September to January.

Part used : Leaf and Seed

Usage : Infusion of leaves and seeds applied to the eyes in ophthalmia and glaucoma. Seeds are anthelmintic. Paste of warmed leaf is also applied to cure burning sensation and swelling over eyes.

Agrotechniques : Directly collected form nature and hence agrotechniques not available.

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GLOSSARY OF MEDICAL TERMS

Abdominal	Relating to the abdomen	Ascites	Abnormal accumulation of serous fluid in the peritoneal cavity of the abdomen
Abortifacient	Inducing abortion	Asthma	A lung disease characterized by wheezing, difficult breathing, coughing and a feeling of suffocation
Abscess	A localized collection of pus surrounded by inflamed tissue	Astringent	An agent which contract & organic tissues
Acne	A disorder of the skin caused by inflammation of the skin glands and hair follicles marked by pimples, especially on the face	Bilious	Disorder of liver function resulting in indigestion, constipation, headache
Adulterant	A substance used to replace a more valuable agent or ingredient	Blister	A thin vesicle on the skin containing watery matter caused by burn
Alopecia	Hair loss; baldness	Boil	Acute inflammatory condition surrounding a hair follicle
Alterative	A drug used to alter favourably the course of an ailment and to reestablish normal organ function	Bronchitis	Of or relating to the bronchi or their ramifications in the lungs
Amenorrhoea	Abnormal absence or suppression of the menstrual discharge	Calculus (pl. calculi)	Concretion usually of mineral salts around organic material found especially in hollow organs or ducts, such as the bladder
Amoebiasis	Infection with or disease caused by amoebas	Cancer	A malignant tumour of potentially unlimited growth that expands locally by invasion and systematically by metastasis
Anaemia	A condition in which the blood is deficient in red blood cells, haemoglobin, or in total volume	Carbuncle	A painful local purulent inflammation of the skin and deeper tissues with multiple openings for the discharge of pus and usually, necrosis and sloughing of dead tissue
Anodyne	An agent that relieves pain, soothes, calms or comforts	Cardiac	Relating to the heart
Anorexia	Loss of appetite, especially when prolonged	Cardiotonic	An agent tending to increase the tonus of heart muscle
Anthelmintic	An agent that destroys or expels intestinal worms	Carminative	Expelling gas from the alimentary canal so as to relieve colic or griping
Antiallergic	Countering allergic reactions	Cataract	A clouding of the lens of the eye or of its capsule obstructing the passage of light
Antibacterial	Directed or effective against bacteria	Catarrh	Inflammation of a mucous membrane, usually of the nose and respiratory system
Antibilious	An agent that relieves bilious conditions	Cathartic	Purgative
Antidote	An agent used to counteract the action or effect of poisons	Chronic	Marked by long duration or frequent recurrence
Antidysenteric	An agent used to counteract dysentery and its symptoms	Cirrhosis	Fibrosis, especially of the liver, with hardening caused by excessive formation of connective tissue followed by contraction
Antifertility	Able to or tending to reduce or destroy fertility or conception	Colic	Acute abdominal pain
Antifungal	Used or effective against fungi	Conjunctivitis	Inflammation of conjunctiva (mucous membrane lining inner surface of eyelids)
Anti-inflammatory	Which prevents inflammation	Constipation	Abnormally delayed or infrequent passage or dry, hard faeces
Antiperiodic	An agent used to treat periodic disorders or diseases (e.g. malaria)	Contraceptive	An agent use to prevent conception
Antipyretic	An agent that reduces fever	Cooling	Reducing temperature or thirst
Antirheumatic	An agent relieving or curing rheumatism	Corneal	Relating to the cornea
Antiseptic	An agent used to arrest growth or action of bacteria and other microorganisms causing infection	Corns	A local hardening and thickening of epidermis (as on a toe)
Antispasmodic	Allaying, relaxing or controlling spasms	Coryza	An acute inflammatory contagious disease involving the upper respiratory tract; common cold
Aphrodisiac	Exciting sexual desire	Cutaneous	Of, relating to, or affecting the skin
Appetizer	An agent that stimulates appetite	Debility	Weakness, infirmity
Aromatic	A substance with a fragrant, cordial, spicy taste and/or odour and containing volatile oils and stimulants to the gastro-intestinal mucous membrane		
Arthritis	Inflammation of joints due to infectious, metabolic or constitutional causes		

Decoction	An extract obtained by boiling down	Glaucoma	A disease of the eye marked by increased pressure within the eyeball, damage to the optic disc, and gradual loss of vision
Demulcent	A mucilaginous or oily substance capable of soothing or protecting an abraded mucous membrane	Gonorrhoea	An infectious disease of venereal origin in adults
Dermatitis	Inflammation of the skin	Gout	Deposits of urates in and around the joints, and usually an excessive amount of uric acid in the blood
Detergent	Purifying or cleansing	Guinea worm	A slender nematode worm (<i>Dracunculus medinensis</i>) attaining a length of more than a metre and occurring as an adult in the subcutaneous tissues of various mammals, including humans
Diabetes	A metabolic disorder resulting in elevated blood glucose and discharge of large amounts of glucose-containing urine	Haemorrhoids	A mass of dilated veins in the swollen tissue situated near the anal sphincter; also known as piles
Diaphoretic	Having the power to increase perspiration	Hyperacidity	A condition characterized by more than the normal amount of acidity in the digestive tract
Diarrhoea	A common symptom of gastrointestinal diseases resulting in frequent discharge of watery stools	Hyperglycaemia	Excess of sugar in the blood
Digestive	Something that aids digestion, assisting the stomach and intestines in their normal functions	Hypertension	Abnormally high blood pressure and, especially, arterial blood pressure
Diuretic	An agent that induces or stimulates the flow of urine	Hypoglycaemia	Abnormal decrease in the level of sugar in the blood
Dropsy	Oedema	Hypotension	Abnormally low blood pressure
Dysentery	A disease characterized by severe diarrhoea with passage of mucus and blood, usually caused by bacterial or protozoan infection	Hypotensive	Causing low blood pressure or a lowering of blood pressure
Dysuria	Difficult or painful urination	Impotence	Inability to engage in sexual intercourse, usually with reference to males
Eczema	An inflammatory condition of the skin characterized by redness, itching, and oozing vesicular lesions which become scaly, crusted or hardened	Indigestion	Inability to digest or difficulty in digestion
Emetic	An agent that induces vomiting	Inflammation	Characterized by pains, swelling, redness
Emmenagogue	An agent that promotes normal menstrual discharge	Infusion	A product obtained by steeping in liquid without boiling for extracting useful substances
Enema	The injection of liquid into the intestine by way of the anus; the material used for an enema	Insecticidal	Lethal to insects
Epilepsy	Any of various nervous disorders marked by disturbed electrical rhythms of the central nervous system and typically manifested by convulsive attacks, usually with clouding of consciousness	Insomnia	Sleeplessness
Eruption	The breaking out of a rash on the skin or mucous membrane	Intermittent	Not continuous; coming and going at intervals
Expectorant	Tending to promote discharge of mucus from the respiratory tract	Jaundice	Yellowness of skin, tissues and secretions (such as urine) due to deposition of bile pigments in the blood
Febrifuge	Antipyretic; an agent that reduces fever	Laxative	A mild purgative
Fertility	Capability to conceive or cause conception	Leucoderma	A skin condition characterized by defective whitish pigmentation
Fibroids	A benign tumour made up of fibrous muscular tissue that occurs especially in the uterine wall	Leucorrhoea	A white or yellowish viscid discharge from the vagina resulting from inflammation or congestion of the mucous membrane
Flatulence	Excessive gas in the stomach or intestines	Leukaemia	An acute or chronic disease characterized by an abnormal increase in the number of leucocytes in the tissues and often the blood
Fomentation	Hot moist substances applied to the body to ease pain	Lochia	The discharge from the vaginal passages during the 2-3 weeks after childbirth
Galactagogue	An agent that stimulates secretion of milk	Lochial	Relating to lochia
Gargle	The act of washing the throat	Malaria	An acute, usually chronic disease caused by <i>Plasmodium</i> species in the red blood cells, transmitted by <i>Anopheles</i> mosquitoes, causing periodic attacks of chills and fever
Gastric	Relating to the stomach	Measles	An acute contagious viral disease marked by an eruption of distinct red circular spots
Gastritis	Inflammation of the mucous membrane of the stomach	Menorrhagia	Abnormally profuse menstrual flow

Menstrual complaints	Irregularity in the monthly discharge from the uterus; includes menorrhagia and dysmenorrhoea	Scald	To burn with hot liquid
Migraine	A condition marked by recurrent severe headache often with nausea and vomiting	Sciatica	Pain along the course of a sciatic nerve, especially in the back of the thigh; pain in the lower back, buttocks, hips or adjacent parts
Neurosis	A functional nervous disorder without demonstrable physical lesion	Sedative	An agent that soothes or allays irritability
Night blindness	Reduced visual capacity in faint light (as at night)	Smallpox	An acute, contagious febrile viral disease characterized by skin eruption with pustules, sloughing and scar formation
Obesity	A condition characterized by excessive bodily fat	Sore	Localized sore spot on the body
Oedema	An abnormal excess accumulation of serous fluid in connective tissue or in a serous cavity	Spermatorrhoea	The involuntary discharge of semen without an orgasm
Ointment	A salve or unguent for application to the skin	Stimulant	An agent that increases functional activity of an organ or of the whole body
Ophthalmia	Inflammation of the conjunctiva or the eyeball	Stomachic	A stimulant or tonic for the stomach
Paralysis	Complete or partial loss of motion, sensation or function in a part of the body	Sudorific	Causing or inducing sweat
Piles	A mass of dilated veins in the swollen tissue situated near the anal sphincter	Sunstroke	Heatstroke caused by direct exposure to the sun
Plaster	A medicated or protective dressing that consists of a film (as of cloth) spread with a medicated substance (or herbal drug)	Suppuration	The formation of pus; maturation (e.g. of boils)
Pneumonia	A disease of the lungs caused by infection or irritants, characterized by inflammation and consolidation followed by resolution	Suppurative	Promoting suppuration
Poultice	A soft, usually heated and sometimes medicated mass spread on cloth and applied to sores or other lesions	Syphilis	A chronic, contagious, usually venereal and often congenital disease
Prickly heat	A non-contagious skin eruption or red pimples with intense itching and tingling caused by inflammation around the sweat ducts	Tincture	A solution of a medicinal substance in an alcoholic solvent
Psoriasis	A chronic skin disease characterized by circumscribed red patches covered with white scales	Tonic	An agent that invigorates, refreshes, restores or improves the normal tone of an organ or of a patient generally
Purgative	An agent that causes evacuation of the bowels	Tuberculosis	A highly variable communicable disease caused by the tubercle bacillus and characterized by toxic symptoms or allergic manifestations which in humans primarily affect the lungs
Pustule	A small, circumscribed elevation on the skin with an inflamed base containing pus	Tumour	Generally any abnormal swelling of the body other than those due to direct injury
Pyorrhoea	A purulent discharge that contains or consists of pus in teeth	Typhoid (fever)	A communicable disease caused by a bacterium (<i>Salmonella typhi</i>), usually acquired through contaminated food, marked by fever, diarrhoea, prostration, headache and intestinal inflammation
Refrigerant	Reducing thirst and/or having a cooling effect on the surface of the body	Ulcer	An open sore in body surface
Rheumatism	Characterized by inflammation or pain in joints and muscles	Urinary complaints	Disorders of the urinary system
Rheumatoid arthritis	A usually chronic disease of unknown cause characterized by pain, stiffness, inflammation, swelling and sometimes destruction of joints	Urticaria	An allergic disorder marked by raised oedematous patches of skin with intense itching
Rubefacient	An agent that causes reddening of the skin and a local increase in blood flow	Uterine disorders	Irregularity in the normal functioning of the uterus or womb
Scabies	A contagious parasitic disease of the skin caused by the mite	Venereal diseases	Sexual diseases
		Vermifuge	An agent that expels parasitic worms
		Vertigo	A disordered state in which the individual or his/her surroundings seem to whirl dizzily; giddiness
		Whooping cough	An infectious disease especially of children caused by a bacterium and marked by a convulsive spasmodic cough

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