



REVIEW ON HERBS

Dental Science

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ABSTRACT

Herbs are remedial agents for humans with least side effects. In India, it has been reported that 2,500 plant species and that 100 species of plants serve as regular sources of medicine. During the last few decades, there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world. 80% of the world's people depend on traditional medicine (herbal) for their primary healthcare needs according to the World Health Organization (WHO).

KEYWORDS

Herbal remedies have assumed a global dimension in the treatment of various ailments in both developed as well as developing countries. Although today, only a few of these many herbs have been approved for their commendable medicinal properties, a large majority of naturally occurring herbs are only considered as food supplements, because of the lack of a randomized controlled clinical trials. [1-3]

Uses of some of drugs which are used in dentistry mentioned below :

- Myrrh (*Commiphora myrrha*) : It helps promote healing in cases of pyorrhea, Gargle with myrrh to help eliminate bad breath.
- Prickly Ash (*Zanthoxylum*): Used to increase the flow of saliva and relieve pain in toothache.
- Peppermint (*Mentha piperita*) : Use peppermint oil for toothache. Soak a cotton ball in the oil and place it in the cavity or rub it on the tooth. Use peppermint mouthwash to relieve gum inflammation.
- Red clover (*Trifolium pretense*) : Red clover mouthwash is healing for irritated and diseased gums, After making red clover tea, prepare an ointment from the strained blossoms and leaves.
- Rosemary (*Rosmarinus of cinalis*) : Use rosemary mouthwash for the treatment of gum disease and bad breath.
- Sanicle (*Sanicula Europaea*) : Use as a powerful antioxidant , Use as a salve or ointment to heal septic wounds.
- Shepherd's Purse (*Capsella bursa- pastoris*) : Use the fresh tops of shepherd's purse to help stop bleeding after tooth extraction.
- Tree tea oil (*Melaleuca alternifolia*) : Rub the tree tea oil directly on sore, inflamed gum for temporary relief. Use tree tea mouthwash to soothe oral inflammation. It also has mild solvent action, hence it can be used in root canal treatment of necrotic tissue.
- Thyme (*Thymus vulgaris*) : It contain fluorine used in toothpaste. Thymus Vulgaris extract is effective against Streptococcus Mutans.
- Violets (*Clematis virginica*) : Mouthwash made from violets helps relieve the pain and tenderness from sores caused by oral cancer. It is also helpful in soothing canker sores and cold sores.
- Wintergreen (*Gaultheria procumbens*) : Wintergreen mouthwash is an excellent astringent and antiseptic. Soak a cotton ball in wintergreen oil and place it on a sore tooth or rub it on inflamed gums for temporary relief.
- Yarrow (*Achillea millefolium*) : Used to treat hemorrhages, ulcers and to improve blood clotting, Use yarrow mouthwash to promote healing of cuts in mouth due to surgery, teeth cleaning and braces.

In this article I will be discussing in detail about *Acorus calamus*, *Cissampelos pareira* Linn. and *Zanthoxylum armatum*.

ACORUS CALAMUS :

The sweet flag *Acorus calamus* L (vernacular: Bach) is a perennial herb

belonging to the family Araceae. Found in marshy land, shallow water and pond edges of the northern temperate, subtropical and warm regions of Indian subcontinent. It contains 1.5 to 3.5% of volatile oil, starch, resin (2.5%) and tannins (1.5%). The main constituents of calamus oil is asarone, β -asarone and it has been successfully employed for the preparation of perfume, flavors and medicine. Traditionally it was used to treat the diseases such as dyspepsia, flatulence, cough, fever piles and asthma. The leaves and rhizome of *Acorus calamus* is reported to possess antimicrobial and antifungal activity. Due to varied uses, there has been demand for the plant. [13]

Acorus calamus is a native of eastern countries and also it is indigenous to the marshes of the mountains of India. It is cultivated throughout India, ascending to an altitude of about 2200 metres. It is also found in marshy tracts of Kashmir, Shirmour (Himachal Pradesh), Manipur and in Naga Hills. It is regularly cultivated in the koratagere taluka of Karnataka state in peninsular India. [14]

The parts used are leaves, root (rhizome) and stem. In Asia, Sweet flag has been used for at least the last 2000 years. The ancient peoples of China used it to lessen swelling and for constipation. In Ayurvedic medicinal practice India, the rhizomes have been used to cure several diseases like fever, asthma and bronchitis, and as a sedative. Native tribes used it to treat a cough, made a decoction as a carminative and as an infusion for cholera. In Western herbal medicine the herb is chiefly employed for digestive problems such as gas, bloating, colic, and poor digestive function. Calamus helps distended and uncomfortable stomachs and headaches associated with weak digestion. Small amounts are thought to reduce stomach acidity, while larger doses increase deficient acid production. It is a good sedative so that the extract is used for epilepsy, insanity and as a tranquillizer along with valeriana jatamansi and *nardostachys grandiflora*. It is an ingredient of any Ayurvedic preparation "Brahmi Bati" (Budhivardhar) which is indicated in epilepsy, coma, and hysteria and in cases of mental retardation; the same uses are prescribed for an *Acorus* containing Unani drug Ma'jun Baladur". [15]

Phytochemically it has reported the presence of glycosides, flavonoids, saponins, tannins, polyphenolic compounds, mucilage, volatile oil and bitter principle. The plant has been reported for the presence of glucoside, alkaloid and essential oil containing calamen, clamenol, calameon, asarone and sesquiterpenes. It also contains a better glycoside named a corine along with eugenol, pinene and camphene. The plant has been extensively investigated and a number of chemical constituents from the rhizomes, leaves and roots of the plant have previously reported which includes β - Asarone, α Asarone, elemicine, cisisoelemicine, cis and trans isoeugenol and their methyl ethers, camphene, P-cymene, bgrjunene, a-selinene, b-

cadinene, camphor, terpinen-4-ol, aterpineol and α -calacorene, acorone, acronone, acoragermacrone, 2-deca-4,7 dienol, shyobunones, linalool and preisolcalamendiol are also present. Acoradin, galangin, 2, 4, 5-trimethoxy benzaldehyde, 2,5 dimethoxy benzoquinone, calamendiol, spathulenol and sitosterol have been isolated from *Acorus calamus*. Alcoholic extracts of the triploid *A. calamus* were characterized by a higher percentage of β -asarone (11%), which was the main compound, followed by higher percentages of camphene (2.27%), E- β -ocimene (3.28%), camphor (1.54%), calarene (1.42%), α -selinene (5.02%) and s-cadinol (2.00%), when compared to the diploid *A. calamus*. The latter had higher percentages of iso-shyobunone (8.62%), β -sesquiphellandrene (3.28%), preiso calamendiol (22.81%) and acorone (26.33%). [16-19] Pharmacological activity of *acorus calamus* are Anti-inflammatory, Hypolipidemic, Antiepileptic, Licitidal, Anticholinestrase, Antiadipogenic, Bronchodilator, Cardiac suppression, Insulin sensitizing, Radio protective, Anticonvulsant & analgesic, Neuromodulatory, Antidiarrhoeal, Immunosuppressive & anticellular, Murine cancer, Antihepatotoxic & Antioxidant. [20-23]

CISSAMPELOS PAREIRA LINN.

Belongs to the Menispermaceae family is a sub-erect or climbing herb, known as laghupatha in Indian traditional medicine. There are 37 plant species worldwide distributed under this genus. Only one of them occurs in India. A very variable, lofty, slender, dioecious, perennial climber, commonly distributed throughout tropical and sub-tropical India- Himachal Pradesh, Chota Nagpur, Bihar, West Bengal, Punjab, Rajasthan, particularly in the east of Aravalli, hilly forests of Marathwada, Konkan, Deccan, Tamilnadu. Rootstock woody, perennial; leaves usually peltate or orbicular-reniform or ovate-subreniform, with a truncate-cordate base, glabrous or hairy above, 3-12 cm across; flowers greenish yellow, male in axillary, fasciated, pilose cymes or panicles; female flower in 6-15 cm long pendulous racemes; drupes small, ovoid-subglobose or obovoid, compressed, scarlet red, hirsute; seeds horse-shoe shaped. The plant is common in orchards, hedges, parks and gardens on moist soils, either creeping or twining around other plants; also common on hilly tracts along water-courses. [24-26]

Phyto-constituents of *cissampelos pareira* linn. Alkaloids, viz. hayatine (\pm curine), hayatinine, hayatidine and other bisbenzylisoquinoline alkaloids, some non nitrogenous components, e.g., quercitol and sterol (root); cyclanoline chlorides, a non phenolic tertiary alkaloid (tetra hydroisoquinoline chromophone), alkaloids viz., seepeerine, berberine, cissampeline, pelosine (or berberine), hayatin, hayatinin, l-curine and d-isochondrodendrine along with a saponin, quaternary ammonium bases, d-quercetol and sterol, a base with a dihydroisoquinoline nucleus, cycleamine, hayatinin (4"-0-methyl berberine) and hayatidin (++)-4"-0-methyl berberine), three water soluble bases viz., menismin iodine, cissamin chloride and pareirin, cissamine chloride, cissampareine, five unidentified tertiary alkaloids, (++)-4"-0-methyl curine, tetrandrine (an alkaloid), dehydrodicentrine, dicentrine and insularine, bis (benzylisoquinoline), alkaloids viz., tetrandrinemono-N-Z'-oxide, isochondrodendrine and chondo curine and an alkaloids DL-curine dimethiodide (daijising) (root and root bark); cycleamine, l-berberine, hayatidin, hayatinin, hayatin and d-quercitol (leaves); tropoloisoquinoline alkaloids (plant). [27]

USES [28-31]

- Antioxidant
- Antifertility
- Chemopreventive
- Anti-haemorrhagic
- Antinociceptive & Antiarthritic
- Anti-inflammatory
- Gastroprotective
- Cardioprotective
- Anti-diarrhoeal
- Hepatoprotective
- Memory enhancing
- Anti-hyperglycemic

ZANTHOXYLUM ARMATUM

Zanthoxylum armatum is one of the most important medicinal plants in Indian medicinal literature. In India about 10 species are grown. Almost all parts of this plant are used in Indian traditional system for the treatment of various ailments and the significant medicinal

properties were further reported through scientific investigation. Plants containing active ingredients used to cure disease or relieve pain are called medicinal plants. [32]

Traditional uses [33]

Leaves : The leaves are mainly used for catching fishes, and also used to cure ingestion and cholera.

Seeds : The seeds are used to cure fever, dyspepsia and cholera, ingestion, flatulence and depression and employed as an aromatic tonic.

Bark : The bark of the tree is highly used as a carminative, stomachic and anthelmintic. In some countries, the bark powder is applied on gums for relief hence it is known as "toothache tree".

Fruit : The fruit juice is used for expelling roundworms from the stomach part. The fruit part is highly used to cure dental problems because of its deodorant, disinfectant and antiseptic properties. The pickles of fruit are used to cure cold, cough, abdominal pains, tonsils, limbs numbness. While the fruit powder with hot water is used against dysentery, diarrhoea.

Berries : The berries are carminative and antispasmodic in nature and used against skin diseases.

Whole plant : The whole plant is used to cure scabies and also used for expelling worms from the infecting ear.

Chemical Constituents [34]

Bark: Alkaloids: g-fagarine, b-fagarine (skimmianine), magnoflorine, laurifoline, nitidine, chelerythrine, tambetarine and candicine Coumarins: xanthyletin, zanthoxyetin, alloxanthyletin, Resin, tannin, volatile oil. Bark yields a bitter crystalline principle, identical to berberine, and a volatile oil and resin. The carpels yield a volatile oil, resin, a yellow acid principle, and crystalline solid body, xanthoxylin.

Phenolic Constituents

Study isolated two new phenolic constituents from the seeds - 3-methoxy-11-hydroxy-6, 8 dimethylcarboxylate biphenyl and 3, 5, 6, 7-tetrahydroxy-3', 4'-dimethoxyflavone-5- β -d-xylopyranoside along with five known compounds Two new phenolic constituents characterized as 3-methoxy-11-hydroxy-6,8-dimethylcarboxylate biphenyl and 3,5,6,7-tetrahydroxy-3',4'-dimethoxyflavone-5- β -d-xylopyranoside along with the five known compounds, 1-methoxy-1,6,3-antraquinone, 1-hydroxy-6,13-antraquinone, 2-hydroxybenzoic acid, 2-hydroxy-4-methoxy benzoic acid, and stigmasta-5-en-3 β -d-glucopyranoside, on the basis of spectral data and chemical analyses

Pharmacological activities of *Zanthoxylum armatum* [35-41]

- Larvicidal activities
- Antioxidant
- Hepatoprotective
- Insecticidal
- Spasmolytic
- Anti-inflammatory
- Anti-bacterial

Biological activity

- Mosquito repellent
- Piscicidal
- Leech Repellent
- Inhibits skin sensitivity

CONCLUSIONS

The use of herbal medicines continues to expand rapidly across the world. Many people take herbal medicines or herbal products now for their health care in different national healthcare settings. They also aid in healing and are effective in controlling microbial plaque in gingivitis and periodontitis and thereby improving immunity.

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