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STUDY OF SHWETA CHANDAN IN DETAILS – A REVIEW.

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ABSTRACT

In Ayurveda Santalum album is known as Shwet Chandan and Pterocarpus santalinus as Rakta chandana. Santalum album is an evergreen, semi-parasitic tree. It reaches up to 8 to 18 m in height and 2 to 4 m in girth. It is widely distributed in the India and commonly found in the dry regions of peninsular India from Vindhya mountains southwards, especially in Karnataka and Tamilnadu. This tree is cultivated for its aromatic wood and oil. In the present manuscript we are discussing regarding the shweta chandan and its details.

Keywords: Chandan, Vindaya Mountains

No. of References: 13

INTRODUCTION

Sandalwood contain few chemicals (such as sesquiterpenols, sesquiterpenes) which have anti-inflammatory, sedative and immune supportive properties. For the medicinal purpose the heartwood and essential oil of the tree is used.

In Ayurveda, the wood is considered Tikta/Bitter, Madhura/Sweet (Rasa/taste), Laghu/Light, Ruksha/Dry (Guna/Characteristics), Sheet/ Cool (Virya/Potency) and Katu/Pungent (Vipaka/Post Digestive Effect). It is used in vitiated condition of pitta, burning sensation, indigestion, skin diseases, leprosy, psychopathy, heart weakness, hyperacidity, jaundice, cough, bronchitis inflammations, diarrhea, dysentery, gastric irritability, menorrhagia, leucorrhoea, spermatorrhoea, intermittent fever and general debility. Some important Ayurvedic formulation of Chandan are Ayaskrti, Chandanasava, Chandanadi churna, Chandanadi Taila, etc.

1. In the case of Gonorrhoea, Sandalwood powder is given with cow's milk.
2. For diarrhea, dysentery the infusion of wood powder is used as astringent.
3. For excessive thirst, sandal powder is taken with coconut water.

The dose of wood in powder form for internal administration, as given in Ayurvedic Pharmacopeia of India is 3-6 grams.

Sandal wood is a great remedy for many skin condition. It is used for the skin lightening, brightening, toning, scrubbing, etc. It works due to its anti-septic, anti-fungal, antibacterial, cooling, soothing and anti-inflammatory properties.

Different types of Chandan:

Chandanadi Tritiya Varga[8]- In this group 79 drugs have been enumerated. Chandana (*Santalum album* Linn), Rakta Chandan (*Pterocarpus santalinus* Linn), Kuchandana (*Caesalpinia sappan* Linn), Kaliyakam (Yellow variety of Chandan), Barbarikam- a variety of Chandan. Kumkuma (*Crocus sativus* Linn), Ushira (*Vetiveria zizaniodes* Linn), Priyangu (*Callicarpa macrophylla* Vahl), Tooni (*Cedrela toona* Roxb), Gorochana (Bezoar), Turushka (*Liquidambar orientalis* Miller), Agarū (*Aquilaria agallocha* Roxb), Kaleyaka- An Agarū vishesha. Kasturi (*Moschus moschiferus* Linn), Karpura (*Cinnamomum camphora* Nees & Eberm), Jatipatri (*Myristica fragrans* Houtt)- The red outer covering of the Jatiphala is known as Jatipatri. Jatipahala (*Myristica fragrans* Houtt), Kankolaka (*Piper cubeba* Linn), Pooga (*Areca catechu* Linn), Lavanga (*Syzygium aromaticum* Linn), Nalika, Mansi (*Nordostachys jatamansi* DC), Gandha mansi (*Selinum tenuifolium* Wall), Kustha (*Saussurea lappa* C.B. Clark), Renuka, Tagara (*Valeriana wallichii* DC), Pariplavam- a *Cyperus* sp. Nakham (*Helix aspera*), Vyaghra nakha, Sprukka (*Delphinium zalil* Aitch & Hemsl), Bola (*Commiphora myrrha* Holmes), Damana (*Artemisia vulgaris* Linn), Dama- Damana vishesha. Mura (*Selinum* sp), Sthauneyaka (*Taxus baccata* Linn), Choraka (*Angelica glauca* Edgw), Shaileya (*Parmelia perlata* Ach), Elavaluka (*Prunus cerasus* Linn), Sarala (*Pinus longifolia* Roxb), Saptaparna (*Alstonia scholaris* R. Br), Laksha (Lac), Tamalaki (*Phyllanthus niruri*-Bhumi amalaki),

Lamajjaka, Padmaka (Prunus puddum Roxb. Ex Wall), Dhataki (Woodfordia fruticosa Kurz), Prapaundarika, Karchura (Curcuma zedoaria Rosc), Manashila (Realgar), Sidhura (Redlead), Girisindhura, Saurashtri mruttika (Multani mitti), Gandhaka (Sulphur), Vatasaugandhika, Ambika, Siktaka (Wax), Raala, Kasisa (Iron sulphate), Pushpa kasisa- a variety of kasisa, Guggulu (Balsamodendron mukul Hook ex Stocks), Kunduru, Shriveshthaka, Shallaki (Boswellia serrate Roxb), Kampillaka (Mallotus philippinensis Muell Arg), Kankustha, Bhallataka (Semicarpus anacardium Linn), Tutthya (Copper sulphate), Hema makshikam (Copper pyrite), Anjana (Galena), Samudraphena (Os sepiae), Chakshushya (Cassia absus Linn), Rasanjana, Pushpanjana (Zinc oxide), Shilajatu, Gairika (Ochre), Suvarna gairika, Kataka (Strychnos potatorum Linn), Lodhra (Symplocos racemosa Roxb), Kramuka- A Lodhra vishesha. Shankha (Conch).

Uses swetha chandan

The plant was mainly exploited for fragrant sandalwood oil obtained by steam distillation. A small evergreen glabrous tree with slender drooping branches the sapwood white and odorless. The heartwood yellowish brown strongly scented. Leaves of dimension 3.8 – 6.3 by 1.6 to 3.2 cm; are elliptic lanceolate, subacute glabrous, and entire thin base acute; petioles 1 – 1.3 cm long slender flowers, brownish purple induorous, in terminal and auxiliary paniculate cymes shorter than leaves. Perianth

campanulated limb of 4, valvate triangular segments stamens 4, exerted, alternating with 4 rounded obtuse scales. Drupe globose 1.3cm diameter. Purple black; endocarp hardribbed fruit conelaeid about size of pea, spherical crowned by rim like remains of perianth tube, smooth, rather flesh, nearly black, seed solitary

Uses: Sandalwood is mainly used as coolant, and also sedative effect and astringent activity, making it useful as disinfectant in genitourinary and bronchial tracts, diuretic, expectorant and stimulant. The sweet powerful and lasting odor makes Sandalwood oil useful in perfume industry. The same is also used as tonic for heart, stomach liver, anti-poison, fever, memory improvement and as a blood purifier. Various uses mentioned in Ayurveda system about sandalwood are in treatment of various other ailments like diarrhea with bleeding intrinsic hemorrhage bleeding piles, vomiting, poisoning, hiccoughs initial phase of pox, urticaria, eye infections and inflammation of umbilicus.

Skin cancer- and chemo preventive efficacy of α Santalol: α -santalol, an active component of sandalwood oil, has been studied for its skin cancer preventive efficacy in murine models of skin carcinogenesis; employing human epidermoid carcinoma A-431 cells It was assessed whether α -santalol at concentrations of 25-75 μ ml resulted in a concentration and a time dependant decrease in a cell number, which was largely due to cell death. Mechanistic

studies showed an involvement of caspase-3 activation and poly (ADP-ribose) polymerase cleavage & disruption of the mitochondrial membrane potential and cytochrome-C release into the cytosol, thereby suggesting involvement of both caspase – dependant and independent pathways. Antioxidant activity: Santalum album, along with other medicinal plants used in Ayurvedic Rasayana like Embellica officinalis L, Curcuma longa L, Mangifera indica L, Momordica charantia L, Swertia chirata Buch-ham, Withania somnifera L when viewed for their historical, etymological, morphological, phytochemical and pharmacological have proven to contain antioxidant principles which justify their use in traditional medicine in the past as well as the present. In treatment of anginal attacks as herbal Kuan- Xiong aerosol: Kuan- Xiong aerosol contains sandalwood oil along with oils of Piper longum, Dryobalanops aromatica, Asarum seiboldi, Alpinia officinarum. An immediate and quick relief in anginal pain was proved in 69 cases of angina pectoris in comparison with nitroglycerine. Studies on the mechanism of action revealed to be different from nitroglycerine. The evaluation of nitric oxide scavenging activity of certain Indian plants in vitro: a preliminary study: The extracts of Indian medicinal plants including S.album were examined for their possible regulatory effect on nitric oxide (NO) levels using sodium nitroprusside as an NO donor in vitro. Most of the plant extracts demonstrated direct dose dependant scavenging on NO and exhibited

significant activity. Clinical evaluation in treatment of various eye infections as herbal eye-drop preparation: Herbal eye drops containing Sandalwood Nimba, Bhringaraj, Nirgundi, Sobhanjana, Punarnava, Satapatri, Madhu etc were studied in cases of refractive error and cataract cases with herbal eye drop for six months.

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