



## WHITE SANDAL (*SANTALUM ALBUM* L.), A PRECIOUS MEDICINAL AND TIMBER YIELDING PLANT : A SHORT REVIEW

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### Introduction

Its wood known commercially as ‘East Indian Sandalwood’ and essential oil from it as ‘East Indian Sandalwood Oil’ are among the oldest known perfumery materials. Both wood and oil are used in incense, perfumes and in medicine and are of great commercial importance. Sandalwood being closely grained and amenable to carrying, is some of the finest woods for the purpose. It is used for making idols, boxes and other curios of exquisite beauty (Srinivasan *et al.*, 1992). Power of heartwood upon steam distillation yields the East Indian Sandalwood oil which is rated very high for its sweet fragrant, persistent, spicy, warm, woody note, non-varying composition and fixative property. Apart from its importance as a supremely satisfying source of fragrance, it finds use in medicine as an antiseptic, antipyretic, antiscabietic, diuretic, expectorant, stimulant and for treatment of bronchitis, dysuria, gonorrhoea and urinary infections (Das, 2013; Das and Tah, 2013; Das and Tah, 2014; Handa *et al.*, 1951; Okasaki and Oshima, 1953; Winter, 1958; Dastur, 1962; Jain, 1968). However, its use as a base of fragrance has far outweighed its use in medicine. Indian Sandalwood is highly valued for its fragrant heartwood, which consists of the highest oil (upto 6%) as well as santalol ( $\alpha$  &  $\beta$  90%) contents in oil as compared to other species of the genus *Santalum* (Srinivasan *et al.*, 1992). Sandalwood oil is used in world – class perfumes due to its excellent fixative properties & attars in Indian perfumes (Anonymous, 1972).

During 1918, Shastri a renowned chemist who studied intricacies of soap manufacturing at London, started experimenting natural sandal oil use in soap industry. In these experiments, sandal oil maintained its original fragrance & properties intact. The protecting,

smoothing, moisturizing, hydrating and skin anti-wrinkling properties of sandal oil are praiseworthy even in the form of soap. Sandalwood is the blend of economic and traditional culture from time immemorial. It not only finds its place in the modern era but has a history of 3000 years in the medicinal system of Ayurveda by Susrutha and Charaka Samhita. Essential oil of Sandal is formed by the plant cells and reservoir of solar healing power. It is described as lifeblood of the plant. Marcel Lavabre, a French Aroma Therapist, went one step ahead and rightly said “essential oils are the ultimate manifestation of a plant’s enjoyment of life”. When one smells the fragrance, it is the tiny droplets of air borne essential oil of sandal, which triggers a response in an olfactory epithelium or smell sensors in roof of the nose. From here it is just one nerve synapse to the limbic system of the brain, which regulates motor activities, primary drives, emotions and memories. Impulses are then transmitted to the hypothalamus, which regulates bodily functions like temperature, thirst, hunger, blood sugar level, growth, sleep and wake patterns, sexual arousal and the emotion. Ultimately, the pituitary is stimulated next, which activates the endocrine system which in turn controls digestion, emotional and sexual behavior, responses to stress and all metabolic process. Bhat and Prajapathi (2007) described medicinal and cosmetic uses of sandal in the context of ancient literature. Madhu *et al.* (2014) opined that the oil present in the heartwood of the tree makes it a unique and valuable asset of the plant kingdom. Sandalwood is used to make artifacts and intrinsic carvings and its oil is used in manufacturing perfumes, incense sticks and in medicines.

### Medicinal uses

Ayurveda translates into English as the Science of Life (Ayur - life, veda - science). Ayurveda is the oldest

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and most developed life science of natural healing in the world. Life is the outcome of the union of body (Sharir), sense organs (Indriya), Psyche (Mana) and Soul (Atma).

Ayurveda is not merely a system of Healing, but an entire way of life that aims to bring about the perfect balance of the entire personality - body, mind and spirit. Ayurveda is based on theory of tridosha of the three Biological forces - Vata, Pitta and Kapha. Disease arises when there is an imbalance among the three Doshas and aim of the therapy is to bring about the required equilibrium.

**AyurvedaTravelMall.com** offers us an opportunity to combine a Tropical vacation along with Ayurveda healing or rejuvenation. We offer you a wonderful selection of Ayurveda health resorts in Kerala, India to choose from. And a word about Kerala : National Geographic magazine chose Kerala as one of the 50 must see places on earth.

Kairali is one of its kind unique and exclusive Ayurvedic Health Resort at Palakkad, Kerala, South India, where one could stay in a paradise like atmosphere and experience various Ayurvedic Therapies. Kairali Ayurvedic Health Resort is spread across 50 acres of lush green and beautifully landscaped garden with 30 independent villas designed distinctively different from each other and having luxurious, comfortable and with modern facilities.

Kairali is designed to retain traditional values yet contemporary to suit modern days living. Kairali is the one and only exclusive Ayurvedic Health Resort practicing Panchakarma treatments for rejuvenation, detoxification and treatments for various ailments including Yoga and Meditation practiced under the supervision of highly qualified and experienced Doctors.

Other features of Kairali Resort are swimming pool, indoor recreations, astrologer & palmist on request, full fledged restaurant, which serves delicious and nutritious food, library and conference hall with a seating capacity of 80 people.

### **Good news to kidney stone patients:**

The pain of kidney stones when becomes unbearable, you start finding remedies, and suddenly think of removing it, by surgically or ESWL or pcnl. Even after going through any one of them, you start feeling severe pains within two three months or two three years, because the formation process re-mains on.

This is my experience that, those who eat specially the junk food, they get hard calcium oxalates (hard to hammer also). And those who have followed *Regional*

*Traditional Food Culture*, not gone to any doctors till now.

There are four types of kidney stones, Calcium Oxalates, Uric Acid, Struvite and Cystine. 60% to 70% of the kidney stones patients are of Calcium Oxalates.

Now a days this is widely seen that the young generation is getting more affected from this kidney stones disease, due to unhealthy food. And those who eat junk food, specially the biscuits, cookies, bread (yeast added), rusk, deep oil fried, roasted, baked, fridge items like chilled water, soft drinks, ice creams, are also getting affected their health, by one or the other issues.

'*Health is Wealth*' - the meaning of this can be understood, only when the pain starts, and the person starts seeking permanent solution for this disease.

There are so many systems of medicine, among them all, Ayurveda assures you long term relief for the kidney stones relief, but the thing is you have to get addicted to your own Regional Traditional Food Culture, be punctual for your food, drink water only whenever you feel thirsty, that too the quantity you actually needed. Don't suppress the urge of urination and stool - increases toxins in the body. It is always wise and better to keep sufficient gap between two meals, to digest well.

The medicine, which has got more than 35 years experience, relieves pain and starts dissolving the kidney stones, for rare people the stones have come out, otherwise, the stones get dissolved inside only.

Effective Ayurvedic treatment for back pain, knee joint pain, asthma, diabetes infertility, hair regrowth, knee pain, dandruff, paralysis, obesity, pimples, migrane, hair loss, hair fall, skin diseases, fibroids, piles, weight loss, constipation, acidity, osteoarthritis, cholestrol, jauntice, sciatica, osteoporosis, hemorrhoids, gastric problms, spondylitis, cough, insomnia, psoriasis, rheumatoid arthritis, PCOS , sinusitis etc.

[On-line free Consultancy: <http://www.krishnenduayur.com/contact.html>].

Used internally in chronic bronchitis, a few drops on sugar giving relief; also in gonorrhoea and gleet; in chronic cystitis, with benzoic and boric acids. Much used as a perfume for different purposes. The wood is used for making fancy articles and is much carved.

Fluid extract, 1 to 2 drachms. Oil, 5 to 20 drops.

**Adulterants** - Castor oil is often added, and on the Continent oil of cedar, made by distilling the chips remaining from the manufacture of lead pencils.

**Other Species** - *Pterocarpus santalinus* or

*Santalum rubrum* (Red Sandalwood), solely used for colouring and dyeing. Other varieties come from the Sandwich Islands, Western Australia and New Caledonia.

### Allergens

Allergen help from Maharishi Ayurveda; Allergens: The Ayurvedic solution; Spring does not have to be synonymous with Allergens; It is helpful for respiratory immunity.

### Amrit protection

Perfect balance in a jar; The inside story of a powerful Ayurvedic Rasayana; A wonderful Gift from Nature; A packet of Nature's intelligence; An intelligence compound that helps cells function normally; The best generalized antioxidant one can take.

### Aroma therapy

Ayurvedic aromatherapy; aromatherapy for perfect balance in every season; using essential oil properly; aromatherapy oils: the scent of perfection.

### Ayurveda experts suggestions for

Balanced weight; children's health; Detoxification; Digestion; Energy; Eyes and Ears; Food and beverages; Hair care; Immunity; Joints and muscles; mind and body spirit; Skin care; Good sleep; No retention of stress.

### Ayurvedic Beauty

Simple, sparkling beauty; a unique paradigm of beauty; How to look more beautiful; anyone can have beautiful hair; Ayurvedic cure for varicose veins; The healing bath as a therapeutic activity.

### Ayurvedic Diet

Ayurvedic comfort foods; Don't skip breakfast: the ayurvedic perspective; The Importance of astringent and bitter taste for balance nutrition; The ayurvedic view on drinking milk; Super fruits: an ayurvedic view on fruits; Lightening up: balancing Pitta Dosha; Vata-Pacifying Nuts; Stay cool: balancing Pitta Dosha; Embracing pure foods.

### Ayurvedic Food Tips

Allergy fighters: cilantro and coriander; Simple ways to minimize acid indigestion;

### Balanced weight control

Vata-related weight imbalances; The Ayurvedic approach to weight management: tips for pitta-related weight imbalances; Enhancing the fire elements: a unique approach to kapha-related weight gain; FAQ: body type, weight gain and obesity.

### Emotional Support

- Beating the Blues: Ayurvedic Insights into Emotional Health.
- A little something for your mood?
- Ten ways to beat Blues: Ayurvedic Recommendations for Emotional Health.
- Keep your spirits up a down economy.

### Exercise

- Wiping away fatigue.
- Recharge, restore, rejuvenate! The Ayurveda way to feeling young at any age.
- Are you fighting fit?
- From fighting fatigue to fighting fit: A Practical Ayurvedic Guide.

### Heart health

- Seven common sense Ayurvedic ways with white sandal solution to keep Heart Healthy.
- Ayurveda for a Healthy Heart.
- Have a Healthy Heart.
- Your Heart and Secret of Ojas.
- Your Magnificent Heart.
- A new look at cholesterol.
- The wisdom of a Healthy Heart.
- The secret Heart of the rose.

### Digestion and Metabolism

- The Maharshi Ayurvedic Approach to Balancing Cholesterol.
- Strengthen digestion to enhance immunity.
- The facts about cholesterol.
- How can you tell if you have ama?
- The remarkable qualities of Triphala – a famous and revered Ayurvedic formula along with a pinch of white sandal dust.
- Taking care of toxins.
- Nourish the liver to live better.
- Ayurvedic liver support.
- Digestion's hidden power : supporting transformation.
- Use rejuvenation therapy to restart digestion.
- Give thanks to your digestion.
- Happiness starts in the stomach.
- Digestion and balanced Health.

- Nine essential to support Digestion.
- Upgrading to an Ayurvedic Diet: Five secret for good digestion.
- Herbs digestion along with white sandal powder (a needle area only).
- The importance of strong digestion for healthy living.

### Immunity

- Stay sniffle free this winter.
- Turning the heat up on the common cold.
- Ways to boost immunity this winter.
- Keys to respiratory immunity from Maharshi Ayurveda.
- You can stay healthy this winter.
- Sinus help is on the way.
- Children's health: stronger immunity through digestion.
- Prepare for flu season with Ayurvedic purification. With white sandal mixture.
- Insight into immunity.
- Five defenses against white sandal Ayurvedic medicines.
- Understanding the six stages of diseases.
- Immune-boosting winter foods and drinks
- Enjoy your youth with a rational harmony.

### Joints

- Joint health: flexible for fall.
- Improving joint flexibility using sandal paste or lotion.
- Ayurvedic help for Achy of Joints.
- Use Maharshi Ayurveda medicine for osteoporosis, tennis elbow, ortho-arthritis (in shoulder joint), femer bone pain etc. to keep your health in good condition through yoga and free hand exercise in a regular manner.

### Massage

- Maintain Ayurvedic foot care.
- Use Sesame oil: Revered in Ayurveda for its Healing properties.
- Use special type of Ayurvedic sandal massage.
- The story of the Next Generation of Skin Care: Youthful Skin Massage.
- Use Abhyanga – the Ayurvedic daily massage.

- How to do an Ayurvedic Spa Treatment in your Own Home – follow the advice of any good Ayurvedic/uninani/allopathy/ homeopathy medical practitioner.

### Menopause

Menopause relief; Menopause can be comfortable – the Ayurvedic perspective; Relief from hot flashes; the Ayurvedic way; Prepare a healthy menopause; Managing menopause naturally with Ayurveda; Menopause re-defined.

### Prostrate Health

A powerful approach to Prostrate health; A Ayurvedic view on Prostrate health; Maintaining Prostrate health; Prostrate protection: For Men of a Certain Age; Ayurvedic Approach to Prostrate health.

### Miscellaneous

Rose Halva and Cashew cookies; Balance vata Dosha with carrot milk; Cook an Ayurvedic Thanks giving Feast; Ayurvedic recipes for heart; Recipes for fall cleaning; and Celestial Cilantro Chutney; Pumpkin Soup and Party Mix; Food and Holiday Ojas; Cooking with Rose; An Ayurvedic Lunches; Ayurvedic Rose Petal Spread Recipes; Vegetable Kichari; Spring Recipes.

Jahan and Rahman (2014) explained that sandalwood dissolves inflammation and tumors and stabilizes palpitation. Sandalwood is used as a disinfectant in bronchial and genitourinary tract infection. A paste of the wood is applied in burns, fever and headache. It relieves thirst. It is also used in acne, biliousness, blood impurities, bronchitis, cough, depression, diarrhea, leucorrhoea, menorrhagia and sore throat. It is one of the potential anti-ulcer drug used in Unani system of medicine. Various uses mentioned in Ayurveda system about sandalwood are in treatment of various other ailments like diarrhoea with bleeding, intrinsic hemorrhage, bleeding piles, vomiting, poisoning, hiccoughs, initial phase of pox, urticaria, eye infections and inflammation of umbilicus (Benencia and Courreges, 1999; Desai *et al.*, 1991).  $\alpha$ -santalol, an active principle of Sandalwood oil, has been studied for its skin cancer preventive efficacy in murine models of skin carcinogenesis, employing human epidermoid carcinoma cells. It was assessed whether  $\alpha$ -santalol at concentrations of 25-75  $\mu$ ml resulted in a concentrations and a time dependant decrease in a cell number, which was largely due to cell death. Dwivedi *et al.* (2014) enumerated that both the sandalwood powder and its essential oil have been used in Ayurveda for curing genito-urinary disorders, gastric irritability, dysentery, excessive sweating, high blood pressure, heart pain,

inducing sleeping, cleaning wounds, respiratory disorders, fever and different skin diseases.

### Religious uses

Sandalwood is often used for rituals or ceremonies in Hinduism. Sandalwood is considered in alternative medicine to bring one closer with the divine. Sandalwood essential oil, very expensive in its pure form, is used primarily for Ayurvedic purposes and treating anxiety. In Buddhism, sandalwoods are considered to be of the Padma (lotus) group and attributed to the Bodhisattva Amitabha. It is believed that the sandalwood scent helps to transform one's desires and maintained a person's alertness during meditation. Sandalwood is also one of the most popular scents used for incense used when offering incense to the Buddha.

### Hinduism

Sandalwood paste is integral to rituals and ceremonies, to mark religious utensils and to decorate the icons of the deities. It is also distributed to devotees, who apply it to their foreheads or the necks and chests. Preparation of the paste is a duty fit only for the pure, so is entrusted in temples and during ceremonies only to priests. The paste is prepared by grinding wood by hand upon granite slabs shaped for the purpose. With the slow addition of water, a thick paste results (called *kalabham* in Malayalam language and "gandha" in Kannada), which is mixed with saffron or other such pigments to make *chandanam*. *Chandanam*, further mixed with herbs, perfumes, pigments and some other compounds, results in *javadhu*. *Kalabham*, *chandanam* and *javadhu* are dried and used as *kalabham* powder, *chandanam* powder, *javadhu* powder, respectively. *Chandanam* powder is very popular in India and is also used in Nepal. In Tirupati after religious tonsure, sandalwood paste is applied to protect the skin. In Hinduism and Ayurveda, sandalwood is thought to bring one closer to the divine. Thus, it is one of the most used holy elements in Hindu and Vedic societies.

### Jainism

Sandalwood use is integral part of daily practices of Jainism. Sandalwood paste mixed with saffrons used to worship tirthankar Jain Deities. Sandalwood powder is showered as blessings by Jain Monks and Nuns (Sadhus and Sadhvis) to their disciples and followers.

### Buddhism

Sandalwood is mentioned in various suttas of the Pâli Canon. In some Buddhist traditions, sandalwood is considered to be of the *padma* (lotus) group and attributed to Amitabha Buddha. Sandalwood scent is believed by

some to transform one's desires and maintain a person's alertness while in meditation. It is also one of the more popular scents used when offering incense to the Buddha and the guru.

### Islam

In *sufi* tradition, sandalwood paste is applied on the *sufi*'s grave by the disciples as a mark of devotion. It is practiced particularly among the Indian Subcontinent disciples. In the Tamil culture irrespective of religious identity, sandalwood paste or powder is applied to the graves of *sufis* as a mark of devotion and respect.

### Chinese and Japanese religions

Sandalwood, along with agarwood, is the most commonly used incense material by the Chinese and Japanese in worship and various ceremonies. However, Taoists are forbidden from using sandalwood (as well as benzoin resin, frankincense, foreign produced) incense and instead either use agarwood, or better still *Acronychia pedunculata*, in worship (Dastur, 1962).

### Zoroastrianism

Zoroastrians offer sandalwood twigs to the firekeeping priests who offer the sandalwood to the fire to keep the fire burning. Sandalwood is offered to all of the three grades of fire in the fire temple, including the Atash Dadgahs. Sandalwood is not offered to the *divo*, a homemade lamp. Often, money is offered to the *mobad* (for religious expenditures) along with the sandalwood. Sandalwood is called *sukhar* in the Zoroastrian community. The sandalwood in the fire temple is often more expensive to buy than at a Zoroastrian store. It is often a source of income for the fire temple.

### Domestic uses

Sandalwood's main component  $\alpha$ -santalol (90%) has antimicrobial properties. It is used in aroma therapy and to prepare soaps. Due to this antimicrobial activity, it can be used to clear skin from spots and blackheads, but it must always be properly diluted with carrier oil. Sandalwood paste is used as an embalming paste in temples on idols. The bindi dot is sometimes created from sandalwood paste used on forehead during worship.

The essential oil extracted from sandalwood is beneficial for toning up the skin as well as healing skin disorders when applied externally. To treat the infected areas on the skin dilute a few drops of diluted sandalwood oil in water and soak the affected area with the solution directly. This will not only help in healing the skin infection but also tone up the epidermis. Sandalwood together with agarwood is the most popular and commonly used incense

material by the Chinese and Japanese in worship and in various ceremonies. It has also extensive uses in Indian incense, religiously or otherwise.

### Industrial uses

The great value of this species is its heartwood and oil, which are widely used in cosmetic, perfume, medicine and aroma therapy industries (Srinivasan *et al.*, 1992; Kim *et al.*, 2006). Sandal bark is one of the raw materials for the industry. Benzene extract of powdered bark on repeated Chromatography over alumina gave a new triterpene solid ester (yield 0.3%) which has been identified as urs-12-en-3-beta-yl-palmitate (Shankaranarayana *et al.*, 1980b). The compound is a chemosterilant and insect growth inhibitor too (Shankaranarayana *et al.*, 1979a,b). Seeds contain 50-60% of a drying oil composed of 80% santalbic, 2.5% stearolic and 10% oleic acids.

### Cosmetics and Beauty Therapy

There is a wide range of medicinal properties of sandalwood that makes it the best and most reliable of home remedies for face and all types of skin conditions like eczema, psoriasis and ringworm rash treatment.

**Anti-tanning Property** : Sandalwood paste is one of the best clear skin remedies that can be used to sooth harsh sunburns and clear skin tanning. The natural oils in sandalwood naturally clear skin complexion and add a healthy glow to it.

**Anti-aging Property** : The toning effect of sandalwood helps in shrinking skin pores that provides an even skin texture and prevents sagging and aging skin. It tightens the drooping skin tissues in order to provide a supple and youthful appearance to the skin.

**Skin Softening effect** : One of the most effective sandalwood oil benefits is ensuring baby soft skin. Sandalwood oil can either be used by itself or infused with other natural oils and massaged into the skin to get best results.

**Pimple and Acne Treatment** : The powerful antibacterial properties of sandalwood work effectively in fighting the bacteria and fungi and prevents the breakout of pimples and acne.

**Itch Relief** : Skin itching and infections can be relieved within 30 minutes of application of sandalwood on the skin. It also helps in subsiding inflammation, skin redness and sore skin.

**Prickly heat solution** : Excessive heat and sweating during summer season often result in itchy and painful prickly heat. The cooling astringent property of

sandalwood helps in cooling the skin and curing prickly heat naturally.

**Clear Complexion** : Dark and dull complexion can make you unappealing and unattractive. Topical application of sandalwood mixed with other natural ingredients clear skin naturally without any side-effects. Best Sandalwood Remedies for Skin. Skin is a delicate organ, and it should be treated with special care. Although, there is a wide range of over the counter skin creams and lotions, but the harsh chemicals present in these products take a toll on the skin and damage it permanently. Therefore, it is best to opt for natural solutions. Here, we give you a few sandalwood home remedies for healthy skin that you can prepare in your home. The best thing about these remedies is that only natural ingredients are used in them that are readily available in your kitchen.

### Sandalwood Remedy for Pimples

Excessive oil and sebum deposited on skin attracts dirt and impurities and clogs the skin pores that lead to acne and pimple breakouts. Sandalwood is the best homemade treatment for acne and pimple breakouts. Make a paste by mixing 1 tbsp of sandalwood powder with ½ tsp of turmeric powder and 1 tsp of rose water. Apply a coat of this paste on your face and keep for about 20 minutes and then wash it off with water. By doing this, you can reduce your pimples and also you can feel your skin happy.



Source: Indian Ayurvedic Council web-site.

### Sandalwood Remedy for skin spots

Liver dysfunction, exposure to sun rays and increasing age results in the formation of age spots and pigmentation. Take sandalwood powder and turmeric powder in equal quantity and make a paste of milk. Add a pinch of camphor powder to it. Massage your face with the paste and leave it for the night. It not only gives you a cool feeling but

also cleans away the skin marks.

### Sandalwood Remedy for Soft Skin

With progressing age and constant exposure to environmental pollution, the skin loses its softness. Take equal measures of sandalwood powder, turmeric powder or holy powder and lemon juice to make a paste and apply it on your face. Rinse with cool water after 30 minutes. It would make your skin not just soft but also marks free.



Source: Indian Ayurvedic Council web-site.

### Sandalwood Remedy for Open Pores

Open skin pores enhances the secretion of sebum and provides an uneven appearance to the skin. Make a paste of sandalwood powder and rose water and apply it on your face. Wash after 15 minutes. For the ones with oily skin, this paste prevents pimples and for others it cleanses your pores.



Source: Indian Ayurvedic Council web-site.

### Sandalwood Scrub

Exfoliation is an important part of daily skin care that removes the layer of dead cells and deposits from skin, soften heels and cracked skin and add a natural glow

to the skin of the body. Mix sandalwood powder and black chickpea powder in equal quantity either of milk or rose water; apply the paste to your face and massage in soft circular motion for 5 minutes. Leave it on for another 30 minutes and wash off with water. This is an effective scrub for exfoliating the skin and removing dead cells, dirt and impurities.



Source: Indian Ayurvedic Council web-site.

### Sandalwood Remedy for Clear complexion

Even the brightest of complexion can be dull and lifeless due to the harmful effects of free radicals and oxidative stress. Sandalwood is one of the best natural remedies, which might very well be the answer to the question of how to get a clear face in a week. Mix 1 tbsp of sandalwood powder with 1 tbsp of almond paste with 1/2 tsp each of honey and milk. Mix well and apply on face and neck. Wait for 1 hour and wash off with water. Applying this remedy 3 to 4 times every week helps in lighting skin tone.



Source: Indian Ayurvedic Council web-site.

### Sandalwood remedy for anti-tanning

A day out in the beach or a picnic in the park can be fun and full of enjoyment, but it takes a harsh toll on the exposed skin causing severe skin tanning. But, sandalwood is the ultimate solution to the question of how to protect our face from the sun.

### Procedure

Mix one teaspoon of sandalwood powder with 1 teaspoon of sour curd and ½ teaspoon of honey. Blend it well and apply on face, hands and other tanned areas of the body. Leave it on for 1 hour and wash off with water. It not only add natural glow to skin but also removes skin tan.

### Sandalwood Remedy for Anti-aging

Progressing age and continuous cellular damage caused by free radicals lead to the appearance of wrinkles, fine lines and furrows. But it can be prevented and controlled with regular consumption of anti aging fruits and juices and use of sandalwood remedies.

### Procedure

Mix 2 teaspoon of sandalwood powder with 1 egg yolk and 1 teaspoon of honey. Apply the pack evenly on face and neck. Wait for 1 hour and wash with water it helps in increasing the elasticity of sagging and drooping skin.

### Sandalwood Remedy for Prickly Heat

The summer season brings with it sweat and heat that often causes irritating prickly heat.

#### *Procedure:*

Mix 2 teaspoon of sandalwood powder with 2 teaspoon of water to turn it into a thick paste. Apply this paste on the affected areas on face, arms, neck, chest and back. Wait for 1 hour and wash it off with water. This helps in soothing and cooling the irritation and burn caused by prickly heat and excessive sweating. It is safe remedy for children. Rather, it is better to use it since childhood to turn their skin glossy and free from any skin disease or skin scarcinosis.



Source: Indian Ayurvedic Council web-site.

### Sandalwood Remedy for Rashes and Allergies

Sensitive skin is prone to rashes, infection and allergies.

### Procedure

Mix 1 teaspoon of sandalwood powder with a pinch of powder camphor, add some water to it to make a paste of thick consistency. Apply the paste evenly on the skin allergy and rashes. Let it dry of for 1 hour and then wash it away with cold water. This is one of the best natural ways to treat psoriasis, eczema, allergies and burns.

### No side effect from Sandalwood

Sandalwood is being used for centuries now. Mostly, it is used in Ayurveda. It relieves from any kind of cuts of wound or ulcerates and improvises your skin. As it is natural substance, routine use of sandalwood will not show any side effects. Tips of clear skin are incomplete without the inclusion of sandalwood into it.

### Additional benefits of sandalwood

Apart from the ones mentioned above, sandalwood remedies for skin have many more assets. Here, we go with few additional benefits of using this sandalwood.



Source: Indian Ayurvedic Council web-site.

- Sandalwood has the anti-bacterial trait and hence it is used as an herbal antiseptic. Hence, it is used for curing bruises, scotches and also burns.
- If any part of skin senses any itching or burning sensation make a paste of sandalwood powder, turmeric powder and lemon juice and apply it on the affected area. It will reduce not only the itch, but also the the ruddiness caused due to it.
- Sandalwood oil is proved effective in moisturizing dry skin. Swelling and itch caused by an insect bite can also be reduced by applying a paste of sandalwood powder.
- Not just these, the use of sandalwood in any form is beneficial, be it oil or soap.
- Sandalwood balances the mechanism of your body, improves your digestion process, respiratory process and strengthens your nervous system.

### Sandalwood Remedies for Skin: Sandalwood oil

Sandalwood oil is a widely popular essential oil extracted from sandalwood through steam distillation of

the chips and billets of the heartwood. It contains 90% of sesquiterpenic alcohols of which 60% is tricyclic alfa santalol and 25% is beta santalol. Sandalwood essential oil has amazing medicinal properties, and it works effectively as an antiseptic, anti-inflammatory, disinfectant, carminative and sedative. There are three varieties of sandalwood – Indian sandalwood, Hawaiian sandalwood and Australian sandalwood of which Indian sandalwood is considered as best. The excellent cleansing, astringent and toning properties of sandalwood oil make it a common ingredient in facial oils, soaps creams and lotions. Sandalwood oil is especially effective for curing inflamed, chapped and sensitive skin. Sandalwood oil is considered to be one of the best and natural sandalwood remedies for skin. This oil can reduce tan on skin of human body.

### Procedure

- Take 5 teaspoon of coconut oil, 2 teaspoon of almond oil and 4 teaspoon of sandalwood powder and make a paste. Apply this oil on the tanned part of skin for 10 days. You can see the tan fade off.
- If you sweat a lot then apply the paste of sandalwood powder on your body for 15 days before having a bath. This is an effective natural solution to the question of how to get rid of excessive sweating and body odour that also gives your body a wonderful fragrance. You can also use sandalwood for preparing homemade face packs for healthy skin.
- Sandalwood oil can be mixed with other carrier oils and applied to de-hydrate and aging skin to gain back vitality and youthfulness of skin.
- Regular application of sandalwood oil soothes and softens skin and reduces the appearance of wrinkles, fine lines and blemishes.
- Sandalwood oil can be used topically to treat eczema, inflammation, itching and scars.
- The calming and soothing properties of sandalwood oil help in relieving anxiety, tension and stress and ensures restful sleep.

**Remarkable note:** If you want to maintain and have a clear skin then sandalwood remedy is the best option. These sandalwood remedies for skin, work only if perform your activity for a couple of weeks on a regular basis.

### References

- Anonymous (1972). *Santalum*. Wealth of India. Raw Materials Rh-SO-9, pp 208-224. Publication and Information Directorate, CSIR, New-Delhi.
- Anonymous (1985). Proceeding of the Govt. of Karnataka G.O. No. FFD 76 FSW 85, 12.121985.
- Anonymous (1987). Research Highlights, 1977 -1987. Sandal Research Center, Bangalore.
- Benencia, F. and M. C. Courreges (1999). Antiviral activity of Sandalwood oil against Herpes Simplex Viruses 1 & 2. *Phytomedicine*, **6(2)** : 119 - 123.
- Bhat, S. and R. C. Prajapathi (2007). Sandal in ancient India – medicinal and cosmetic uses. *Proceedings of National Seminar in IWST*, Bangalore (December 12-13, 2007) pp 192-95.
- Das, S. C. (2013). Growth and yield of white sandal (*Santalum album* L.) in South West Bengal. *Indian Foreste*, **139 (2)** : 109-112.
- Das, S. C. and J. Tah (2013). Effect of GA<sub>3</sub> on seed germination of sandal (*Santalum album* L.). *International Journal of Current Science*, **8** : E 79-84.
- Das, S. C. and J. Tah (2014). Sandalwood (*Santalum album* L.): its adaptability with different host species in varied edaphic condition of South-West Bengal. Abstracts of International Seminar on Sandalwood: Current Trends and Future Prospects in IWST, Bangalore (February 26-28, 2014) pp 22.
- Dastur, J. F. (1962). *Medicinal plants of India and Pakistan*. D.B. Taraporevala Sons & Co. Pvt. Ltd. Bombay-1.
- Desai, V. B., K. Rakesh, Upma Sindhu, A. Kumar and S. Arora (1991). Pharmacological screening of HESP and Sandalwood oil. *Indian Perfumer*, **35(2)** : 69-70.
- Handa, K. L., L.D. Kapoor, I. C. Chopra and Somnath (1951). Present position of crude drugs used in the indigenous medicine. *Ind. J. Pharm.*, **13** : 28.
- Jain, S. K. (1968). *Medicinal Plants*. National Book Trust, New Delhi, 123-125.
- Madhu, S., A. Srivastava and A. Kanfode (2014). History, traditional values, uses of the Sandalwood in the current scenario and approaches to revive the lost glory of a precious paragon. Abstracts of International Seminar on Sandalwood: Current Trends and Future Prospects in IWST, Bangalore (February 26-28, 2014) pp 16.
- Okasaki, K. and S. Oshima (1953). Antimicrobial effect of essential oils. *J. Pharm. Soc. Japan*, **73** : 344.
- Shankaranarayana, K. H., K.S. Ayyar and G. S. Krishna Rao (1980a). Insect growth inhibitor from the bark of *Santalum album* L. *Phytochemistry*, **13** : 239-240.
- Shankaranarayana, K. H., K. S. Ayyar and G. S. Krishna Rao (1980b). Chemical constituents of the bark of *Santalum album* L. *Curr. Sci.*, **49** : 198 – 199.
- Shankaranarayana, K. H. and G. S. Krishna Rao (1982). Sodium santalbate – dimethyl sulphate inclusion complex. *JAOCS*, **59** : 240 – 241.
- Srinivasan, V. V., V. R. Sivaramakrishnan, C. R. Rangaswamy, H. S. Ananthapadmanabha and K.H. (1992). Sandal – *Santalum album* Linn. Indian Council of Forestry Research and Education. Publsd. ICFRE, Bangalore.
- Winter, A. G. (1958). Significance of volatile oils for treatment of urinary passage infections. *Planta Medica*, **6** : 306.
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