

Vetiveria Zizanioides

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Vetiver - *Chrysopogon zizanioides* (previously *Vetiveria zizanioides*) is a perennial grass of the Poaceae family, native to India. The name comes from Tamil. In western and northern India, it is popularly known as khus, giving the earlier English names cuscus, cuss cuss, kuss-kuss grass, etc. Vetiver can grow up to 1.5 meters high and form clumps as wide. The stems are tall and the leaves are long, thin, and rather rigid; the flowers are brownish purple. Unlike most grasses, which form horizontally spreading mat-like root systems, vetiver's roots grow downward, 2–4 meters in depth. Vetiver is closely related to other fragrant grasses such as Lemon Grass (*Cymbopogon citratus*), citronella (*Cymbopogon nardus*, *C. winterianus*), and Palmarosa (*Cymbopogon martinii*). Though it originates in India, vetiver is widely cultivated in the tropical regions of the world. The world's major producers include Haiti, India, Java, and Réunion.

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Vetiver is mainly cultivated for the fragrant essential oil distilled from its roots. Worldwide production is estimated at about 250 tons per annum (Lavana). Due to its excellent fixative properties, Vetiver is used widely in high end perfumes. It is contained in 90% of all western perfumes (Lavana). Haiti is one of the leading producers of Vetiver in the world, along with Java, China, India, Brazil, and Japan. The United States, Europe, India, and Japan are the main consumers (India and Japan also produce it).

Essential Oil: *Vetiver oil or khus oil is complex oil containing over 100 identified components. Typical make up is as follows:*

<u>benzoic acid</u>	<u>furfurol</u>
<u>vetivene</u>	<u>vetivenyl vetivenate</u>
<u>terpinen-4-ol</u>	<u>5-epiprezizane</u>
<u>Khusimene</u>	<u>α-murolene</u>
<u>Khusimone</u>	<u>Calacorene</u>
<u>β-humulene</u>	<u>α-longipinene</u>
<u>γ-selinene</u>	<u>δ-selinene</u>
<u>δ-cadinene</u>	<u>valencene</u>
<u>Calarene, -gurjunene</u>	<u>α-amorphene</u>
<u>Epizizanal</u>	<u>3-epizizanol</u>
<u>Khusimol</u>	<u>Iso-khusimol</u>
<u>Valerenol</u>	<u>β-vetivone</u>
<u>α-vetivone</u>	<u>vetivazulene</u>

The oil is amber brown and rather thick. The odor of vetiver oil is described as deep, sweet, woody, smoky, earthy, amber, balsam. The best quality oil is obtained from roots that are 18 to 24 months old. The roots are dug up and cleaned then dried. Before the distillation, the roots are

chopped and soaked in water. The distillation process can take up to 18 to 24 hours. After the distillate separates into the essential oil and hydrosol, the oil is skimmed off and allowed to age for a few months to allow some undesirable notes which form during the distillation to dissipate. Like patchouli and sandalwood essential oils, the odor of vetiver develops and improves with aging. The characteristics of the oil can vary significantly depending on where the grass is grown and the climate and soil conditions. The oil distilled in Haiti and Réunion has a more floral quality to it and is considered of higher quality than the oil from Java which has a smokier scent. In the north of India, an oil is distilled from wild-growing vetiver. This oil is known as Khus or Khas and is considered superior to the oil obtained from the cultivated variety. It is rarely found outside of India as most of it is consumed within the country.

Applications/uses:

Essential oils are the secondary plant metabolites synthesized in different parts of the plant, such as the leaves, flowers, stems, roots and seeds. These are of great importance to the perfumery and the pharmaceutical industry. Natural essential oils are considered to be biodegradable and have no residual toxicity. Due to improvement in the living standards and greater liking for the natural essential oils as perfumery, flavouring and pharmaceutical ingredients the demand for natural essential oils increased exponentially.

India has been known for its rose, Vetiver and attars for several years and today its present current share in the world trade of essential oils, flavours and fragrance remains only 4 – 5%. Mentioned below are some applications of vetiver.

Herbal/Folk Tradition: The roots or rootlets have been used in Indian households for centuries. The fibers of the grass are woven into aromatic mats that are used to sleep on. The vetiver roots are used to repel insects and are layered among the clothes. The root is used to make blinds and window screens necessary to shield the intense hot sun. The blinds are sprinkled with water throughout the day creating moist cool sweet breezes.

Aromatherapy: The circulatory system is the body's main system of transport. Although there is continual research into the specific pathways and effectiveness of each oil, essential oils are generally absorbed into the circulatory system via absorption through the skin or mucous membranes. Once the oil molecules have entered the bloodstream they travel throughout the body and affect it according to their properties.

Following are some easy methods of aromatherapy that can be carried out at home:

1. **Inhalation** - add two or three drops of essential oil to a bowl of steaming hot water and breathe in the steam for a few minutes with a towel draped over your head to capture the steam with the essences.
2. **Vaporization** - the most preferred method of vaporization is to add pure essential oils to a nebulizing diffuser for dispersing micron-sized particulates into your immediate environment for aromatherapy benefits.
3. **Bathing** - add four to six drops of pure essential oils to a hot bath along with a dispersant (such as alcohol or milk) to break up the oil on the surface of the water, which avoids the oil sensitizing your skin. Or, alternatively, you can add 1 teaspoon of golden jojoba, as the carrier oil of choice, to protect the skin.
4. **Massage** - using 15 to 20 drops of pure essential oil in 1 ounce of massage oil base is one of the most relaxing and therapeutic ways to receive the aromatherapy benefits of the

oils, along with the detoxification of the body through lymph drainage and the stimulation of the entire circulatory system.

5. **Spray** - adding 1 teaspoon of essential oils to 7 ounces of distilled water along with 1 ounce of vodka or 90% isopropyl alcohol (to emulsify the oils) and then spray on bedding, linens, towels, and use as a room spray to deodorize and disinfect the air.

Medicinal uses:

6. **Anti Inflammatory:** The very soothing and cooling effect of this essential oil calms and pacifies all sorts of inflammations. But it is particularly good in giving relief from inflammations in circulatory system and nervous system. It is found to be an appropriate treatment for inflammations caused by sun stroke, dehydration and loose motion (name given to very hot and dry winds prevalent during summers in the dry regions of India and few neighbouring countries).
7. **Anti Septic:** In tropical countries like India and its neighbours, microbes and bacteria grow very fast due to their favourable hot and humid climate found in this region. Then it becomes obvious that your wounds are most likely to get septic in these places since there are plenty of bacteria here. But Mother Nature is very kind and she has provided the remedies too, right in those places. One such remedy is this Vetiver and the essential oil extracted from it. This oil efficiently stops the growth of Staphylococcus Aureus, the bacteria responsible for causing septic, and eliminates them, thereby helping cure septic and giving protection against it. Being totally safe, this oil can be applied externally on wounds or taken orally, to protect wounds as well as internal organs from septic.
8. **Aphrodisiac:** Mixed in sorbets and beverages as a flavouring agent, this oil has an aphrodisiac effect. It enhances libido and gives arousals. Since sex has more to do with the psychology (brain) than the physiology, remedy for most of the sexual disorders like frigidity, lack of libido, impotence etc. lays in the brain. Certain components of this oil stimulate those portions of brain and the problems are over.
9. **Cicatrisant:** Cicatrisant is a property by virtue of which a substance speeds up the eradication or disappearance of the scars and other marks from the skin. It promotes growth of new tissues in the affected places which replace the dead and discoloured tissues and helps achieve a uniform look. This is also useful for the post delivery stretch marks, fat cracks, after spots left by pox, burns etc.
10. **Nervine:** A tonic for the nerves is called a nervine, like our Essential Oil of Vetiver is. It takes care of the nerves and maintains them in good health. It also heals the damages done to the nerves by shock, fear, stress etc. Further, it helps get rid of nervous disorders, afflictions, epileptic and hysteric attacks, nervous and neurotic disorders such as Parkinson's Disease, lack of control over limbs etc.
11. **Sedative:** The Essential Oil of Vetiver is a well known sedative. It sedates nervous irritations, afflictions, convulsions and emotional outbursts such as anger, anxiety, epileptic and hysteric attacks, restlessness, nervousness etc. and even benefits patients of insomnia.
12. **Tonic:** The effect of a tonic on the body is quite similar to that of overhauling and servicing on a vehicle. A tonic tones up every system functioning in the body, namely the digestive system, respiratory system, circulatory system, excretory system, immune system, endocrinal system, nervous system and the neurotic system. Thus, in nutshell, it

keeps the metabolic system in order, rejuvenates the body, gives strength and boosts immunity.

13. **Vulnerary:** This property of Vetiver Essential Oil helps heal wounds by promoting growth of new tissues at the wounded place and also by keeping it safe from infections by inhibiting growth of microbes and promoting crowding of leucocytes and platelets at the place.
14. **Other Benefits:** It also benefits patients of rheumatism, arthritis, gout, muscular aches, dryness and cracking of skin etc.

Use of Vetiver Essential Oil for Emotional Grounding and Stabilizing the Emotions:

Vetiver oil is considered relaxing to an overheated, hyperactive mind and nurturing to an insecure self-identity. The oil may then be suited to the type of individual who constantly strives for perfection, but who loses touch with the ability to absorb and replenish, not letting things just be. Vetiver essential oil is said to provide stimulation to the endocrine glands (in cases of estrogen and progesterone insufficiency associated with premenstrual syndrome as well as menopause) and circulatory system, and may generally support a weakened immune system. Vetiver Oil has been noted to have an effect on lowering rapid heart rate and breathing, helping return the cardiorespiratory system to a calmer state. Vetiver oil may also be useful for acne, anxiety and depression.

Conclusion:

In recent years wide consumption of vetiver oil in fragrance and medicine industries has led to decline in the availability of vetiver oil. Since from plantation to growth of fully matured plant, the time duration is very long, distillation techniques are tough, urge for synthetically blended/made vetiver oil finds a wide area for growth in terms of research and creativity. Many leading and branded companies have already stepped in with their products like Vetacetone, Boisanol and etc which are closer in olfaction to that of vetiver oil. Search for more and more synthetic substitute is yet needed.

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