This essential oil connects us to earth's energies. It is a source of vital energy and regeneration. The earthy fragrance of the oil supports all of those who have lost touch with the earth and their roots. Vetiver nourishes people who have cold feet or have their heads in the clouds. When we lose contact with the ground beneath us, with reality, we pay the price of a weakened immune system. When in touch with the earth, we breathe fresh air, enjoy the magic of an open fire, and feel the wind blow through our hair. Fischer-Rizzi perfectly describes the wonderful unique qualities that vetiver has to revitalize us and to reconnect us with nature and earth’s energy.

**Synonyms**
Khus, khus-khus, Andropogon muricatus, vetivert

**Family**
Poaceae (Gramineae)

**Botany and origins**
*Vetiveria zizanioides* is a tall densely tufted perennial grass, which is native to the tropical regions of northern India. The main rootstock is a stout, branching rhizome developing an extensive but not deeply penetrating fibrous mat of aromatic roots. In most areas, vetiver will not bloom, and even the flowers produce sterile seeds. Vetiver does not send out lateral stems underground. It must use the ramet method to propagate. This explains why vetiver does not spread and become a weed. It has a very fast-growing potential, and the ramet roots can grow 60 cm deep within 10 weeks after planting. The plant is fast growing and it can grow into a grass hedge within 3-4 months.

In addition to the essential oil, the roots contain fructose, sucrose, glucose and, interestingly, free glycerol, not usually found in plants. The mature roots have a pleasant aroma and the highest essential oil content. Vetiver is endemic to India but was transported around the world more than a century ago. The original use of vetiver was to prevent soil erosion, since its abundant lacework or rootlets will prevent the loss of soil on mountainous slopes against excessive erosion which occurs during the wet season. Java was the major exporter of vetiver prior to the Second World War. Although commonly planted in the Philippines, it is not cultivated to produce an essential oil.

Vetiver was introduced to the Reunion Island with other essential oil crops in the mid-1950s. The finest quality vetiver is referred to as Bourbon vetiver and originates from the Reunion Islands.

Vetiver is grown commercially for oil in Java, the Seychelles, Reunion, Brazil, Haiti and Japan. In India, oil produced from vetiver collected in the wild and cultivated vetiver is differentiated by calling the former khus oil and the latter vetiver oil.

According to Lawrence, there are two main chemotypes of vetiver oil. He explains that vetiver (khus) oil produced in India originates from a fertile form and the one grown outside of India is a non-seeding, sterile form. Khus oil is primarily made for the Indian domestic market, while the rest of the world uses the oil produced from the sterile form.
**Method of extraction**

Vetiver oil is steam-distilled from cleaned and washed rootlets which are dried, cut and chopped, then soaked in water before distillation. The yield of the dried vetiver Java roots is from 1.5 to 2 percent and that of vetiver Haiti varieties from 1 to 1.5 percent.\(^6\)

**Characteristics**

Vetiver oil is an amber to brownish coloured viscous oil whose odour is sweet and heavy-woody, earthy, reminiscent of the roots and wet soil with a rich undertone of ‘precious wood’. The oil produced from rootlets that are too young tend to display some ‘green' potato-peel-like or asparagus-like top notes.\(^5\)

**Chemical composition**

Lawrence states that vetiver oil is one of, if not the most, complex essential oils produced.\(^4\)

The chemical composition of Bourbon vetiver comprised of sesquiterpene hydrocarbons (42 compounds, 25%), sesquiterpene alcohols (24 compounds, 45%), sesquiterpene ketones (10 compounds, 12%) and some acids that were not identified.\(^7\)

The chemical composition of the major oxygenated components of vetiver oil from Reunion was as follows:

- khusimol (21.5%), \(\beta\)-vetivone (3.2%), \(\alpha\)-vetivone (5.8%), unknown ketone (10.5%), elemol (0.7%), 10-epi-\(\gamma\)-eudesmol (1.2%), \(\beta\)-eudesmol (5.5%), vetiverenol + cyclocopacamphenol (6.8%), vetiselinenol (11.1%), unknown alcohol (3.7%).\(^7\)

Lawrence cites a study that confirmed that endophytic bacteria found inside the vetiver roots were capable of sesquiterpenoid biotransformations.\(^4\)

The unique earthy odour of vetiver is due to two sesquiterpene ketones: \(\alpha\)-vetivone and \(\beta\)-vetivone.\(^6\)

One study found that the vetiverol content of vetiver oil produced from organically cultivated vetiver was higher that vetiver oil produced from non-organic sources.\(^8\)

**Adulteration**

Vetiver oil is occasionally adulterated with oils from roots of other grasses or it may be cut with fractions from the isolation of vetiverol. It is also adulterated with caryophyllene, cedarwood derivatives and amyris oil.\(^5\)

**History**

Vetiver has long been valued in India for its aromatic properties. In Sri Lanka, it is known as ‘oil of tranquillity’.\(^12\) Vetiver is also known as khus khus in India, ‘miracle grass’ in Thailand and xiang-gen-cao or yan-lan-cao in China and Taiwan.\(^5\)

In India, the dried thin, wiry roots are woven into fans, screens and mats to scent the houses. As the hot, dry breeze enters through the verandas, the vetiver screens which are wet, which then refreshes, cools and scents the house.\(^2\)

**Traditional medicine**

A drink is made from the fresh rhizomes and is taken as a stimulant and tonic.\(^2\) In Ayurvedic medicine, vetiver is used to alleviate thirst, heatstroke, fever and headaches. The oil is applied, as part of a liniment to relieve inflammatory disorders of the joints and skin, and it has been used for rheumatoid arthritis.\(^9\)

In Ayurvedic medicine, a decoction of the roots is used for dissolving kidney stones.\(^2\)

**Food, perfumery and flavouring**

Vetiver oil is extensively used in perfumery.\(^5\)

**Other uses**

Vetiver’s massive deep, strong fibrous roots and thick thatch of stiff leaves has led to its extensive use in other areas such as:\(^10\)

- **Soil erosion control.** Vetiver’s root structures have been known to grow as many as 3-4 m in one year. The deep root structures and rigid grass above ground make vetiver an effective plant for soil erosion control.

- **Decontamination treatment of soil and water.** It is commonly used in waste water treatment and has been shown to remove nitrates, phosphates and heavy metal contaminants from soil and water.

- **Animal feed.** The young vetiver leaves can be ground to feed fish and livestock, but mature leaves cannot be used because their nutritive value is lower than other grasses.

- **Botanical pesticide management.** It has been observed that the vetiver plant grown in close proximity to other plants could inhibit to a substantial degree the attack upon that plant by certain insects.

- **A biofuel.** Vetiver leaves are high in cellulose. Dry biomass yields exceed 370 t/ha per year. It can be harvested three to four times a year. The leaves can also be used as a substrate for ethanol production through alkali pretreatment followed by enzyme hydrolysis and yeast fermentation.

Another novel but very practical use of vetiver is the vetiver latrine. This is a very simple concept where vetiver is planted around a
small concrete slab above the pit. Instead of bricks and mortar, the long roots of the grass stabilise the pit and are also able to remove environmental contaminants. Above the ground, the blades of the grass provide a tall, thick privacy screen that is also storm proof. Once the latrine is filled, the slab and seedlings can be transferred to a new pit. This concept has been tested in 2012 in remote villages in Haiti and was considered very successful.11

**Pharmacology and clinical studies**

Many pharmacological studies involving vetiver essential oil have been published. A systemic review of these studies will not be attempted. Rather, I have chosen a selection of studies that support the traditional and clinical uses.

**Anticonvulsant activity**

Vetiver oil demonstrated significant anticonvulsant activity in an animal study.12

**Anti-inflammatory activity**

A study stated that vetiver essential oil may suppress inflammatory responses by regulating the expression of inflammation-related enzymes heme oxygenase-1, inducible nitric oxide synthase and cyclooxygenase-2 and the inflammatory cytokines tumour necrosis factor-α, interleukin-1β and interferon-β.13

**Antimicrobial activity**

Vetiver oil was found to have very effective antimicrobial activity against cultures of *Trichomonas vaginalis* in an in vitro study.14 Another study found vetiver at up to 1:1000 dilution in dimethyl sulphoxide was very effective against *Staphylococcus aureus* in an in vitro study.15 One study confirmed that vetiver oil demonstrated moderate to significant antifungal activity against gram-positive strains of one *Candida glabrata* strain. It is was noted that C. glabrata is currently the second yeast species responsible for clinical forms of candidiasis and that this species now displays a high frequency of acquired resistance.16

**Antioxidative activity**

Vetiver oil exhibited potent lipid peroxidation inhibitory activity to moderate the bleaching of β-carotene and to maintain the cellular glutathione (GSH) levels. Vetiver oil markedly decreased melanin production and tyrosine activity in α -melanin-stimulating-hormone (α -MSH-) stimulated B16 cells. These results demonstrated that the activity of vetiver oil on melanogenesis might be a result of its potent antioxidative ability, which is reflected, in the decreased cellular oxidant and malondialdehyde (MDA) levels and the recovered activities of superoxide dismutase (SOD), glutathione peroxidase (GPX), and catalase (CAT) in α-MSH-stimulated B16 cells. It has been suggested that vetiver essential oil has the potential to become an ingredient in future hypopigmentation drugs, foods and cosmetics.17

**Anxiolytic activity**

An in vivo study using rats confirmed that the inhalation of vetiver oil exhibited anxiolytic-like activity. It was found that vetiver oil significantly increased c-fos expression in the amygdala, known to be involved in anxiety.18 It has been suggested that the anxiolytic or sedative effect of vetiver was through GABAergic activity. In another study using mice model of amnesia induced by scopolamine, vetiver significantly inhibited acetylcholinesterase activity and reversed amnesia.12

**Autonomic nervous system activity**

Vetiver oil inhalation significantly increased total waking and reduced slow-wave sleep time in animal studies. The results of the EEG study suggest that the aroma of vetiver oil increases brain activity and alertness.12

Human subjects who inhaled vetiver essential oil showed faster reaction times and stimulation of sympathetic nerve activity. It was suggested that the oil may help subjects to improve performance and alertness during a visual determination task. It was also concluded that the stimulating effects of vetiver oil may be beneficial for learning and memory processes.19

**Dementia**

A blend of lavender, sweet marjoram, patchouli and vetiver essential oils was blended into an aqueous cream and 5 g was gently massaged five times a day onto the bodies and limbs of 56 aged care facility residents (age range 70-92 years) with moderate to severe dementia. Participants were divided into two groups and following a baseline period in which there was no massage at all, followed by massage with cream only, the groups received 4 weeks of massage with cream and essential oils or four weeks of massage with only cream, and then received the other treatment for four weeks.20

During the period of oil application both groups showed a significant decrease in the average frequency and severity of dementia-related...
behaviours occurring at times other than during nursing care, compared with the baseline and the “no oil” periods. However, it was noted that resistance to nursing care procedures increased, which may reflect increased mental alertness and awareness caused by the oils.20

Insecticidal activity
Sixty-one essential oils were screened for their insecticidal activity against *Aedes aegypti* (mosquito) larvae. Vetiver essential oil was found to be the most toxic, causing over 50% mortality at a 50 mg/L concentration.21

Nootropic activity
Results of one study involving mice indicate that vetiver essential oil possesses significant nootropic activity. It was suggested that the nootropic activity was mediated through the facilitation of neurotransmitters implicated in anxiety and learning and memory.16

Properties
Antiseptic, antispasmodic, mild rubefacient, sedative, tonic, vermifuge 22

Holmes states that vetiver possesses therapeutic potential that is still largely unexplored yet very rich in possibilities. He states that very few remedies exert the same depth of restorative action as vetiver oil. He explains that it influences the body’s four core systems – the nervous, endocrine, gastrointestinal and immune system.22

Schnaubelt states that vetiver oil is almost exclusively composed of sesquiterpenoid constituents. Due to the complexity of these compounds, there are many unknown interactions between them and the various transmitter-receptor systems, which may have surprising implications for their pharmacological properties.24

Musculoskeletal system
Vetiver oil is a mild rubefacient and may be used for arthritis, rheumatism and muscular pain.22,25,26

Psychological
Vetiver oil is relaxing and is beneficial for anyone experiencing stress, anxiety, insomnia or depression.22,23,25

Vetiver oil is recommended for physical, mental and emotional burnout which results from total exhaustion.9 Holmes states that vetiver oil promotes cognitive flexibility and emotional security. Vetiver helps to dispel worry, obsessions, compulsions, repetitive and excessive thinking, the inability to let go and feelings of insecurity and vulnerability.23

Reproductive system
Vetiver is reputed to regulate hormonal secretions of oestrogen and progesterone.1,9,27 This makes vetiver an ideal oil to use during menopause, where both the hormones need supplementing and its grounding and cooling effects will help to reduce the symptoms of hot flushes.9

Holmes suggests that vetiver is useful for PMS because of endocrine and emotional reasons. Vetiver is recommended for PMS caused by oestrogen deficiency that often displays weepiness and depression and PMS associated with progesterone deficiency that typically presents feelings of unworthiness.9

Skin care
Vetiver oil assists in strengthening the body’s connective tissue. It is beneficial for weak, loose or simply fatigued skin.28 Holmes suggests using it during and after childbirth to minimise stretch marks.9

Gumbel states that vetiver oil mainly influences the subcutis. Its application is especially recommended where the skin has become atrophic and slack and where there is too little adipose tissue built up. The resorptive power of the skin is stimulated, so that tissue development will be strengthened and vitalised.28

Vetiver oil is said to be beneficial to balance sebaceous gland activity and to help normalize oil skin and clear acne. It is also suggested that it promotes skin rejuvenation and strengthens connective tissue, thus assisting in wound healing. Of mature, irritated or inflamed skins. It is said to replenish moisture in dehydrated and dry skins. However, one study found that vetiver oil displayed no significant and innovative skincare potential other than its scent.29

Tonic
Holmes refers to vetiver as a neuroendocrine restorative, recommending the oil for hypotonic conditions involving chronic neurohormonal deficiencies with fatigue, debility, burnout, neurasthenia, nervous breakdown, depression associated with chronic stress, overwork or disease. He also recommends vetiver oil as a gastrointestinal restorative for conditions such as malabsorption syndrome with fatigue, weight loss, gut hyperpermeability, gluten sensitivity, peptic ulcer, ulcerative colitis and anaemia.23

Energetics
Vetiver is cool and moist. It clears heat, nourishes, calms and uplifts.23,27 Mojay describes vetiver’s ability to reconnect us to
mother earth:

Whether mentally exhausted from overwork, or out of touch with our body and its needs, vetiver sedates and yet restores us – centres and reconnects us – closing the gap between spirit and matter.27

It nourishes and supports Yin Qi, which is the body’s restorative and metabolic functions. It is for this reason that Mojay recommends using vetiver for poor appetite, weight loss, anaemia and malabsorption.27

Holmes states that vetiver oil nourishes the blood, Yin, clears heat and calms the Shen. Vetiver will be beneficial for Yin deficiency conditions. Symptoms associated with Yin deficiency include hot spells, fever, restlessness, irritability, night sweats and insomnia.23

When the Shen is agitated, we may experience restlessness, irritability, insomnia, tinnitus, dizziness and palpitations. According to the principles of TCM, vetiver essential oil helps cool excess heat associated with the Fire Element and helps to balance the Earth Element.

According to the principles of Ayurveda, vetiver oil helps to balance the Kapha dosha, cools Pitta and reduces excess Vata.

**Personality**

Vetiver personalities are often strong and intellectual and are aware of their surroundings. They are very interested in the esoteric side of life, particularly the journeys of the shamans and voyages to uncover the earth’s mysteries.20

Worwood explains that there is nothing delicate about the vetiver personality – it’s very much of the here and now. While they can often be gentle and wise in spirit, friends will turn to vetiver for advice, which will be blunt and straight. She states that vetiver personalities revel in the sensuality of life. They are the person who needs to hold and feel something in order to fully appreciate all aspects of an object.30

According to Myers-Briggs personality types, the vetiver personality is likely to be an ISTP. ISTPs are quiet and they prefer to stand back and observe. They can be difficult to understand and remain a mystery to many people. They are independent and do not like to behave to the rules of society. They appear cool, dispassionate and analytical. They can be very disorganised in things where they have no interest. They dislike supervising or being supervised. They tend to ignore rules, policies and regulations when they can get in the way of results. They tend to remain calm in a crisis. They have little need for talking or socialising. They often have poor interpersonal skills and seem detached or uncaring to those who are not close to them.

**Subtle**

Vetiver is beneficial for anyone who needs to be brought into close contact with the earth, to ground and centre their energies.25

Fischer-Rizzi beautifully describes the grounding qualities of vetiver:

*This essential oil connects us to earth’s energies. It is a source of vital energy and regeneration. The earthy fragrance of the oil supports all of those who have lost touch with the earth and their roots. Vetiver nourishes people who have cold feet or have their heads in the clouds. When we lose contact with the ground beneath us, with reality, we pay the price of a weakened immune system. When in touch with the earth, we breathe fresh air, enjoy the magic of an open fire, and feel the wind blow through our hair.*

Keim Loughran & Bull state that vetiver balances and grounds us so that we can be receptive to spiritual energy. They recommend using vetiver oil whenever we feel ungrounded or confused, whenever we feel unsafe in the world and when our personal boundaries are vulnerable and weak.31

The oil is recommended as protection against oversensitivity and may be applied to the solar plexus to prevent becoming a ‘psychic sponge’. To do this apply one drop of vetiver oil on the fingertips and gently massage it to the solar plexus in an anticlockwise direction.32 Vetiver oil helps to balance our base or root chakra.26,32

Zeck recommends using vetiver if we are feeling threatened by the demands of our own soul for change. The earthy quality of vetiver will embrace, sustain and re-establish a balanced relationship between heart, body and mind.33

Worwood states that vetiver oil will stop the turmoil of unanswerable questions swirling in our mind. She explains that vetiver oil will help us remain calm when unsettling events affect our spiritual self and when we face adversity.34

Holmes beautifully describes vetiver as mother earth’s gift to humankind. He states that vetiver represents the nurture and self-empowerment given to us by our earth mother:

*As she shows us her deepest mysteries, we can become more open to her beauty, feel the deep connection of all of life and come to realise on an instinctive level that her density and ours are really one.*23
Dosage and Administration

**Blending**

**Aromatherapy**

For the temporary relief of arthritis and rheumatic pain, consider blending vetiver oil with essential oils such as black pepper, German chamomile, cajeput, kunzea, spike lavender or rosemary.

For the relief of anxiety, nervous tension and stress-related conditions, consider blending vetiver oil with essential oils such as bergamot, lavender, cold-pressed lime, jasmine absolute, neroli, patchouli, sandalwood and ylang ylang.

For the relief of chronic neurasthenia with exhaustion, consider blending vetiver oil with essential oils such as clary sage, geranium, lemon, cold-pressed lime, pine or rosemary ct. verbenone.

**Perfumery**

Vetiver oil is extensively used in perfumery, not only as a fixative, but also as an odour contributor in fougère, chypre, modern woody-aldehydic or amber-aldehydic, oriental, moss and wood style bases. It blends well with essential oils such as opopanax, patchouli, sandalwood, oakmoss absolute, lavender and clary sage.5

Curtis & Williams state that vetiver oil is an excellent fixative with a superior woody note that can be used in chypre, fougere, woody bases, oriental-type perfumes and certain florals such as rose.35

Jouhar states that vetiver essential oil is an excellent fixative for rose and opopanax perfumes.36

**How to use**

**Bath**

Full body bath, foot bath

**Topical**

Massage, ointment, skin care

**Inhalation**

Direct inhalation, diffuser, oil vaporiser

**Safety**

Vetiver oil is non-toxic, non-irritating and non-sensitising.22
References