



Essential News

Essential Therapeutics

The Ultimate Professional Aromatherapy Range

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Welcome to our Spring Issue

In our this issue, we will consider *Australia's Best Eucalyptus Oil*. Of all the 'medicinal', cineole-type Eucalyptus oils, we will see that *Eucalyptus radiata* is outstanding.

I have been asked a number of questions by therapists about whether or not various vegetable oils derived from nuts could be problematic for those with nut allergies.

I have done a full literature review and have summarised the facts of the matter, so you can be confident in working with clients.

This 'e-version' is an expansion of our printed newsletter and this includes all references for the articles

Best Regards,

Ron Guba, Editor



E. radiata - leaf oil glands

"Australia's Best Eucalyptus Oil" – *Eucalyptus radiata*

The genus *Eucalyptus* was first named by the French botanist Charles Louis L'Héritier de Brutelle in 1788, based on a sample of *Eucalyptus obliqua*, first collected in 1777 during Capt. Cook's third expedition to *Terra Australis*.

The name Eucalyptus is derived from the Greek eu ("good, well") and calyptos ("covered") in reference to the flower bud cap that covers the flower stamens until they are mature.

The genus *Eucalyptus* is typically Australia (some species have been identified in Timor, New Guinea and the Philippines), consists of over 800 species and makes up approximately 75% of Australia's native flora. Starting in the 1800's, various Eucalyptus species began being transplanted and grown around the world, for their uses as ornamental plants, for timber, essential oil production and more. 1

The great majority of *Eucalyptus* species will yield essential oils, having conspicuous aromatic oil glands present in their leaves. In terms of commercial essential oil production, fewer than twenty species have been utilised. A short list of the most important are:

Blue-leaved Mallee – *E. polybractea* (syn. *E. fructicetorum*) * Narrow-leaved Peppermint or 'Eucalyptus Australiana' – *E. radiata* (syn. *E. australiana*)
Tasmanian Blue Gum – *E. globulus* * Broad-leaved Peppermint – *E. dives*
Lemon-scented Gum – *E. citriodora* (now considered to be in a separate genus, *Corymbia citriodora*)

To a lesser degree: Gully Gum – *E. smithii* * Lemon-scented Ironbark – *E. staigeriana* 2

In 1789, the first sample of a Eucalyptus essential oil believed to be from the Sydney Peppermint, *Eucalyptus piperita* was sent from the Port Jackson (Sydney) colony to England. It appears the medicinal qualities of the Eucalyptus oil were associated with those of the well-known Peppermint oil, from *Mentha piperita*. A naval surgeon of the First Fleet, Denis Consideen, considered that the eucalyptus oil was 'much more efficacious in removing all cholicky complaints'. 3

The real beginning of the Eucalyptus oil industry in Australia began in 1852 with the establishment of a distillation plant by Joseph Bosisto, on the banks of Dandenong creek, near Dandenong, Victoria. The first oil to be produced was that of the subject of our story, *Eucalyptus radiata*. 3

The Eucalyptus oil industry grew from there, utilising a variety of species. By the late 1940's, approximately 845,000 litres of various Eucalyptus oils were being produced yearly, of which up to 70% was for medicinal uses.



At that time, the main medicinal oil species (in this case, oils rich in 1,8 cineole) used were:

<i>Eucalyptus polybractea</i>	33%
<i>Eucalyptus radiata</i> and <i>E. dives</i> type C	20%
<i>Eucalyptus sideroxylon</i>	20%
<i>Eucalyptus leucoxylon</i>	20%
Remaining varieties:	7% 4

At the present time, the major cineole-rich Eucalyptus oil distilled in Australia is that of *Eucalyptus polybractea* grown in the Bendigo area of Victoria and West Wyalong in NSW. This is the oil most commonly available in Australia as 'crude' (single distilled) or 'D/D' (double or redistilled) oil.

It is interesting to note that the Eucalyptus oil usually mentioned in aromatherapy literature has been that of *Eucalyptus globulus*, or Tasmanian Blue Gum. The oil from this species was distilled for some years in the late 1800's in Australia, but then discontinued primarily due to its relatively low oil yields and competition from other countries. Single distilled *E. globulus* oil contains small amounts of isovaleraldehyde, a compound that can irritate the throat when the essential oil is inhaled, causing coughing. Hence, the essential oil is routinely redistilled (unless stated otherwise) to remove the isovaleraldehyde and other high-boiling point compounds.

By far, the largest producer today of redistilled *E. globulus* oil is China, with small amounts produced in Portugal, Spain and other countries, generally as a by-product of the trees being grown for timber use.



Mature *Eucalyptus radiata*

Eucalyptus radiata remained an important species for oil production for many years in Australia, with a cineole content of 65% to 72%. But over time, *E. polybractea*, with its higher content of 1,8 cineole (from 80% to 90%) has become the standard Australian commercial eucalyptus oil. *E. radiata* oil is distilled today in Australia, by wild-harvesting and in some certified organic plantations. South Africa is also a more recent producer of essential oil from plantation-grown trees. *E. radiata* is more of a 'boutique' essential oil, used by those who best understand its unique therapeutic qualities.

Why is this so? A.R. Penfold and F.R. Morrison of the Museum of Technology and Applied Science in Sydney spent many years researching the Australian Eucalyptus oils. In 1948, they report that the essential oil of *Eucalyptus radiata* (and the virtually identical *E. dives* var. C) is "the finest medicinal eucalyptus oil produced in Australia today". 5

The simplest reason is that the major component of 'medicinal' eucalyptus oils is 1,8 cineole. This compound became to be considered the main 'active ingredient' in eucalyptus oils and became standardised in various pharmacopeia. In the British Pharmacopeia (BP) 2009, the minimum cineole level must be 70% and above. All other aromatic compounds, such as alpha-pinene, limonene, etc., are listed as must be 'less than X %'.

In the BP standard, sabinene must be less than 0.3%. In *E. radiata* oil, sabinene is routinely just over 1%, therefore 'failing' the BP standard. Hence, a standard Eucalyptus BP 80/85 oil (80% to 85% cineole) is most easily produced from *E. polybractea*.

As we shall consider however, cineole is **not** the only important compound to be found in *E. radiata* essential oil and the BP standard simply does not take these facts into account.

Eucalyptus radiata Seiber ex DC

Common name: Narrow Leaved Peppermint

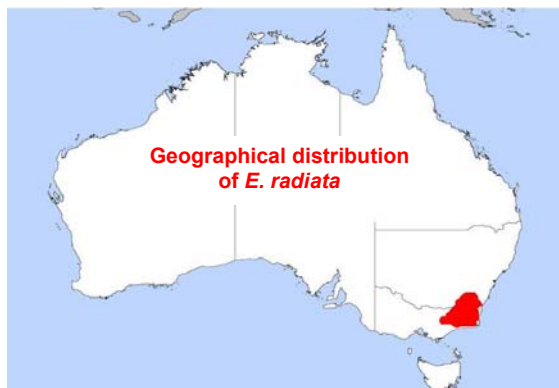
Description: A tree from 20 to 45 metres. As a Peppermint Eucalyptus, *E. radiata* has aromatic lanceolate leaves, a straight, rough-barked trunk, and semi-pendulous branches. The canopy is quite densely-branched, giving lush shade. The flowers appear in late spring and continue through until December or early January. These flowers are small and white and very profuse.

Distribution: *E. radiata* has an extended native range, growing from the tablelands of NSW into southern Victoria. The tree will grow on a wide variety of sites, both moist soils high in organic matter and poor, skeletal soils.

Essential Oil:

In plantation growth, the young trees (two to three years) are harvested when they are about two to three metres in height. The trees are cut to just above ground level and as with many *Eucalyptus* species, *E. radiata* trees fully regenerate from their lignotubers. The essential oil is steam distilled from the chopped plant material, with an average yield between 1% to 1.5%.

E. radiata, as with a number of *Eucalyptus* species, has a variety of chemotypes or variations in the composition of the essential oil. *E. radiata* has up to six possible variants. We are considering the most common, high cineole chemotype as the classic medicinal oil.



Essential Oil Specifications @ 20° C:

Specific Gravity: 0.913 Refractive Index: 1.46
Optical Rotation: +3.5

Following: an in-house GC/MS analysis sample of *Eucalyptus radiata*, certified organic, detailing major constituents.

This is the profile of the preferred single distilled essential oil. *E. radiata*, like other commercial *Eucalyptus* oils, is also often redistilled to raise the cineole content and remove higher boiling compounds.

Monoterpenes: α -pinene 2.25%, sabinene 1.06%, β -pinene 0.64%, myrcene 1.32%, α -phellandrene, limonene 3.75%, γ -terpinene 0.54%

Oxides: 1,8 cineole 71.28%

Monoterpene alcohols: linalool 0.34%, δ -terpineol 0.18%, terpinen-4-ol 2.15%, α -terpineol 8.65%, nerol 0.1%, geraniol 0.24%

Aldehydes: neral 0.82%, geranial 1.04%

Monoterpene esters: α -terpinyl acetate 2.37%

Other minor constituents: less than 0.2% of *trans*-methyl cinnamate, β -caryophyllene, α -humulene, viridiflorene, bicyclogermacrene & globulol

As you can see from the above analysis, 1,8 cineole is the major constituent of the essential oil. However, there are also significant amounts of other beneficial compounds.

Therapeutic properties of the constituents:

1,8 cineole: Cineole is a well-known expectorant. That is, it promotes the formation of mucous in the mucin glands of the respiratory tract and at low levels, enhances the activity of cilia in cells lining the respiratory membranes. These two actions help to relieve mucous congestion in respiratory conditions. 6,7

Cineole has proven useful by itself and in combination with other essential oil compounds (limonene & α -pinene) by ingestion for the treatment of both acute & chronic bronchitis. 8,9

Cineole has demonstrated anti-inflammatory effects in chronic asthma. One study demonstrated that steroid medication could be safely reduced in asthmatic volunteers by up to 36% by a dose of 200mg, three times daily of 1,8 cineole. 10

Oxides such as 1,8 cineole are considered to have good anti-viral properties, when in combination with a good content of monoterpene alcohols. *E. radiata* has this favourable combination, as do other essential oils such as Spike Lavender. 11

Cineole is also a good skin penetration enhancer. Hence, when applied to the skin, the cineole in *E. radiata* oil will promote a better penetration of other useful compounds in the oil. 12, 13

Monoterpenes: *E. radiata* oil contains approximately 10% of a variety of monoterpenes, such as alpha-pinene and limonene. These serve to enhance the expectorant effects of cineole and have demonstrated anti-viral effects at low concentrations on specific viruses. 14, 15

Monoterpene alcohols: *E. radiata* oil contains approximately 11% of a variety of monoterpene alcohols. In comparison, the more common *E. polybractea* oil has less than 2% of alcohols, and *E. globulus*, 4%. In *E. radiata* oil, the major alcohols are alpha-terpineol and terpinen-4-ol. Both of these alcohols have strong anti-infectious properties, notably against a wide range of bacteria and apparently, viruses. 16, 17

Citral: Citral is composed two isomers (*cis*- & *trans*-), neral and geranial. Their content in the oil is low, but is the same amount as found in Lemon oil. Even this amount adds to the anti-infectious properties of *E. radiata* oil. Citral has been found to be particularly potent at low concentrations (0.1% and less) against enveloped viruses such as *Herpes simplex* Types 1 & 2. 18

Citral and other compounds found in essential oils directly interfere with the outer envelope of the virus particle, rendering it incapable of entering cells and causing infection. Influenza is also an enveloped virus and does appear to be inactivated by various essential oil compounds at low concentrations. 19

As well, the citral content gives *E. radiata* oil a subtle lemon fragrance note, making this Eucalyptus oil the most pleasant in aroma of all the cineole-type Eucalyptus species.

A summary of the properties and applications of *Eucalyptus radiata* essential oil:

<i>E. radiata</i> Properties:	Possible applications:
Expectorant, anti-inflammatory, anti-infectious, anti-viral***	Catarrhal respiratory infections, such as: sinusitis, bronchitis, pneumonia, 'flu, colds etc.
Diaphoretic, febrifuge, anti-infectious, anti-viral***	"Dispels wind/cold" - use at the onset of viral infections - colds, 'flu, measles, chicken pox, etc. Useful for skin infections, especially viral (herpes, shingles***), cystitis, vaginitis
Mild anti-inflammatory, analgesic	Acute rheumatism, arthritis, neuralgia, neuritis, sciatica. Endometriosis. Headaches (especially sinus). Insect bites; stings
Immunostimulating, tonifying	Infectious diseases as above, and to speed recovery from illnesses, including post-illness debility, such as in 'flu, glandular fever, etc. Fatigue states. Chronic fatigue syndrome

20,21,22,23



Eucalyptus radiata foliage

Some essential oils that can be used in synergy with *E. radiata* oil:

Scotch Pine, Citrus rind oils (expectorant). *Eucalyptus dives*, Spearmint, Peppermint, Sweet Inule (mucolytic – to thin mucous congestion).

Clove, Tea Tree, Fragonia, Palmarosa, Sweet Marjoram, Sweet Thyme, Red Thyme (anti-bacterial). Lemongrass, Peppermint, Ravensare, Clove, Cinnamon Bark (anti-viral).

Sweet Thyme, Tea Tree, Fragonia, Ravensare, Frankincense, Niaouli, Clove, Cinnamon Leaf, Oregano (tonifying & immunostimulating).

Safety Issues:

At usual therapeutic dosages as used in Aromatherapy, there is no risk of toxicity. These dosages have included the use of ingestion. In this case, no more than 250mg per day (about 10 'drops') of *Eucalyptus radiata* or any other essential oils rich in 1,8 cineole are generally used by French practitioners. 24

It is useful to note that one study on 1,8 cineole in the treatment of severe asthma, 600mg of cineole was taken orally per day for 12 weeks with no adverse effects. This represents in the order of 800mg per day of *E. radiata* oil. 25

However, with large ingested doses (as in 10mL and above in adults and correspondingly less in children), 1,8 cineole has well known toxic effects on the central nervous system and gastrointestinal tract.

Over the years, either by accidental ingestion or by adults 'prescribing' a teaspoon or more of a high-cineole *Eucalyptus* oil to children, there have numerous poisoning incidents and some fatalities. Always keep such oils out of the reach of children.

Eucalyptus radiata is non-irritating and non-sensitising on the skin.

Aromatherapy Protocols

Treatment possibilities utilising *Eucalyptus radiata* for two conditions:

Viral respiratory complaints, as with influenza

For prevention, or at the onset of symptoms

Essential oils of:

- Eucalyptus radiata* 4mL
- Melaleuca alternifolia* - Tea Tree 4mL
- Melaleuca quinquenervia* – Niaouli 2mL

Adults: Apply 6 to 10 drops of the undiluted oil blend to the chest and back, up to 6 times per day.

Children (from 3 months to 6 years): 3 to 4 drops mixed with the same or double the drops of a good vegetable oil, applied to the chest and back, up to 6 times daily.

This or similar blends, such as *Respiratory Diffuser Blend*, can also be diffused into room environments using an *Aromatizer* diffuser or similar.

If the viral infection develops and a secondary bacterial

infection ensues with fever, etc.:

Continue with the topical application as above.

Perform direct inhalation with the essential oil blend above or *Respiratory Diffuser Blend*, 15 minutes per session, three times per day for adults. For children 6 and under, two five minute sessions per day and the diffuser can be kept on at low volume throughout the night in the bedroom.

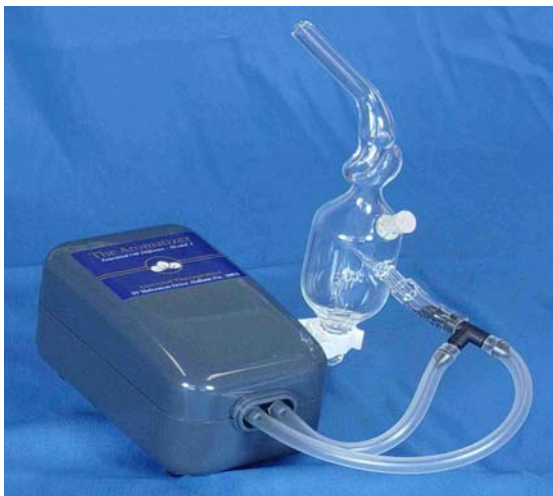
For oral intake (for adults only, under competent supervision)

<i>Thymus vulgaris</i> CT thymol - Red Thyme	25mg
<i>Cymbopogon citratus</i> or <i>flexuosus</i> - Lemongrass	50mg
<i>Cinnamomum zeylanicum</i> - Cinnamon Leaf	25mg
<i>Mentha piperita</i> - Peppermint	25mg

25mg = approximately 1 'drop' from a vertical drop dispenser or glass eye dropper. Best accuracy is achieved by using a small milligram scale, one that weighs to 0.01 gram. Place the essential oils into a '00' gelatine capsule and fill with a good quality vegetable oil.

Or mix the essential oils with 10 times the amount of *Disper* emulsifier (in this case, just under 2mL) and add to a full glass of water or juice.

The recommended dose is three times daily, before meals, up to 7 days. 26, 27



Aromatizer - Model One

***Herpes simplex* infections**

As mentioned previously, a number of compounds found in essential oils have been demonstrated to be potentially active against the *Herpes simplex* virus *in vitro*, both type 1 (primarily, 'cold sores') and type 2 (primarily genital herpes).

Herpes outbreaks on the skin, as in cold sores, are the simplest to address with essential oil-based treatments, as relatively high concentrations can be used without causing skin irritation..

One study tested a variety of complete essential oils

against *Herpes simplex* Type 1 virus. In the design of this trial, a number of essential oils were completely effective at inhibiting the virus at a 1% concentration and Lemongrass was the most potent in this trial, being fully effective at a 0.1% concentration. Essential oils effective at 1% included: Tea Tree, Peppermint, Sweet Marjoram, Eucalyptus, Ravensara, True Lavender, Lemon and Rosemary (chemotype not stated). 28

Other studies have demonstrated that Tea Tree, Eucalyptus and Peppermint are active against both *Herpes simplex* virus Type 1 & 2 at doses below 0.1%. 29, 30

Although not every essential oil has been studied against the *Herpes* virus, it is clear that many common essential oils would be effective against *Herpes* and at reasonably low concentrations. 31

***Herpes simplex* protocol:**

At the first sign of a developing 'cold sore', prepare a blend of the following essential oils:

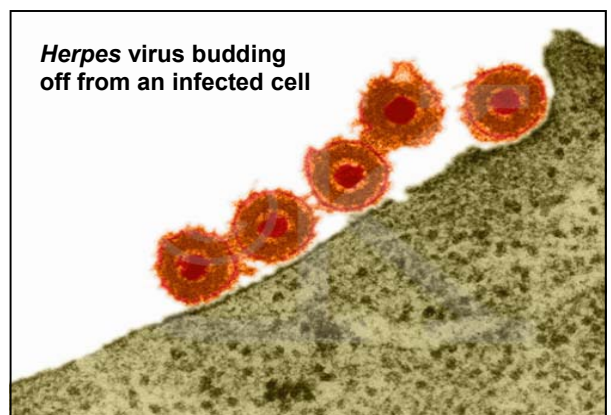
<i>Eucalyptus radiata</i>	2mL
<i>Melaleuca alternifolia</i> - Tea Tree	2mL
<i>Mentha piperita</i> - Peppermint	0.5mL
<i>Cymbopogon flexuosus</i> - Lemongrass	0.5mL

(approximately 15 drops)

Mix into 5mL of *Calophyllum* vegetable oil (enough to make 10mL total). This is an aromatic vegetable oil noted for its anti-viral properties. Optionally, you can use any good quality vegetable oil as the base.

This is a 50% concentration of essential oils. Should there be any skin irritation, another 5mL to 10mL of vegetable oil can be added to dilute the essential oils further and still be effective.

Apply a small amount to the affected area, at least three times per day, up to every two hours. Continue the application until the *Herpes* sore has resolved. 32



Studies have shown that essential oil compounds directly effect the outer membrane of the virus, rendering it incapable of infecting cells.

Once a cell has been infected, essential oil compounds cannot stop viral replication within the cells. 33

Hence, it is useful to apply essential oil-based treatments a number of times per day to cold sores so that any new virus particles can be 'killed' and prevented from infecting new cells.

Vegetable Oils & Nut Allergies - What's the Risk?

I have received a number of questions about the possible danger of using various nut-derived vegetable oils on the skin of people who have nut allergies. Often, I hear that therapists are being told by clients that they absolutely cannot use such and such a vegetable oil on their skin because they are allergic to some type of nut.

There certainly appears to be a good deal of misinformation about this topic out there on various websites and the like. To get to the bottom of the issue, I undertook an in-depth review of the published research literature on this subject so we can clarify the facts of the matter.

The majority of research (and of public concern) has dealt with peanut products, as peanut allergy is the perhaps the most common cause of fatal and serious non-fatal allergic reactions to food.

Because peanut and other food allergies can be fatal, this has led fearful concerns about the possible hazards of peanut and other tree nut oils, even when just applied to the skin.

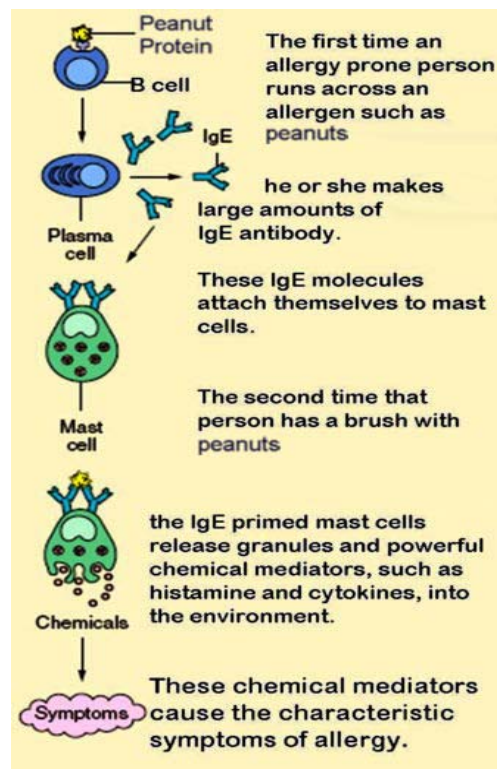
What are nut allergies? Generally, nut allergies begin at an early age (mostly between 14 months to 2 years), when a child is exposed to peanuts, etc. in their diet.

Exactly why the young immune system becomes hyper-sensitive to such 'ordinary' food proteins is not fully clear. But, it is seen that if children suffer from atopy after birth, or if there is a family history of atopy, there is a greater risk of developing nut allergies. Atopy is the spectrum of hyper-sensitive allergic conditions that include eczema, hay fever and asthma.

Figures vary, but it appears greater than 1% of young children are sensitized to peanut proteins. 1, 2



In regards to children in Australia with nut allergies, allergy to peanut is by far the most common (83%), followed by cashew (13%) and other nuts (4%) (almond, pecan, hazelnut and walnut). 3 30% to 60% of children with peanut allergy can become sensitized to other tree nuts (walnuts, almonds, hazelnuts, etc.) Allergic reactions to sesame seeds have been stated to represent up to 2.2% of the population of France and can be as severe as peanut allergies. 4



Once a child has become sensitized to peanut or other nut proteins, a further exposure to the protein will set off an immune response by mast cells that release large quantities of histamine and cytokines. These compounds dilate the blood vessels, leading to a decrease in blood pressure and oedema (swelling) of the bronchial mucosa, which restricts breathing.

The most severe form of this Type 1 allergic reaction, known as anaphylactic shock, can lead to death in minutes if not treated quickly.

Nut Oils & Nut Proteins

There are generally two grades of vegetable oils available. One is virgin, or unrefined oil. In the case of the oils such as Extra Virgin Olive oil, the seeds or nuts are expeller pressed and then the resulting oil is simply filtered.

With virgin oils, a significant amount of proteins can be present. In one study, tests demonstrated that unrefined peanut oil contained from a low of 0.09 micrograms up to 300 milligrams per litre (1,000 micrograms = 1 milligram). 5, 6

300mg per litre is a small amount, but this can be enough to provoke allergy symptoms when ingested by those with peanut allergies.

Another study tested a group of 58 people with definite peanut allergy with the ingestion of unrefined peanut oil. Six people (10%), all with known moderate to severe peanut allergy, developed some level of reaction to ingesting 5ml to 10mL of oil. Four of the six had only subjective reactions in that there were no measurable reactions like hives or wheezing. Two of the remaining people had detectable reactions, but less problematic than when challenged with actual peanuts. Only one person of the group developed wheezing, the same as when challenged with peanuts, at a dose of 1mL of oil. Hence, out of a group of people with definite peanut allergy, only one person (1.7%) had a comparable moderate allergic reaction to a small amount of unrefined peanut oil. 7

This can be the case with sesame oil as well. Sesame oil is generally sold as an unrefined oil. Of all unrefined nut oils, sesame oil is the only oil where there is one reported case of anaphylactic shock reported after the ingestion of some unknown quantity and protein content. 8

Many oils used for foods, for pharmaceutical and cosmetic products and for massage are fully refined oils. In this case, the oil extracted by expeller pressing (and often extraction using hexane) is then put through a purification process including refining, degumming, bleaching and deodorization. It is considered that refining oils lowers the any protein content by 100-fold. 9

A recent study (2008) performed what is described as a more sensitive testing method for detecting protein residues in some refined oils. A sample of refined peanut oil showed an approximate protein residue of 35 micrograms per 100mL of oil. This is a very small amount. 10

A 1997 study on a group of volunteers with severe peanut allergy demonstrated that one participant had a moderate systemic reaction of a low dose of 5 milligrams of peanut protein and one person stated a mild subjective reaction at a dose of only 100 micrograms (1,000 micrograms [μg] = 1 milligram [mg]). 11

At low levels of something like 35 μg of protein in 100mL of a refined peanut oil, one can see that even a person most sensitive to peanut proteins would have to consume large amounts of the refined oil to create a potential mild reaction.

Fully refined nut oils are considered non-allergenic under the 2004 Food Allergen Labeling Act in the USA. In this legislation, all refined peanut, soy and tree nut oils are exempted from listing on food ingredient listings. 12

On the other hand, the European Medicines Agency in early 2006 published a public statement (not a law) regarding products containing peanut and soy protein. It suggests that products for oral ingestion should not contain more than 20 micrograms of protein per dose. Further, it is stated that herbal medicine topical products containing peanut or soy oil (it specifically mentions bath oils) should be avoided by those with peanut or soy allergies. This is despite the fact that the statement details a number of studies that have clearly demonstrated that **refined** oils do not cause allergic reactions when applied to the skin. Since there is no absolutely known protein level that is 'safe', the authors have looked for 'absolute safety'. 13

All taken, the greatest consensus is that refined peanut oil (and other tree nut oils) in products for use on the skin pose no hazards. 14, 15, 16

Some authors have reasonably argued that the concern surrounding nut allergies often results in responses that represent a gross over-reaction to the magnitude of the threat. Certainly, some of the back-and-forth relative to safety of refined vegetable oils highlights some of these over-reactions. 17

This lack of or very low content of protein and therefore the likelihood of allergic reactions via ingestion or topical application is true of all refined vegetable oils.

Using oils on the skin versus ingestion.

When we consider the use of nut oils as massage oils or in cosmetic preparations, this is a very different matter than eating nuts. Intact skin is a barrier to the penetration of the oil and any proteins into the lower levels of the epidermis. Firstly, there are only rare reports of any skin reactions (not systemic reactions, as in eating a nut) to the skin application of unrefined oils like sesame and any Type 4 (delayed hypersensitivity) allergic reactions to unrefined oils, such as olive. 18, 19

This low level of reported skin reactions to either unrefined or refined nut oils is notable in that many people have been routinely exposed to a variety of nut oils in various products and massage oils over many years. If skin reactions were more common, there would be numerous reports and demonstration of this effect in various research trials. This is not the case.

What needs to be considered is that there is the possibility of skin reactions with unrefined nut oils in the case of **broken skin, eczema and dermatitis**.

One of the standard methods of determining if someone has a nut allergy is to place an amount of say, crude peanut oil on the skin and then prick the skin with a needle (skin prick test), thereby introducing the oil into the skin. Any reaction is noted by the appearance of a red wheal, a sign of mast cells releasing histamine and

other cytokines into the skin. These reactions are limited to the skin only. There are no reported cases of serious systemic reactions to unrefined nut oils applied to the skin.

One of the concerns that continues to be investigated is the possibility that unrefined peanut and nut oils (containing significant amounts of proteins) applied to damaged skin (as in eczema) may exacerbate existing nut allergies or help to establish allergy in young children with atopic skin disorders, because the nut proteins can penetrate into the lowest levels of the epidermis, potentially creating an immune response starting with immune system Langerhans cells. 20

At present, these investigations remain speculative, but do raise questions. A more recent study (2004) has cast doubt on the 2003 study which was also questioning the allergenicity of refined peanut oil. A number of available refined peanut oils from food and pharmaceutical suppliers were examined and no nut proteins could be identified in any of the samples. 21

In Practice: What are The Risks?

1. Using Virgin, unrefined nut oils:

In the case of those with a nut allergy, it is the safest to say that it is best to avoid the topical use of the corresponding unrefined nut oil if there are any skin conditions where the epidermis is damaged and/or inflamed, as in the case of eczema. The actual risk of skin reactions (erythema & itching) is very small but real. Also avoid oil contact with the eyes, which can become inflamed.

Some allergy sufferers will have reactions to more than one type of nut and this fact would need to be taken into account.

For therapists offering massage or other topical applications containing oils, it would be useful to ask clients whether or not they have any existing nut allergies.

The possible risk of using unrefined nut oils on normal, undamaged skin is definitely much lower.

Hence, should a person with an undisclosed nut allergy be given a massage, for example, with an unrefined nut oil, it is not worthy of any real alarm as the risk of any skin (not systemic) reaction is very small.

In the case of babies and young children with atopic eczema, it seems wise to avoid applying unrefined oils, most especially **peanut, soy** and **sesame**. Other tree nut oils pose a lesser risk. There is some possible level of risk; how much is not known or proven.

2. Using refined nut oils

Refined nut oils, on the other hand, are generally considered to not pose any risk and can be used for massage and in cosmetic & therapeutic creams, etc., without a fear of reaction on those with nut allergies or with young children with atopic eczema.

Refined oils, including peanut, are considered to be acceptable for ingestion and application to the skin has much less potential to cause any problems.

The vegetable oils that *Essential Therapeutics* provides are clearly labeled as a Virgin, unrefined oil or as a refined oil, so this can be determined easily.

3. "Absolute" Safety?

If you want to lower any remotely possible allergic risk to zero and be 'absolutely safe' (if there is such a thing), you would simply avoid the use of peanut, soy and sesame oil, refined or not. This could be most applicable to young children with atopic eczema.

Again, other nut oils pose a very low risk and such oils have not been considered in the various research trials that have focused on peanut and soy.

However, if someone states they have an allergy to almonds, one can choose to avoid the use of even refined almond oil. This can well be considered a case of 'overkill', but one has to say that any small possible unknown risk is now brought to zero.

This leaves a list of vegetable oils that include: avocado, camellia, canola, coconut oil fractions, grape seed, hemp seed, jojoba, olive, rice bran, rose hip and safflower.

Essential Therapeutics Super Fine Massage Oil, containing only coconut oil fractions, camellia and jojoba oil would be very suitable for all applications.

"This Allergies Hysteria is Just Nuts"

The whole topic of nut allergies has become certainly over-exaggerated at times, with some people perhaps feeling that a Snickers Bar at 50 meters could be a lethal weapon to a child with a nut allergy! It has been put forward that having children completely avoid nuts actually increases the incidence of nut allergies.

For a humorous and balanced viewpoint, you can find the article written by Dr. Nicholas Christakis, 'This Allergies Hysteria is Just Nuts' on his website:

<http://christakis.med.harvard.edu/pages/bmj.html>



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PRODUCT NEWS

Vanuatu Sandalwood

In our last newsletter, we discussed Vanuatu Sandalwood (*Santalum austrocaledonicum*) and we offered this oil as a special with the limited stock that we had.

We now have a good, ongoing supply of Superior Vanuatu Sandalwood oil in stock at an excellent price.

The superior grade oil is the highest in santalol content, very similar to the Indian Sandalwood oil (*Santalum album*), an essential oil that is in short supply and quite expensive.

If you love Sandalwood oil, this oil is exquisite and truly worth experiencing!

Agua Oil - New Formula & Made with Organic Oils!

We have redesigned our popular water-dispersible **Agua Oil**.

Agua Oil is now using a new coconut oil-derived dispersant so it is highly effective in the oil easily and completely washing out of towels and linens and rinsing off the skin. No more rancid smelling towels!

Plus, the vegetable oils used in **Agua Oil** are now all **ACO certified organic**, with premium sunflower, almond and macadamia oils. It is an excellent massage oil which is suitable for all skin types and can be used with Aromatherapy treatments.

Contact your nearest distributor for details.