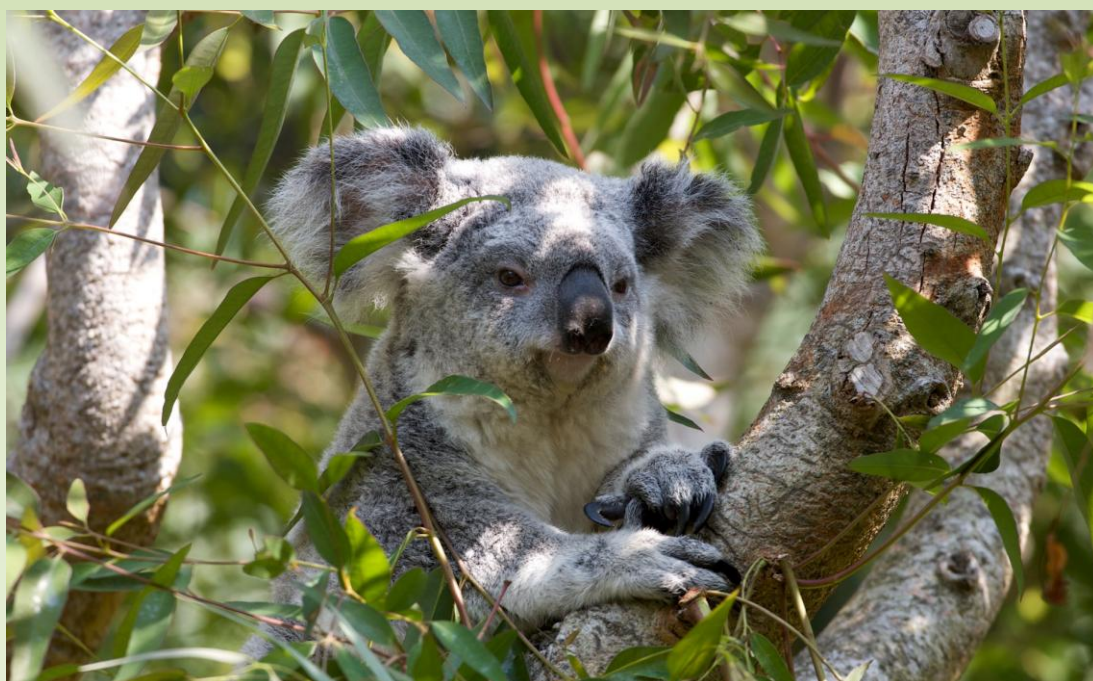


CAMPO RESEARCH

AUSTRALASIAN BOTANICAL EXTRACTS

TEA TREE COLLECTION



CAMPO RESEARCH PTE LTD

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CAMPO® Multi-Purpose Cosmetic Base Chemicals & Active Ingredients

CAMPO® Novel Functional Active Cosmetic Ingredient & Raw Materials

Australasian Herb Extracts

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| Liniment Tree | <i>Melaleuca symphyocarp F.v.Muell</i> |
| Australian Neem Tree | <i>Melia australasica Blake</i> |
| Medicinal Tea Tree | <i>Melaleuca alternifolia (on request only)</i> |

References

Australian Medicinal Plants, E.V. Lassak. & T. Macarthy
1988 Sydney, NSW, Australia

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Australasian Herb Extracts

Application Decode

| | | |
|--------|---|--|
| RTS | - | regenerating of tired, reddened skin |
| ITS | - | invigorating and tightening slack skin |
| RSS | - | revitalisation and strengthening of the skin |
| OGS | - | against oily or greasy skin conditions |
| OGH | - | against greasy (excessive oily secretions) hair conditions |
| SRB | - | for soothing / relaxing baths |
| SSB | - | for stimulating / invigorating baths |
| ADS | - | against dry skin conditions |
| NSH | - | for normal hair and scalp |
| DIS | - | against dandruff and itchy scalp |
| SSS | - | against dry skin conditions |
| HTB | - | for healing / therapeutic baths |
| DBH | - | against dry, brittle hair conditions |
| UV A&B | - | sun protection / UV A&B filter / absorber |

| |
|----------------------------------|
| <h3>IMPORTANT NOTICE</h3> |
|----------------------------------|

Due to technological improvements in extraction methods and techniques, specifications stated in this catalog (specific gravity, color, and odour, refraction index) may be changed without prior notice for the benefits of our clients.

TEA TREES - MELALEUCA MAGIC

- A unique Australian phenomenon

Dr. Balasubramaniam M. & Dr. Allan Onions

Occasionally, a new ingredient comes to the market that fires the imagination of the marketers and formulators alike. Sometimes it has an attractive name, sometimes an attractive fragrance whilst at other times the attraction may be its origins in an exotic location.

Tea Tree Oil does not have a particularly attractive name, it has an odour that might justifiably be called *characteristic*, but it does originate from, and is unique to, Australia.

The use of tea tree oil has spread from its antipodean origins to become a worldwide phenomenon in cosmetics formulations over the last five years. It has become so popular that there is even a multilevel company in the United States that has taken its name from the species.

The popular **tea tree oil** is obtained by steam distillation from the leaves of *Melaleuca alternifolia*, a shrubby tree that thrives in the swamps between the Clarence and Richmond Rivers in New South Wales. The oil is rich in cineol, terpinene-4-ol, cymene, and other sesquiterpenes and sesquiterpene alcohols. Despite its rather distinctive and somewhat unattractive odour, demand has grown so much in recent times that development of commercial plantations has been necessary to guarantee supplies. But the history of tea tree oil can be traced back some considerable time.

It is believed that tea tree oil was an ingredient of a 19th century panacea called Ti-Ta. This was promoted as 'a discovery far before any of the brilliant theories of Pasteur...' and sold by the Ti-Ta Volatile Oil Company of Brisbane. The formulation was claimed to be based on a tree, moss and fern indigenous to Queensland, but despite its endorsement by many local dignitaries, it disappeared from the scene after only a short while.

Tea tree oil was first marketed commercially in the 1920's for dental and surgical use and has gained widespread popularity over the past decade as non-irritating, germicidal oil, with sales being promoted through health food stores. It is particularly effective in curing fungal and bacterial skin infections, such as athlete's foot.

It is perhaps a less well known fact that over sixty of the *Melaleuca* species have been identified growing in Australia, providing a group of plants second only to the eucalyptus or blue gums in their importance as sources of volatile oils. Tea trees are shrubs of wet lands and are often characterised by their having a papery bark, from which they derive their alternative name of paper-bark trees. Many of them have been used for health care and personal hygiene by local Aboriginal tribes and additionally, through study of their ethnobotany and phytochemistry, several offer themselves as alternative functional ingredients to give an Antipodean flavour to cosmetics formulations. The present article describes just a small number of this uniquely Australian species.

Melaleuca bracteata F.v.Muell is the **Black Tea Tree** or **River Tea Tree**. It is known in the local tongue of the Groote Eylandts aboriginals as *Kwila-Yataly*, who use the leaves for the treatment of aches and pains, the leaves being crushed by hand and rubbed on the affected

area. On other occasions, young leaves and twigs may be crushed and steeped in water, with part of the solution being used to bathe relevant parts and the remainder of the solution being poured over the head. Crushed leaves are sniffed to relieve headaches.

The plant is also used internally for the relief of coughs, stomach cramps, asthma and colic, for which 1 - 5 drops of the leaf juice is used. Other uses are for the treatment of neuralgia and rheumatism, as a potent anti-spasmodic and sudorific, and as an insecticide and insect repellent.

Cosmetically, it is used in certain rituals by tribes living around the Queensland swamps that also use the plant for bathing, where it exhibits skin hydrating properties in addition to the protection it offers from the local insect population.

The presence of Essential oils, Saponins, Vitamins, Flavonoids and Phytosterols in an extract of the leaves and inflorescence is responsible for the activity of black tea tree. It is particularly recommended in preparations designed for the protection and care of the damaged and very tired skin conditions. It appears to increase the resistance and elasticity of the skin and is highly suitable for incorporation in day and night cream formulations.

The crushed leaves of the **Bottle Brush Tea Tree, *Melaleuca hypericifolia***, known locally as *botol balsh*, are sniffed to relieve headaches. They are also used to prepare effective hair washes for children and aged members of the tribe/ Additionally, the leaves are used for the preparation of facial washes for hunter/gatherer rituals and for body washes prior to community ritual dances.

Bottle brush tea tree is rich in amino acids, Phytosterols, mucins and Essential oils. It is particularly recommended for skin care products as a revitalising and moisturising ingredient. It is particularly recommended for skin care products as a revitalising and moisturising ingredient. It may be incorporated to good effect in cream moisturisers, day and night creams etc, relying on the activity of the mucins, amino acids and Phytosterols. In Bath care products, the soothing effects of the Essential oils, in conjunction with the other ingredients, suggest application in new generation 2-in-1 moisturising shower gel.

Broad leafed Tea Tree, *Melaleuca wilsonii* F.v.Muell, botanical synonym *M.leucadendron var. viridiflora* is also known as Swamp Tea Tree or Paperbark Tea Tree. Young Leaves are steeped in hot water and drunk for general sickness, cold and coughs. Aboriginals around the Cape York peninsula use this plant for the general soothing of body aches. One technique used to good effect locally was to dam inlets of the sea with sand and rocks to create pools of warm salt water. Crushed leaves were then thrown in and the patients could sit immersed in the warm, medicated water effectively soothing the aches and pains in their bodies. Belyuen aboriginals around the Cox peninsula, near Darwin, use the plant as a sniffing medicine and the soft papery bark for bandaging.

An infusion of Broad Leafed Tea Tree Leaves and inflorescence is rich in mucins, Essential oils, Flavonoids and tannins. It is particularly suitable for incorporation in soothing and relaxing bath preparations mirroring its traditional Aboriginal use. Additionally, it may be recommended for use in creams and lotions intended to alleviate stressed and strained skin.

Melaleuca uncinata is the **Broom Brush Tea Tree**, also known as broom honey-myrtle and known locally in Southern Australia and Victoria as *Siris*. The leaves and flowers are rich in mineral salts, Essential oils and tannins.

Local Aborigines for the relief of catarrh chew the leaves of this broom honey-myrtle. A decoction of the leaves is used as a wash for cleansing the skin prior to the application of pigment decoration for ritual dances.

Broom honey-myrtle is particularly effective in revitalising skin care preparations. The astringency of the tannins brings about the contraction of large skin pores reducing sebaceous secretions and in conjunction with the moisture regulating mineral salts helps restore natural tone and elasticity to the skin. This functionality can also be applied to some effect in bath care preparations, whilst use is also suggested in shampoos and rinses for greasy hair.

Melaleuca symphyocarp is known as the *Liniment Tree*. Its Australian Bush name is *Mawilyaburna*. In addition to a high concentration of Essential oils, the leaves and flowers are rich in carotenoids and Flavonoids.

This medicinally important variety of tea tree grows in swampy woodlands in Northern Australia. Aborigines of the Groote Eylandts use its leaves for the relief of headaches and, as its name suggests, as a liniment. The leaves are boiled in water and the steam inhaled to ease colds, whilst the crushed leaves are rubbed on the chest to ease difficult breathing. Crushed leaves are also applied to hair and skin as a cleansing agent and are also sometimes applied to wounds.

Liniment Tea is particularly effective in formulations for reddened and tired skin conditions. In hair care products, the Flavonoids serve to stimulate blood circulation of the scalp improving the general health of the scalp and hair. This can be particularly important in helping to normalise greasy hair and scalp conditions.

In addition to *Melaleuca* species, Tea Tree is also a name given to the genus *Leptospermum*. The lemon-scented tea tree, *Leptospermum petersonii* is a source of lemon scented citral and citronella and may be used as a source of natural fragrance.

The diversity of the many **Tea Trees** indigenous to Australia certainly offers the cosmetic formulator more than just single oil for their palette of exotic ingredients. We hope that in the present article we have whetted your appetites to investigate other members of this uniquely Australian species.

Australasian Herb Extracts

CAMPO RESEARCH SYSTEMS

AUSTRALASIAN HERBAL EXTRACTS for COSMETICS FORMULATIONS

PRODUCT TECHNICAL DATA SHEET

| | | |
|------------------------------|--|---|
| Product name: | Black Tea Tree | |
| Latin name: | <i>Melaleuca bracteata</i> F.v.Muell | |
| Botanical synonym: | | |
| Botanical synonym: | Black Tea Tree, River Tea Tree | |
| Australian bush name: | Kwila-Yataly (Groote Eylandt); Black ti-tri | |
| Plant parts used: | leaves, inflorescence | |
| Reference literature: | see bibliography | |
| Active substances: | Essential oils Saponins Vitamins Flavonoids Phytosterols UVzymes™ | revitalising, regenerating softening regenerating circulation stimulant cell regeneration UV filter / absorber |
| Ethnobotany: | | |

Groote Eylandt Aboriginals used the leaves for the treatment of aches and pains with the leaves being crushed by hand and rubbed on. Sometimes, young leaves and twigs were crushed and steeped in water with part of the solution being used to bathe affected parts. The remainder of the solution was poured over the head. Crushed leaves are sniffed to relieve headaches.

The plant is also used internally for the cure/relief of coughs, stomach cramps, asthma and colic, for which 1 - 5 drops of the leaf juice is used. Other uses are for the treatment of neuralgia and rheumatism, as a potent anti-spasmodic and sudorific, and as an insecticide and insect repellent.

Cosmetically, it is used in certain rituals by tribes living around the Queensland and for bathing where it offers some skin hydrating properties in addition to the protection it offers from the local insect population.

Applications and dosage recommendations:

Black Tea Tree is particularly effective in preparations designed for the protection and care of damaged and very tired skin conditions. It increases the resistance and elasticity of the skin and is highly suitable for day and night cream formulations.

In after sun preparations, it can prevent drying out of the skin.

| | |
|-----------------------|-----------|
| In skin care products | 3 - 5 % |
| In hair care products | 2 - 3 % |
| Bath cares products | 10 - 15 % |

Application codes: ITS, RTS, RSS, SSS, SRB, DBH

Specification:

| | |
|--------------------------------|---|
| Concentration: | 1 kg extract = 1.0 kg Black Tea Tree |
| Appearance: | clear, colourless liquid |
| Odour: | pleasant, aromatic |
| Propylene glycol: | 28.0 % |
| Identification: | positive, TLC specification |
| Solubility (water) | clears, soluble |
| Solubility (surfactants) | clears, soluble |
| Density (20° C) | 1.010 - 1.050 |
| Refractive index (n 20° C) | 1.400 - 1.410 |
| Preservative: | nil |
| Total germs: | <100/g |
| Pesticides: | <0.05 ppb |
| Heavy metals (Pb, Cd, Hg, As): | <0.001 ppm |

Comments:

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AUSTRALASIAN HERBAL EXTRACTS for COSMETICS FORMULATIONS

PRODUCT TECHNICAL DATA SHEET

| | | |
|------------------------------|--|---|
| Product name: | Bottle Brush Ti-Tri | |
| Latin name: | <i>Melaleuca hypercifolia</i> F.v.Muell | |
| Botanical synonym: | | |
| Botanical synonym: | Bottle brush Tea Tree | |
| Australian bush name: | botol balsh (Queensland) | |
| Plant parts used: | leaves, flowers | |
| Reference literature: | see bibliography | |
| Active substances: | amino acids Phytosterols mucins Essential oils UVzymes™ | tightening protective care hydration soothing UV filter / absorber |

Ethnobotany:

The crushed leaves of the bottle brush tea tree are sniffed to relieve headaches. They are also used to prepare effective hair washes for children and aged members of the tribe. Additionally, they are used for the preparation of facial washes for hunter/gatherer and for body washes prior to community ritual dances.

Applications and dosage recommendations:

Bottle Brush Tea Tree is particularly recommended for skin care products as a vitalising and moisturising ingredient. It may be incorporated to good effect in cream moisturisers, day and night creams etc. In Bath cares products, the soothing effects of the Essential oils, in conjunction with the other ingredients, suggest application in new generation 2-in-1 moisturising shower gels.

| | |
|-----------------------|---------|
| In skin care products | 2 - 5 % |
| In hair care products | <15 % |
| Bath cares products | <15 % |

Application codes: **RTS, ITS, RSS, OGS, OGH, SRB, UV A&B**

Specification:

| | |
|----------------|--|
| Concentration: | 1 kg extract = 1.0 kg Bottle Brush Tea Tree |
| Appearance: | clear, colourless liquid |
| Odour: | aromatic |

| | |
|--------------------------------|-----------------------------|
| Propylene glycol: | 30.0 % |
| Identification: | positive, TLC specification |
| Solubility (water) | clear, soluble |
| Solubility (surfactants) | clears, soluble |
| Density (20° C) | 1.010 - 1.025 |
| Refractive index (n 20° C) | 1.360 - 1.390 |
| Preservative: | nil |
| Total germs: | <100/g |
| Pesticides: | nil |
| Heavy metals (Pb, Cd, Hg, As): | <0.01 ppm |

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AUSTRALASIAN HERBAL EXTRACTS for COSMETICS FORMULATIONS

PRODUCT TECHNICAL DATA SHEET

| | | |
|------------------------------|--|---|
| Product name: | Broad Leafed Tea Tree | |
| Latin name: | <i>Melaleuca wilsonii</i> F.v.Muell | |
| Botanical synonym: | <i>M. leucadendron</i> var. <i>viridiflora</i> , <i>M. quinquenervia</i> | |
| Botanical synonym: | Swamp Tea Tree, Paperbark Tea Tree | |
| Australian bush name: | Numbah Tea Tree, Belbowrie Tea Tree | |
| Plant parts used: | leaves, flowers | |
| Reference literature: | see bibliography | |
| Active substances: | mucins Essential oils Flavonoids Tannins UVzymes™ | hydration soothing/relaxant circulation stimulant astrigent UV filter / absorber |

Ethnobotany:

Young Leaves are steeped in hot water and drunk for general sickness, cold and coughs. Aboriginals around the Cape York peninsula used these plants for the general soothing of body aches. One technique used to good effect was to dam inlets of the sea with sand and rocks thus creating pools of warm salt water. Crushed leaves were then thrown in and the patients could sit immersed in the warm, medicated water effectively soothing the aches and pains in their bodies.

Applications and dosage recommendations:

Broad Leafed Tea Tree is particularly suitable for soothing and relaxing bath preparations mirroring its traditional Aboriginal use. Additionally, it may be recommended for use in products intended to alleviate stressed and strained skin.

| | |
|-----------------------|------|
| In skin care products | <5 % |
| Bath cares products | 10 % |

Application codes: **SRB, SSB, RTS, ADS, UV A&B**

Specification:

| | |
|-------------------|--|
| Concentration: | 1 kg extract = 1.8 kg Broad Leafed Tea Tree |
| Appearance: | clear, colourless liquid |
| Odour: | pleasant, aromatic / medicinal |
| Propylene glycol: | 41.0 % |
| Identification: | positive, TLC specification |

| | |
|--------------------------------|-----------------|
| Solubility (water) | clears, soluble |
| Solubility (surfactants) | clears, soluble |
| Density (20° C) | 1.020 - 1.070 |
| Refractive index (n 20° C) | 1.370 - 1.400 |
| Preservative: | nil |
| Total germs: | <100/g |
| Pesticides: | nil |
| Heavy metals (Pb, Cd, Hg, As): | <0.01 ppm |

Comments:

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CAMPO RESEARCH SYSTEMS

AUSTRALASIAN HERBAL EXTRACTS for COSMETICS FORMULATIONS

PRODUCT TECHNICAL DATA SHEET

| | | |
|------------------------------|--|--|
| Product name: | Broom Brush Ti-Tri | |
| Latin name: | <i>Melaleuca uncinata</i> F.v.Muell | |
| Botanical synonym: | | |
| Botanical synonym: | Broom brush; broom honey myrtle | |
| Australian bush name: | Siris (S. Australia, Victoria) | |
| Plant parts used: | leaves, flowers | |
| Reference literature: | see bibliography | |
| Active substances: | mineral salts Essential oils Tannins UVzymes™ | moisture regulating anti-inflammatory astringent UV filter / absorber |

Ethnobotany:

Local Aborigines for the relief of catarrh chew the leaves of this broom honey-myrtle. A decoction of the leaves is used as a wash for cleansing the skin prior to the application of pigment decoration for ritual dances.

Applications and dosage recommendations:

Broom honey-myrtle is particularly effective in revitalising skin care preparations. The astringency of the tannins brings about the contraction of large skin pores reducing sebaceous secretions and in conjunction with the moisture regulating mineral salts helps restore natural tone and elasticity to the skin. This functionality can also be applied to some effect in bath care preparations, whilst use is also suggested in shampoos and rinses for greasy hair.

| | |
|-----------------------|--------|
| In skin care products | <5 % |
| In hair care products | 3 - 5% |
| Bath cares products | 10 % |

Application codes:

Specification:

| | |
|--------------------|--|
| Concentration: | 1 kg extract = 1.30 kg Broom honey myrtle |
| Appearance: | clear, colourless liquid |
| Odour: | pleasantly aromatic |
| Propylene glycol: | 45.0 % |
| Identification: | positive, TLC specification |
| Solubility (water) | clears, soluble |

| | |
|--------------------------------|-----------------|
| Solubility (surfactants) | clears, soluble |
| Density (20° C) | 1.020 - 1.050 |
| Refractive index (n 20° C) | 1.370 - 1.400 |
| Preservative: | nil |
| Total germs: | <100/g |
| Pesticides: | nil |
| Heavy metals (Pb, Cd, Hg, As): | <0.01 ppm |

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AUSTRALASIAN HERBAL EXTRACTS for COSMETICS FORMULATIONS

PRODUCT TECHNICAL DATA SHEET

| | | |
|------------------------------|---|--|
| Product name: | Liniment Ti-Tri | |
| Latin name: | <i>Melaleuca symphyocarp</i> F.v.Muell | |
| Botanical synonym: | | |
| Botanical synonym: | Liniment Tree | |
| Australian bush name: | Mawilyaburna | |
| Plant parts used: | leaves, flowers | |
| Reference literature: | see bibliography | |
| Active substances: | carotenoids Essential oils Flavonoids UVzymes™ | granulation promoting bacteristatic/fungicidal circulation stimulant UV filter / absorber |

Ethnobotany:

This medicinally important variety of tea tree grows in swampy woodlands in Northern Australia. Aboriginals of the Groote Eylandts use its leaves as a liniment and for the relief of headaches. The leaves are boiled in water and the steam inhaled to ease colds, whilst the crushed leaves are rubbed on the chest to ease difficult breathing. Crushed leaves are also applied to hair and skin as a cleansing agent and are also sometimes applied to wounds.

Applications and dosage recommendations:

Liniment Tea is particularly effective in formulations for reddened and tired skin conditions. In hair care products, the Flavonoids serve to stimulate blood circulation of the scalp improving the general health of the scalp and hair. This can be particularly important in helping to normalise greasy hair and scalp conditions.

| | |
|-----------------------|---------|
| In skin care products | 2 - 5 % |
| In hair care products | 5 - 10% |
| Bath cares products | 10 % |

Application codes: **RTS, ITS, RSS, OGS, OGH, NSH, SRB, UV A&B**

Specification:

| | |
|-------------------|--|
| Concentration: | 1 kg extract = 1.0 kg Liniment Tree |
| Appearance: | clear, colourless liquid |
| Odour: | aromatic |
| Propylene glycol: | 45.0 % |
| Identification: | positive, TLC specification |

| | |
|--------------------------------|-----------------|
| Solubility (water) | clears, soluble |
| Solubility (surfactants) | clears, soluble |
| Density (20° C) | 1.021 - 1.065 |
| Refractive index (n 20° C) | 1.376 - 1.395 |
| Preservative: | nil |
| Total germs: | <100/g |
| Pesticides: | <0.01 ppb |
| Heavy metals (Pb, Cd, Hg, As): | <0.01 ppm |

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AUSTRALASIAN HERBAL EXTRACTS for COSMETICS FORMULATIONS

PRODUCT TECHNICAL DATA SHEET

| | | |
|------------------------------|---|-----------------------------|
| Product name: | Australian Neem Tree | |
| Latin name: | <i>Melia australasica</i> Blake | |
| Botanical synonym: | <i>Melia azadirachta</i> var <i>australasica</i> | |
| Botanical synonym: | Cape lilac, Chinaberry, bead tree, white cedar, Aussie Neem | |
| Australian bush name: | dygal, dtheerah, and kiluain | |
| Plant parts used: | cured leaves | |
| Reference literature: | see bibliography | |
| Active substances: | azadorachtin | fungistatic |
| | Saponins | softening |
| | Tannins | astringent |
| | Nimbidin** | healing |
| | UVzymes™ | UV filter / absorber |

** The active principal, nimbidin, which is responsible for the characteristic malodour of neem is neutralised to 0.005 ppm by non-chemical means.

Ethnobotany:

Amongst early white settlers in Australia, the leaves of this tree were used as a substitute for quinine for the treatment of malaria. The berries and flowers were soaked in whisky as a tonic and anthelmintic drink. Queensland rainforest aboriginals called this whisky based remedy *lilac water*. It has a faint vanilla odour probably due to the anthelmintic principal, vanillic acid. Crushed leaves have been applied to wounds relying on the cicatrising action of polyphenols whilst the softening action of the Saponins has been used to good effect on warts.

Applications and dosage recommendations:

Melia australasica is particularly effective for hair regeneration where the original loss is due to fungal infections. The scalp circulation stimulating properties of Flavonoids supports the fungistatic properties of azadirachtin. The tannins act as natural, gentle astringents effectively closing large pores in the skin, suggesting application in creams and lotions for greasy skin conditions. The extract has also shown cicatrant, vasodilatory and deodorant properties.

| | |
|-----------------------|---------|
| In skin care products | < 5 % |
| In hair care products | 3 - 5 % |
| Bath cares products | 10 % |

Application codes: **RTS, ITS, RSS, OGH, OGS, SRB, UV A&B**

Specification:

| | |
|--------------------------------|---|
| Concentration: | 1 kg extract = 1.0 kg Australian Neem Tree |
| Appearance: | clear, colourless liquid |
| Odour: | almost odourless |
| Propylene glycol: | 30.0 % |
| Identification: | positive, TLC specification |
| Solubility (water) | clears, soluble |
| Solubility (surfactants) | clears, soluble |
| Density (20° C) | 1.010 - 1.022 |
| Refractive index (n 20° C) | 1.372 - 1.387 |
| Preservative: | nil |
| Total germs: | <100/g |
| Pesticides: | nil |
| Heavy metals (Pb, Cd, Hg, As): | <0.01 ppm |

Comments:

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*****THE END*****

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