

Blue Cypress

Common Name:	Northern Australia Cypress Pine, Karnitirrikani (Tiwi language)
Botanical Name:	<i>Callitris intratropica</i>
Family:	Cupressaceae
Plant part used:	Wood and bark
Extraction Method:	Steam distillation



The essential oil is distilled from chipped bark and wood of the tree and requires a long distillation. Resinous compounds in the bark react during distillation with other aromatic compounds to create guaiazulene, an anti-inflammatory compound similar to chamazulene that gives the essential oil its dark blue colour.

The oil is primarily a 'base' note and has a sweet woody, balsamic and herbaceous aroma. It is an excellent perfume fixative that will blend well with other woody notes, citrus and 'green' aromas.

Origin:

The genus name, *Callitris*, is derived from the Greek *calli* (beautiful) and *treis* (three) in reference to the triangular shape of the scale-like leaves that are arranged in whorls of three.

Cypress Pine is native to Australia and grows in the Northern Territory (including Melville & Bathurst Islands), northern Western Australia, Cape York and northeast Queensland. Its range of altitude is from near sea level up to 900 metres. The tree usually grows in open forest but also found in heath forest, vine thickets, monsoon forest and on rain forest edges. Cypress Pine is a medium to large sized tree, from 15 to 45 metres in height. The timber is very aromatic, resistant to termites and splits quite readily into fine chips or kindling for lighting cooking fires.

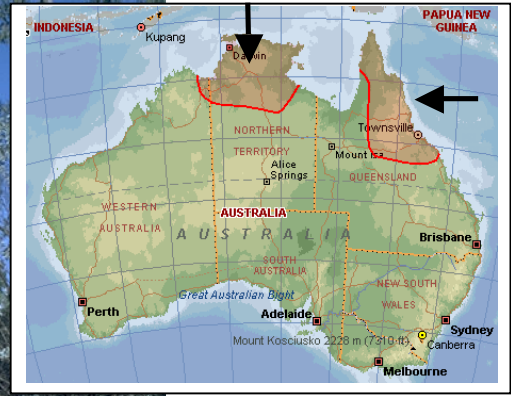
Cypress Pine can live for over 200 years, hence spanning the time before there was significant European settlement. The population of Cypress Pine trees has gone down dramatically in the Northern Territory over the past 100 years. The theory is that modern bush fire regimes are the cause. The Cypress Pine can withstand low intensity fires, but are killed by high intensity ones.

Blue Cypress essential oil is extracted from plantation grown trees, not from wild-harvesting.

History

Many Australian native plants have been utilized as medicine for thousands of years amongst the Australian Aboriginal people. Plants rich in essential oils have been a major part of the Aboriginal 'medicine chest' and are traditionally prepared in a variety of ways, such as:

- Hand crushing the plants or placing them on hot stones or ashes to inhale the vapours.
- Crushing the plant material and applying as a poultice to areas needing treatment.
- Extracting the plant material in hot water and then applying as a wash to the body.



Cypress Pine trees & map of distribution

The Tiwi people of Melville & Bathurst Islands and some mainland aboriginal groups use Cypress Pine in the following ways:

- As an analgesic: The ashes of the wood are mixed with water and smeared over the affected part of the body, and are claimed to relieve minor aches and pains.
- As a wash: About a handful of freshly gathered inner bark is pounded and heated in approximately 500mls of water. The cooled infusion is spread over the body, and a long strand of inner bark is wrapped around the abdomen to relieve abdominal cramps. The infusion is also applied to sores and cuts. It is occasionally used internally for abdominal pain and discomfort.
- As an insect repellent: The bark is thrown into the camp fire to drive off mosquitoes and midges.

The first recorded use of *Callitris intratropica* by European settlers was in 1905 by a Mr. Joe Cooper, who milled the timber for building purposes. At this same time, R.T. Baker (the economic botanist) and H.G. Smith (the essential oil chemist) were assembling their masterly work entitled 'A Research on the Pines of Australia' in which, among others, the characteristics and properties of *Callitris intratropica* were investigated and defined.

The resin of Cypress Pine and other native *Callitris* species is known as Australian Sandarac resin. It has been used in the past as a coating for 'gastro-resistant' capsules, so that capsules will not dissolve in the stomach.

The major economic use of Cypress Pine was the use of its termite-resistant timber in Northern Australia. The first plantations were established on Melville Island in the early 1960's and on the Northern Territory mainland in following years. Poor growth rates caused the cessation of Cypress Pine plantings, and *Pinus caribaea* and other species were used in later plantations on both Melville and the Mainland.

The devastation of Cyclone Tracey in 1974 in Darwin saw new building codes that discouraged the building of timber framed houses. And in the late 1970's the Federal Government cut the expensive

funding of timber plantations in the Northern Territory, bringing the timber plantation scheme to an end.

The first essential oil production began in the mid-1990's, originally using an established plantation in the Northern Territory. The oil has been promoted as a potential popular fragrance compound.

In the present, Blue Cypress oil remains in production, sustainably extracted from plantation-grown trees. It is a unique Australian essential oil that has some real therapeutic potential. We trust with continued use by therapists and research, all these possibilities will become clear.

Principal Constituents of Blue Cypress essential oil by percent:

Monoterpenes: alpha-pinene 1.00, delta-3-carene 0.34, p-cymene 0.1, limonene 0.18, p-cymenene 0.18

Sesquiterpenes: beta-elemene 1.40, alpha-guaiene 0.83, eudesma-1,4(15),11-triene 2.20, selina-4,11-diene 1.82, eremophilene 3.38, delta-selinene 0.69, alpha-selinene 3.07, alpha-bulnesene 1.10, selina-3,7(11)-diene 0.32, guaiazulene 0.43

Sesquiterpene alcohols: elemol 1.57, guaiol 14.88, gamma-eudesmol 9.14, beta-eudesmol 5.29, alpha-eudesmol 5.13, bulnesol 8.43

Sesquiterpene lactones: callitrisin 2.46, dihydrocallitrisin 9.30

Sesquiterpene furan: cis-dihydroagarofuran 2.80

Also: borneol 0.17, alpha-terpineol 0.22, myrtenol 0.21, myrtenal 0.21, verbenone 0.30

Properties & Applications:

With its high content of sesquiterpenes, including guaiazulene, we can reasonably expect that Blue Cypress oil will have useful anti-inflammatory properties.

There are a number of anecdotal reports that Blue Cypress oil does have both inflammation and pain-relieving benefits, as in helping to relieve allergy-induced hives, insect bites (such as from sand flies, mosquitoes, wasps and bees) and soothing nappy rash.

One reported small trial investigated the reduction of erythema (redness of the skin caused by dilation of the capillaries in response to inflammation) caused by the sensitization reaction to Peru Balsam. Erythema was induced on forearms of five volunteers by application of standard dose of Peru Balsam applied over area approx. 2cm x 2cm to inner forearm, and patch closed for 4 hours. The recorded irritation scores were in the mild to moderate (1.5 - 3.5) range.

The patches were removed, and undiluted Blue Cypress Oil was applied randomly to half of the irritated skin at rate of approximately 0.5ml over area. The patches with Blue Cypress oil were replaced as needed over four hours. None of the volunteers experienced any skin irritation from the Blue Cypress oil.

On removal of the patches, all treated areas were found to have reduced levels of erythema, with the irritation scores dropping to the minimal level of 0 to 0.5. The control, untreated areas remained relatively unchanged in the level of erythema and irritation.

In the case of psoriasis, Blue Cypress is of potential benefit in reducing hypervascularity (increased number and concentration of capillaries) and inflammation in this condition. The use of Aloe Vera gel, Tamanu vegetable oil and Calendula CO2 extract with Blue Cypress oil could be a useful preparation.

In terms of musculo-skeletal complaints, there are reports of Blue Cypress oil helping with the pain and inflammation of general joint pain & swelling and with rheumatoid arthritis.

Blue Cypress oil appears to have anti-viral properties, with reports of the oil being beneficial against common warts (caused by the *Papillomavirus*), shingles (*Varicella* or *Herpes zoster*) and cold sores (*Herpes simplex*).

Blue Cypress oil has also been used on minor burns, where it was reported it significantly reduced the healing time and pain associated with the injury.

With a high content of sesquiterpene lactone compounds, Blue Cypress oil may have some useful mucolytic (mucous-thinning) effects in respiratory and nasal congestion, as is the case with atlantolactone as found in small amounts in Sweet Inule oil (*Inula graveolens*). This is a theory only and such a benefit would need to be demonstrated in practice.

Guaiac Wood oil (*Bulnesia sarmienti*) is claimed to be of benefit as a venous and lymphatic decongestant, as in the case of lymphatic congestion & oedema, minor varicose veins and haemorrhoids. Blue Cypress oil is similar in its constituents to that of Guaiac Wood oil and it therefore reasonable to suggest that Blue Cypress oil may be of benefit in such conditions.

Safety:

In order for Blue Cypress to be approved for use in Australia and overseas, the oil had to be assessed by Worksafe Australia, which requires animal toxicity testing.

The summary of testing demonstrated:

Both the oral and dermal acute toxicity is greater than 2 grams per kilogram of body weight – in comparison, this means above 140 grams for a 70kg adult. Given the composition of the essential oil, the acute toxicity (LD₅₀ – lethal dose 50%) is likely to more than 5 grams per kilogram, but this dose level was not tested.

In the studies conducted, Blue Cypress oil was found to be sensitizing to 40% of guinea pigs when the undiluted oil was applied to abraded skin and covered.

Blue Cypress oil was classed as irritating when applied undiluted and covered with a semi-occlusive dressing on rabbit skin.

No skin irritation or allergic sensitization reactions have been reported with people using Blue Cypress oil and in fact appears to have anti-inflammatory benefits. All essential oils, including Blue Cypress, are recommended to be used diluted on the skin, not undiluted.

In summary, Blue Cypress is non-toxic at usual diluted dosages. In cases of those with sensitive skin and conditions such as eczema, the oil should be used diluted at 2.5% or less. It is recommended that in these cases that a small amount of a preparation is tested on the skin to determine any possible reaction.

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