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FOR SCIENTIFIC
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MORE THAN JUST FRAGRANCE

Essential oils | The current trend towards more naturalness in formulations also means that people are looking for alternatives to artificial fragrances in cosmetics. Essential oils are both popular and controversial for this. Andrew Brown talks about the possibilities of these oils and knows that they can offer much more than just fragrance.





► **Andrew Brown,**
Head of Research & Development,
Quintis Sandalwood, West Perth,
Australia, www.quintis.com.au

COSSMA: Why should formulators consider essential oils as a fragrance in cosmetics?

Andrew Brown: Essential oils are usually associated with fragrance compositions and aromatherapy applications. There is, however, an increased body of published work that suggests many of these oils have physiological effects that position essential oils as a cosmetic active ingredient.

Formulators are missing a market opportunity if they are only using essential oils for fragrance, some oils offer therapeutic benefits and can serve as an active ingredient for a formulation. Indian sandalwood oil is a great example of this: it has a soft, woody scent that combines well with many other fragrances, providing complexity and length of odour to a fragrance composition.

Aromatherapy qualities may be realised when incorporating Indian sandalwood oil into cosmetic preparations. These features involve calming and improving attentiveness in the mind^{1,2}.

As well as providing a sensorial benefit, this oil is a natural antioxidant, anti-inflammatory, antimicrobial and anti-pigmenting ingredient; it holds its own as a cosmetic well-being ingredient^{3,4}. Studies show that it has the ability to provide skin care benefits in preparations positioning as anti-ageing, acne and inflammation.

How high is the risk of allergic reactions and how can this be counteracted?

Essential oils are a mix of chemical compounds. Certain essential oils and constituents have been shown to produce sensitisation in some individuals. The safe use of essential oils comes down to regulatory compliance and correct quality assurance. Regulatory authorities around the globe have set clear guidelines in limits on biological and chemical safety. You should seek guidance from your local responsible authority, in Australia it is the Standard for Uniform Scheduling of Drugs and Poisons.

Formulators should rely on correct quality certifications for authenticity to ensure safe use. The accepted industry standard to determine safe usage levels is the IFRA (International Fragrance Association) standards and their Quantitative Risk Assessment (QRA) model. An IFRA Standards Conformity Certificate should be requested from suppliers, this will enable formulations to be constructed that are safe for consumers.

How durable are oils when used in this way?

Essential oils can go through auto-oxidation when stored and compounded into formulations, however, this can be minimised by formulating correctly and ensuring the correct storage of the raw material conditions. Products of auto oxidation are associated with irritation.

All essential oils should be stored in tightly closed containers protected from light and elevated temperatures. Contact your supplier for correct storage condition temperatures. ►

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In the right formulation, high-quality and pure essential oils can not only give the product a pleasant scent but also improve the caring properties.

Which reactions with other ingredients are possible or which ingredients must be avoided?

Sandalwood is generally stable and compatible with many ingredients used in cosmetic and topical formulations. Our studies have proven that sandalwood oils remain stable in many oil-in-water and water-in-oil emulsion systems, emulsifying in a

wider Hydrophilic-lipophilic balance (HLB) range, with varying pH levels. Activity and functionality of chemically sensitive preservatives, gelling agents, and active components like vitamins were not affected by Indian sandalwood oil up to 10% w/w in formulations. However, like any other natural product, it is advisable not to use oxidising agents such metal ion-containing dyes or pigments.



For essential oils to remain stable in the formulation, they must be properly stored as raw material and then carefully formulated.

What, if any, are the downsides to using essential oils in cosmetics?

Essential oils are excellent active and functional ingredients for cosmetics. As with any ingredient, a careful assessment of safety, stability and compatibility is to be conducted before considering an essential oil for product development. Some essential oils can impart a strong aroma to the product, and incompatibility of ingredients can cause poor stability and efficacy. Using a versatile essential oil from a reputed supplier, with the necessary certifications, can reduce the uncertainty of product development and down-stream regulatory and stability issues.

What are the benefits for the skin in having sandalwood oil in cosmetic formulations?

Indian sandalwood oil is a multifunctional cosmetic ingredient that provides multiple benefits to a cosmetic preparation. While it is an excellent candidate to be the key active ingredient, it can work synergistically with other actives in cosmetic formulations, going far beyond just being a wonderful scent in products. It has sophisticated organoleptic qualities in its own right and combines well with other fragrances. It also brings aromatherapy and cosmeceutical benefits to a preparation. This multifunctionality and the fact that these qualities are realised at low concentration – typically less than 1% – mean that many on-trend boxes are ticked, such as “less is more cosmetics” or “skinimalism”, natural positioning and provide green chemistry out comes. □

References

1. T. Hongratanaworakit, E. Heuberger and G. Buchbauer, *Planta Med.*, 2004, 70, 3-7
2. E. Heuberger, T. Hongratanaworakit and G. Buchbauer, *Planta Med.*, 2006, 72, 792-800
3. Dickinson SE, Olson ER, Levenson C, Janda J, Rusche JJ, Alberts DS, Bowden GT. A novel chemopreventive mechanism for a traditional medicine: East Indian sandalwood oil induces autophagy and cell death in proliferating keratinocytes. *Arch Biochem Biophys.* 2014 Sep 15; 558:143-52.
4. Sharma M, Levenson C, Bell RH, Anderson SA, Hudson JB, Collins CC, Cox ME. Suppression of lipopolysaccharide-stimulated cytokine/chemokine production in skin cells by sandalwood oils and purified α -santalol and β -santalol. *Phytother Res.* 2014 Jun; 28(6):925-32.

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