

Essential oils, active ingredients in hair formulations

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Abstract

Essential oils are widely used in the field of cosmetics due to their countless benefits. Though natural, these active ingredients are nevertheless not devoid of toxicity and their use requires sound knowledge.

This article proposes a non-exhaustive overview of the beneficial action of different essential oils on hair disorders that have been tested in vitro and/or in vivo.

Introduction

As natural extracts, essential oils (EOs) are rising in popularity among consumers and their novel applications in cosmetics are expanding everyday. They represent a rich source of ingredients for hair care with their multiple properties defined by their very complex chemical compositions [1].

Which essential oil for which problem?

Due to their lipophilic nature, EOs provide shine and softness to the hair, due to their ability to form a film on the hair shaft. Examples include geranium EO, eucalyptus EO and others. Caused by an over-

growth of certain yeast on the scalp, dandruff is one of the most common scalp disorders. Synthetic antifungal agents used in the treatment are often effective but relatively toxic. Therefore, natural active ingredients such as EOs represent an interesting alternative in relieving such hair disorder [2]. The most popular anti-dandruff hair oils are Citrus bergamia, Thymus vulgaris, Lavandula angustifolia and Salvia sclarea. In addition to their antifungal action, these oils have antiseptic, antimicrobial and anti-inflammatory properties, too. Interestingly, a randomized, placebo-controlled study conducted to assess the efficacy of shampoo with 5% tea tree EO indicated that this formulation was effective in reducing dandruff

with no side effects. Besides their anti-seborrheic action, the antifungal action of EOs from *Cinnamomum zeylanicum* and *Mentha arvensis* against the *Malassezia globosa* yeast has been proved in vitro. These results suggest EOs' efficacy in the treatment of the scalp seborrheic dermatitis.

Rosemary EO is an active hair care ingredient. It is interesting remedy for both dandruff and oily hair. Tested in humans, this oil proved as efficient as minoxidil against androgenetic alopecia. Its antioxidant properties help neutralize the free radicals generated due to this hair condition. Thanks to its vasodilatation properties, Rosemary EO helps activate the blood circulation to the scalp.

It is of note that the association of EOs having different properties strengthens their action for hair care. This is the case of a shampoo containing combination of six EOs (*Punica granatum*, *Rosmarinus officinalis*, *Matricaria chamomilla*, *Urtica dioica*, *Mentha piperita* and *Salvia officinalis*) that proved to be effective in treating dandruff.

The effectiveness was due to the combination of the antifungal properties of EOs, which contributed to reduce dandruff, with the anti-inflammatory properties of some compounds, for example, menthol and α -bisabolol present in the EOs of *Mentha piperita* and *Matricaria chamomilla*, respectively [3].

Furthermore, mixing different EOs of *Rosmarinus officinalis*, *Cedrus libani*, *Lavandula angustifolia*, *Cananga odorata*, *Cedrus atlantica*, *Pelargonium graveolens* L. and *Citrus sinensis* has proved to be capable to boost scalp circulation, to regulate sebum production, to eliminate dandruff, and to treat alopecia.

Conclusion

Essential oils are very active preparations and can thus be toxic. Therefore, it is essential to know their chemical composition beforehand to study their effectiveness and their side effects besides diluting them in vegetal oils in order to guarantee safe use.

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