



PHYTocosMETICS: development of formulations for skin care.

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Abstract

The scope of this research was the use of raw material of natural origin in the development of phytocosmetic formulations for use by the elderly. From the plants selected for this project, glycolic extracts were prepared and essential oils were extracted from the aromatic species, for the purpose of incorporation into the cosmetic formulation. Chromatographic techniques were applied for the characterization of these extracts and volatile oils prior to incorporation into creams, gels, soaps and ointments formulations, and their stability was evaluated. As a result, were obtained stable and well-accepted formulations by the target group, as well as give an overview of the various phytocosmetic production steps.

Key words:

Phytocosmetics, formulations, plant extracts.

Introduction

The growing demand for natural products is associated with a growing interest in what is healthy and natural.

The constant exposure of the skin to the solar radiation, smoking and pollution associated with aging, require greater attention to daily care, where medicinal plants play an important role because of its therapeutic properties. The efficacy of essential oils as antimicrobial agents is associated with its use in podology, for example.

This work had as objective the development of phytocosmetics for the elderly, including the production and characterization of glycolic extracts and essential oils. Also the development of bases for phytocosmetics, formulations for podology and photo protection, as well as evaluation of the stability of the final product.

Finally, phytocosmetic formulations developed were used in the Community Extension Project (PEC 2016): "Learning to transform medicinal plants into safe herbal medicines".

Results and Discussion

Aloe vera, *Calendula officinalis* and *Lippia sidoides* glycolic extracts were selected due to their cicatrizing, antibacterial, antifungal, anti-inflammatory and emollient properties. In addition to the antimicrobial action of essential oils (*Melaleuca alternifolia*, *Thymus vulgaris* and *Syzygium aromaticum*), studies have shown cicatrizing and anti-inflammatory action. Figure 1 shows some of the formulations developed.



Image 1. Formulations developed: A. Sunscreen without extracts. B. Sunscreen with *A. vera* extract (3%). C.

Sunscreen with extract of *C. officinalis* (3%). D. Sunscreen with extract of *A. vera* and *C. officinalis* (1:1). E. Cream with plant extracts. F. Solution for podology with essential oils. G. Cream with sunscreen and extract of *A. vera* on the skin.

According to the *in vitro* method developed by Mansur¹, the photo protective effect of the extracts was evaluated and the results are presented in Figure 2.

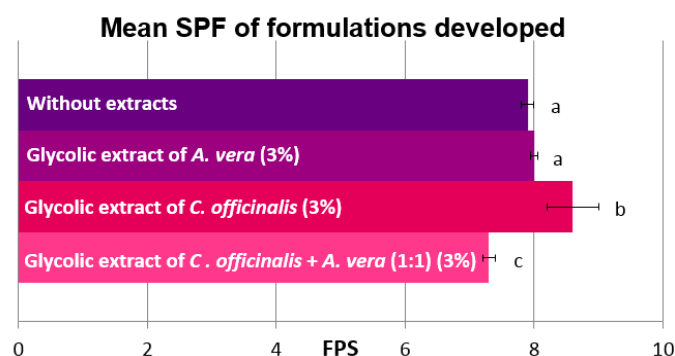


Image 2. Mean SPF of the formulations developed.

The result of the incorporation of *C. officinalis* glycolic extract (3%) was the one that most contributed to the increase of the photo protective effect in the cream. However, it should be emphasized that performing an *in vivo* assay would be necessary for a better evaluation of its photo protective action.

Conclusions

Special care is essential at every step of the process for the production of quality phytocosmetic, including the quality of the vegetal raw material, plant processing and good handling practices. The essential oils and plant extracts incorporated into the formulations developed provided antimicrobial, healing, photo protective and moisturizing action to the products, as well as the natural appeal that has been appreciated by consumers.

¹ MANSUR, J. S.; BREDER, M. N. R.; MANSUR, M. C. A.; AZULAY, R. D. Determination of the solar protection factor by spectrophotometry. *An. Bras. Dermatol.*, v. 61, p. 121-124, 1986.