

Evaluation of the use of extract from the plant *Pereskia culeata* Miller in the inflammatory control of scalp psoriasis

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Abstract

Introduction: *Pereskia aculeata* Miller, popularly known as Ora pro Nobis, is a non-conventional food plant (PANC) which is known in folk medicine for its healing and anti-inflammatory powers. The difficulty in controlling scaling and itching and the lack of studies using natural products to provide a soothing action on the scalp of those suffering from psoriasis, affecting even serious emotional issues such as depression and anxiety, lead us to seek alternatives that can be used by them, causing less health damage and being practical for daily and continuous use. In order to improve the symptoms of psoriasis in people suffering from this scalp dysfunction, a natural alternative was sought with the use of a hair tonic using the extract of the *Pereskia aculeata* Miller plant as the active ingredient.

Case Report: This case report involved a participant, female, 25 years old, with a diagnosis of psoriasis confirmed by a dermatologist, who presented with an acute episode of the dysfunction on her scalp. After 2 months of using a hair tonic with *Pereskia aculeata* Miller extract as a therapeutic strategy, the participant was re-evaluated, showing a reduction in erythema and scaling plaques.

Keywords: Psoriasis; Scalp; *Pereskia aculeata* Miller.

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1. Introduction

Natural plant-based treatments have been on a constant rise. Currently, it is estimated that around 80% of the Brazilian population uses some type of natural-origin treatment [1]. The leaves of *Pereskia aculeata* Miller, belong to the cactus family, and were among the first species to be studied for their medicinal power in the mid-17th century [2]. Most PANCs are still relatively unknown regarding their use and properties and are generally hardy plants that do not require pesticides. The properties of plants generally depend on the location of planting, type of soil, whether fertilizers were applied or not, and even irrigation [4]. Psoriasis is a common chronic disease, affecting between 2% to 4% of people worldwide. It has no clear cause and has a negative impact on people's lives. This dysfunction has various types of manifestations, with the scalp being quite common [4]. Here we analyze the therapeutic effect of the hair tonic containing *Pereskia aculeata* Miller extract on improving erythema and itching caused by scalp psoriasis.

2. Case Report

The case report refers to a female participant, 25 years old, diagnosed with psoriasis by a dermatologist (Figure 1A and B). The characteristic signs of psoriasis were evaluated by digital trichoscopy examination (Figure 1G), using equipment from the Dino Lite brand, in

addition to images taken by a camera from the iPhone 13 cell phone. The participant provided written consent for the use of her data and image in a scientific publication, provided that they are preserved.

The participant used the hair tonic compounded by Farmadoctor São Miguel pharmacy, with pharmacist Wagner Dias dos Santos responsible, and its formulation includes hydro-glycerinated solution, standardized extract of *Ora pro Nobis* 5%, in amber packaging with a dropper applicator, used after washing with neutral shampoo containing deionized water, co-camidopropyl betaine, lauryl glucoside, xanthan gum, glycerin, and nipaguard. The conditioner used was from the Seda brand (Perfect Straight). The tonic was used for a period of 60 days, applied twice a day, in the morning and at night. After this period, a reevaluation was carried out. Through both the digital trichoscopy images and those taken with the cell phone, we can see that the treatment was positive. We were able to observe an improvement in the erythema and scaling in the affected areas (Figures 1A to 1H).



Figure 1. Photographic image of the right temporal (A, B, C and D), and left parietal (E and F) regions of the patient's head. Images G and H represent the evaluation by digital trichoscopy of the right temporal region of the patient's head. **A, C, E and G.** Before starting the therapeutic strategy. **B, D, F and H.** After 60 days of using the tonic.

4. Discussion

A 25-year-old patient diagnosed with psoriasis by a dermatologist was included in the study. The leaves of the *Pereskia aculeata* Miller plant have shown emollient potential, aid in the healing of skin wounds and inflammatory processes, are also used as analgesics and may prevent the formation of edema [5]. In the leaves of *Pereskia aculeata* Miller, we can find important minerals such as Potassium, Calcium, Magnesium, Sulfur, Phosphorus, Manganese, Iron, Zinc, and Copper [6]. Its composition also includes the presence of sterols (sitosterol) that have antifungal, antibacterial, and anti-inflammatory actions, thus justifying its effect in the treatment of pathologies.

Metabolites found in *Pereskia aculeata* Miller include α -carotene, β -carotene (rich in Vitamin A), lutein, α -cryptoxanthin, β -cryptoxanthin, stigmasterol, and sitosterol. Amino acids found in the leaves of *Pereskia aculeata* Miller include Arginine, Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Valine, Tryptophan (the most important present in the leaves), Aspartic Acid, Serine, Glutamic Acid, Proline, Cystine, Glycine, Alanine,

and Tyrosine [7]. The active compounds found in the leaves of *Pereskia aculeata* Miller may justify their use in treating pathologies such as psoriasis. However, further studies are necessary. The patient reports having felt improvement in itching and in the formation of scaling plaques. Furthermore, she notes improvements in hair volume and growth.

5. Conclusion

The active ingredient *Pereskia aculeata* Miller, in the form of a hair tonic, showed good results in reducing erythema and scaling plaques in a participant with scalp psoriasis. It is suggested that new studies be conducted to evaluate the mechanism of action of the active ingredient in scalp psoriasis.

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