

# Use of Herbal Medicinal Products in Skin Treatments

## ABSTRACT

Traditional medicine covers the rescue of the methodologies and techniques of cure, therapy, and prevention of diseases using medicinal plants. The objective of this paper is to conduct a literature review on the use of herbal medicines in skin treatment. The methodology used was a literature review conducted between 2015 and 2022 in national journals. The databases used were Google Scholar, SciELO, VHL, PubMed, and LILACS, using the following descriptors: "use of herbal medicines in skin treatments", "herbal medicines in skin treatments" and, "phytotherapy". The most commonly used medicinal plants were babosas (*Aloe vera L.*), arnica (*Arnica acaulis L.*), and barbatimão (*Stryphnodendron adstringens* (Mart.) Coville), confrei (*Symphytum officinale L.*), calendula (*Calendula arvensis L.*) and melaleuca (*Melaleuca alternifolia L.*). The most commonly used parts were leaves and bark, and infusion (tea) was the most commonly used preparation method. Most of the medicinal plants cited have their healing power evidenced by the scientific literature, thus favoring the quality of life of the individual who uses them. Thus, this article, obtained expressive results for human health, moreover, they establish an important step of bioprospecting, assisting in the choice of target plants for pharmacological verifications.

**Keywords:** Skin. Phytotherapy. Medicinal Plants.

## 1. INTRODUCTION

The market for herbal medicines has grown continuously, and this is due to the proven efficacy and positive results regarding the adherence to treatment by the population. Moreover, research on new molecules is the goal of most pharmaceutical industries and large research centers located in the United States and Europe, more viable to study natural molecules than to plan new drugs at random.<sup>1</sup>

The culture of phytotherapy use has been employed and spread for many generations. The healing power provided by plants brings a wide variety in the forms of treatment, and all parts of plants can be used, such as leaves, roots, seeds, fruits, and bark.<sup>2</sup>

Medicinal plants are highly sought after in the treatment of dermatological diseases due to their ability to stop bleeding, accelerate wound healing, as a treatment for burns, and relieve other skin diseases.<sup>3</sup>

Skin diseases are numerous and a frequent health problem, affecting all ages from newborns to the elderly and causing damage in many ways. Many people can develop skin diseases, including cancer, herpes, and cellulite. Some and their parts are often used to treat these diseases<sup>4</sup>

Nowadays, alternative medicine is promoted; therefore, efforts are being made to discover new herbal formulas to cure skin diseases and investigate the diversity and source of medicinal materials for the treatment of skin diseases.<sup>5</sup>

According to the World Health Organization (WHO), about 70-95% of the world's population in developing countries relies primarily on plants for their primary health care. Traditional medicine has not only gained popularity and approval but is sometimes the only system available in many rural areas. In addition, the use of medicinal plants to treat skin infections is very common in many rural areas.<sup>6,3,7</sup>

Several plants have been investigated for the treatment of skin diseases, from itching to skin cancer. Plants reported being effective in various skin diseases during the last few years of research work, being: *Achyranthes Aspera*, *Allium cepa*, *A. sativum*, *Aloe vera*, *Calendula officinalis*, *Daucus carota*, *Arnica acaulis L*, *Symphytum officinale L*, *Melaleuca alternifolia L*.<sup>4, 8, 9,10</sup>

Natural plant drugs are gaining popularity due to several advantages, such as often having fewer side effects, better patient tolerance, being relatively cheaper, and being accepted due to long history of use. In addition, herbal medicines provide rational means for the treatment of many diseases that are obstinate and incurable in other systems of medicine.<sup>11</sup>

Dermatology explores the fundamental knowledge available about the antimicrobial, anti-inflammatory, and healing properties of medicinal plants used to treat skin diseases.<sup>12</sup>

Phytotherapy has become increasingly popular around the world. There are countless drugs on the market that use the inscription "natural product" on their labels. Most of these drugs are composed of plants from foreign or Brazilian flora as raw material and have various purposes, such as calming, healing, and expectorants, among others.<sup>13</sup>

The presence of the pharmacist in phytotherapy has always been absolute, since the origin of the profession. In modern times, this participation involves several areas and, in the aspect in question, the manipulation and dispensation of formulas and industrialized phytotherapeutic products. In this condition, the professional always performed the pertinent orientations as to

indications, adverse effects, mode of use, and complementary information, although in an informal and undocumented manner.<sup>14</sup>

It is emphasized that every pharmacist duly registered in the state council is authorized to prescribe herbal medicines. Regarding non-pharmacological therapies, one imagines it is possible to add to the herbal medicine prescriptions suggestions for improvements in diet and home care procedures, such as inhalations, massages, and preparation of teas, increasing the possibility of achieving the healing/prevention process desired by the patient.<sup>14</sup>

The results of the work will be of great value in the field of knowledge, as it seeks an alternative to dermatological treatments. Such research will show the effectiveness of natural drugs to combat microorganisms in skin treatments. Recently this topic has been the subject of studies and analysis by different researchers investigating the use of herbal medicines in skin treatments. Aiming to broaden the discussion on this theme, which is of extreme social relevance, the objective of this work is to conduct a literature review on the use of herbal medicines in skin treatments.

## **2. MATERIALS AND METHODS**

This is a systematic review of the literature, based on previously published material, consisting mainly of books and scientific articles.

It conducts a search of scientific articles on the use of herbal medicines in skin treatment, where, this category of study requires a broad publication that uses published data and allows the author to delve deeper into already known problems and explore new areas of the chosen topic.

The following steps were followed to perform this work: I) choice of the theme; II) formation of criteria for inclusion and exclusion of articles (search engines); III) identification of the contents to be taken from the selected sources; IV) selection of the analyzed contents; and, V) analysis and summary of the results and presentation of the review.

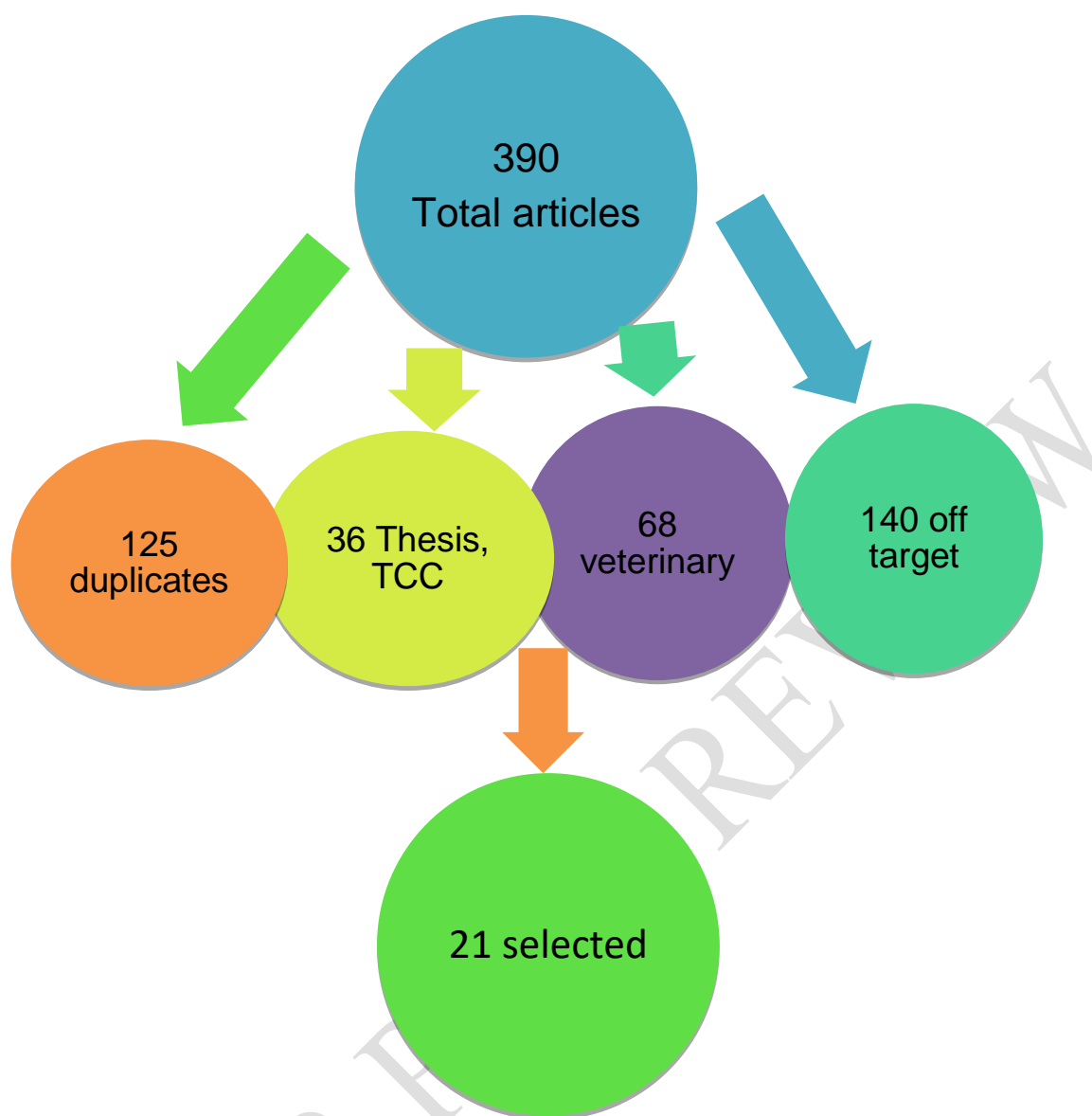
The work was conducted by researching scientific articles found in the electronic databases indexed in the data portal: VHL (Virtual Health Library), SciELO, Google Scholar, LILACS (Latin American and Caribbean Literature on Health Sciences), and Birene. The descriptors were used as: "use of herbal medicines in skin treatments", "herbal medicines in skin treatments", between the periods from 2015 to 2022 with research results that show medicinal plants used in dermatology.

The inclusion criteria used were original articles with experimental design (randomized or non-randomized clinical trials), observational (cross-sectional, case-control and cohort studies), and

systematic reviews, written in English and Portuguese. We excluded works such as opinion articles, duplicate publications, in the form of letters, commentaries, dissertations or theses, case reports and series, and studies that did not consider the inclusion criteria, besides those that were not available in full.

### **3. RESULTS AND DISCUSSION**

We identified 897 potentially relevant studies, among which 390 were selected based on the criteria chosen according to the flowchart (Figure 1). Of the 390 articles chosen for reading in full, 125 were excluded because they were duplicate studies, 36 were master's and doctoral theses, course completion work, 68 were research directed to veterinary medicine and 140 were outside the objective of the work, incomplete or international. Thus, only 21 articles (Table 1) were analyzed and discussed in this study. Table 1 presents the description of the selected articles.



**Figure 1:** Flowchart of exclusion criteria and article inclusion selection from eligibility. Adapted: Oliveira et al., 2018<sup>15</sup>

In Table 1 are distributed the 21 articles selected for the research where were extracted: the title of the article, the authors, and the year of publication. Eight articles were published in the year 2021.

**Table 1.** Distribution of the articles selected for the research.

Order	Author(s)	Year of publication	Title
01	Alves, Medeiros and Catelli <sup>15</sup>	2016	Evaluation of the healing action of guaçatonga ( <i>Casearia sylvestris Sw.</i> ) on experimentally induced wounds in mice
02	Souza and Rodrigues <sup>16</sup>	2016	Medicinal plants: indication of healers for the treatment of wounds
03	Souza et al. <sup>17</sup>	2016	Development and characterization of a topical formulation of Suvarna extract for wound treatment

04	Leal et al. <sup>18</sup>	2018	The incorporation of herbal medicines in wound care: an integrative review.
05	Lima et al. <sup>19</sup>	2018	Treatment of metacarpal skin lesion after tenorrhaphy with the help of <i>Brassica oleracea capitata</i> and ozonized sunflower oil.
06	Gonçalves, Rodrigues and Carvalho <sup>20</sup>	2018	Alternative treatment for psoriasis: a case report
07	Martelli, Andrade and Santos <sup>21</sup>	2018	Perspectives on the use of herbal medicines in tissue healing: a systematic review
08	Pinheiro and Nascimento <sup>22</sup>	2019	The action of <i>aloe vera</i> on tissue repair in humans: a systematic review
09	Costa, Souza and Silveira <sup>23</sup>	2019	Quality of herbal medicines produced in the school pharmacy: <i>confrei</i> ointment
10	Pinto, Cavalcante and Lima <sup>4</sup>	2020	The phytotherapy in skin treatment: a bibliographic study
11	Oliveira et al. <sup>25</sup>	2020	Macroscopic evaluation of skin wound healing treated with pequizeiro ( <i>caryocar brasiliense</i> ) leaf extract
12	Goulart, Silva and Müller <sup>26</sup>	2020	Medicinal plants used to treat rosacea
13	Nascimento, Jesus and Alvim <sup>27</sup>	2021	Use of tannins from barbatimão for wound healing.
14	Junior and Gonzalez <sup>28</sup>	2021	Use of phytotherapy to combat skin aging
15	Ribeiro et al. <sup>29</sup>	2020	Effect of <i>Passiflora edulis</i> leaf extract on skin healing in rats
16	Costa et al. <sup>30</sup>	2021	Prophylactic Chamomile-based Refreshing Compress for Radiation Therapy Patients
17	Cunha et al. <sup>31</sup>	2021	Melanoma and non-melanoma cancer: potential benefits of herbal medicine in the treatment of oncological dermatological lesions
18	Paz et al. <sup>32</sup>	2021	The use of <i>melaleuca</i> essential oil in the treatment of acne
19	Lima and Nogueira <sup>33</sup>	2021	The Use of <i>Aloe Verapara</i> for the Treatment of Hemorrhoids and Other Skin Wounds
20	Cubas and Ribas <sup>34</sup>	2021	Alternative herbal medicine for acne treatment
21	Farias et al. <sup>35</sup>	2022	Therapeutic property of the essential oil of <i>Melaleuca alternifolia</i> applied to the treatment of the injury

The use of phytotherapy in health restoration has advanced over the years, from the easiest ways of local treatments, possibly used from generation to generation, to the current ones. The use of plants for curative purposes has ricocheted in Brazil, as ethnobotanical works present themselves as innovative and extensive.<sup>36</sup> The proper use of plants for medicinal purposes by the general population requires knowledge of the use of medicinal plants chosen for their therapeutic efficacy and safety, grounded in popular tradition, or scientifically confirmed as medicinal. However, it is

essential to know the proper way to store plants to avoid their contamination by fungi, pests, and insects, and improper storage means harm to health.

As a result, 50 medicinal plants (Table 2) used in dermatological phytotherapy were mentioned in the analyzed articles, and the most commonly mentioned were: babosa (*Aloe vera L.*), arnica (*Arnica acaulis L.*), barbatimão (*Stryphnodendron astringens* (Mart.) Coville), confrei (*Symphytum officinale L.*), calendula (*Calendula arvensis L.*) and melaleuca (*Melaleuca alternifolia L.*). The most used parts were leaves and bark, and infusion (tea) was the most used preparation method. Most of the plants mentioned in the articles already have proven healing powers in scientific literature, thus improving the quality of life of those who use them (Table 2):

**Table 2.** Distribution of medicinal plants used in skin treatment, partly used and form of preparation.

Order	Popular Name	Scientific Name	Used part	Form of use
01	Arnica	<i>Arnica montana L.</i>	Flower/rhizome	Infusion / poultice
02	Aroeira do campo	<i>Myracrodruon urundeuva L.</i>	Barks	Tea
03	Red Aroeira	<i>Schinus terebinthifolius Raddi</i>	Sheets	Extract
04	Avocado	<i>Persea Americana</i>	Fruit	Oil
05	Artemisia	<i>Artemisia vulgaris L.</i>	Sheets	Infusion
06	Aloe Vera	<i>Aloe vera L.</i>	Parenchyma	Gel extraction
07	Barbatimão	<i>Stryphnodendron L.</i>	Bark	Decoction
08	Burdock	<i>Arctium lappa L.</i>	Root	Infusion
09	Baru	<i>Dipteryx alata Vogel</i>	Bark	Extract
10	Purging Potatoes	<i>Ipomea poerculata L.</i>	Tuber	Extract
11	Boldo	<i>Plectranthus barbatus L.</i>	Sheets	Infusion
12	Cashew Tree	<i>Anacardium occidentale L.</i>	Sheets	Infusion
13	Banana peel	<i>Musa</i>	Bark	Maceration
14	Marigold	<i>Calendula officinalis L.</i>	Flowers	Distillation
15	Leather hat	<i>Echinodorus grandiflorus L.</i>	Sheets	Infusion
16	Cinnamon	<i>Melia azedarach L.</i>	Fruits/leaves	Infusion
17	Garlic liana	<i>Adenixolyma alliaceum L.</i>	Sheets	Infusion
18	Cipósuma	<i>Anchienta salutaris L.</i>	Root	Extract
19	Confrei	<i>Symphytum officinale L.</i>	Leaves and flowers	Infusion/decoction
20	Copaiba	<i>Copaifera multijuga L.</i>	Barks	Oil
21	Cravo	<i>Dianthus caryophyllu L.</i>	Floral Buttons	Distillation
22	Clove of the vulture	<i>Heliotropium Indicum L.</i>	Sheets	Juice
23	Cumarú	<i>Dipteryx odorata</i>	Bark	Tea
24	Slum	<i>Cnidosculus phyllacanthus</i>	Root and Bark	Tea
25	Thick-leaf mint	<i>Plectranthus amboinicus</i>	Sheets	Infusion
26	Ipê Roxo	<i>Tabebuia avellanadae</i>	Bark	Tea
27	Jambolan	<i>Syzygium jambolanum L.</i>	Sheets	Infusion

28	Jatoba	<i>Hymenaea courbaril L.</i>	Leaves/shells	Tea/infusion
29	Juá	<i>Zizyphus joazeiro</i>	Bark, Fruit, and Leaves	Decoction, infusion, fluid extract, and tincture
30	Jurema Preta	<i>Mimosa acutistipula</i>	Bark	Dye
31	Macaé	<i>Leonurus sibiricus L</i>	Flowers/leaves	Tea
32	Malaleuca	<i>Melaleuca alternifolia L</i>	Sheets	Infusion
33	Passion Fruit	<i>Passiflora edulis</i>	Sheet	Extract
34	St. Caetano Melon	<i>Momordica charantia L</i>	Sheets	Cooking
35	Melissa	<i>Melissa officinalis L.</i>	Sheets	Infusion
36	Pequizeiro	<i>caryocar brasiliense</i>	Sheets	Extract
37	Prickly Pear	<i>Bidens alba L.</i>	The whole plant	Infusion/decoction
38	Quina-Quina	<i>Coutarea hexandra</i>	Bark/leaves	Tea
39	Quixabeira	<i>Sideroxylon obtusifolium</i>	Root and Bark	Tea, tincture, and bottle
40	Foxtail	<i>Conyza bonariensis (L.)</i>	Sheets	Cooking
41	Cabbage	<i>Brassica oleracea capitata</i>	Sheets	Maceration
42	Pomegranate	<i>Punica Granatum</i>	Bark, Seed	Tea and tincture
43	Salsa from the beach	<i>Ipomoea asarifolia</i>	Sheets	Cooking
44	Parsley	<i>Petroselinum sativum L</i>	Sheets	Cooking
45	Sucuuba	<i>Himatanthus drasticus L.</i>	Bark/leaves	Latex/tea
46	Broom	<i>Scoparia dulcis L.</i>	Sheets	Cooking
47	Button broom	<i>Borreria verticillata L.</i>	Sheets	Cooking
48	Cow's Claw	<i>Bauhinia purpurea L.</i>	Sheets	Tea
49	Guaçatonga	<i>Casearia sylvestris Sw</i>	Leaves, root	Teas, poultice
50	Uvarana	<i>Cordyline dracaenoides Kunth,</i>	Leaves, root	Extract

Regarding the properties of medicinal plants in dermatological treatment, they were used in several pathologies such as psoriasis, acne, genital herpes, rosacea, dermatological oncology, wounds, burns, and have substances that act as antineoplastic, antimicrobial, anti-inflammatory, and immunomodulatory.

Thus, although the abundance of publications found, it is noteworthy that Brazil has been advancing its arsenal (scientific) about medicinal plants used by the population. It was verified that some programs and policies encourage the inclusion of phytotherapy in SUS, demonstrating the search for the adoption of humanized and integral care.

Brazil has one of the largest diversified forest reserves in the world. Most of these species used for medicinal purposes are used with little or no knowledge of their pharmacological aspects. It is important to remember that the use of medicinal plants is not only in rural areas or in regions

lacking medical and pharmaceutical assistance. They are also commonly used in urban areas, as an alternative or supplement to allopathic medicines.<sup>37</sup> The effort to discover new medicines has led researchers in various fields to search the Brazilian flora for plant species with medicinal properties that are used by the population.<sup>37</sup>

Based on the above, medicinal plants become alternatives of great relevance for the skin treatment process. They begin to be part of the Brazilian health care, considering that their use must be validated by studies that affirm their healing potential, suggesting new studies of clinical proof, costs, and benefits, and the constant updating about the publications made.

The high costs of treatments for changes associated with scar deficiency raise the importance of research that looks for substances that can relate to the injured tissue, aiming to accelerate the process.

### **3. CLOSING REMARKS**

Given the above, this work supports the hypothesis that medicinal plants are part of the therapeutic mix of folk medicine, as an alternative treatment for skin therapy. The data shown restores traditional, botanical knowledge. However, the medicinal plants exposed here may contain substances that act on the appearance of toxicity or allergic reaction with their misuse, which assumes that these active ingredients although they are "natural" can cause implications and adverse reactions if it is not indicated in the correct way of preparation.

The dermatological use of medicinal plants contributes expressively to efficient response in controlling pain and odor and healing. Phytotherapy is an Integrative and Complementary Practice of low cost, has few side effects, and provides significant benefits that prove its great potential for alternative use in the adjuvant treatment of dermatological lesions, contributing to better quality and therapeutic response.

#### **NOTE:**

The study highlights the efficacy of "herbal medicine" which is an ancient tradition, used in some parts of India. This ancient concept should be carefully evaluated in the light of modern medical science and can be utilized partially if found suitable.

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