



## Review on Vitiligo and its Herbal Remedies

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### ABSTRACT

Vitiligo is a depigmentation disorder with complex causes. Nonetheless, recent progress has been made to unravel the pathophysiology of Vitiligo. In this review, we provide an overview of the currently known herbal medicine for Vitiligo treatment and also highlighted the herbs that have been used in clinical trials. In view of traditional uses, herbs such as *Azadirachta indica* J. Juss, *Curcuma longa* Linn, *Sesamum indicum* L., *Nigella sativa* L. have been highlighted. Enormous efforts in Vitiligo drug discovery are currently needed.

An overview of unconventional therapies for Vitiligo is presented. Some herbal compounds may be considered as valid therapeutic tools for the treatment of Vitiligo. This may help to reduce the symptoms and also prevent further spread of the condition.

The reviews also useful in research for the purpose of find an appropriate formulation given better result.

**Keywords:** Vitiligo, herbs, depigmentation, treatment, research, symptoms.

### 1. Introduction

Vitiligo is similar to the skin condition “Leucoderma” –Vitiligo is a skin disorder/disease in which patches of skin tend to lose its color [1]. Vitiligo is called as the de-pigmentation of the skin color which is caused by the localization or complete destruction of melanocytes cell in the body [2]. The characteristic formation of white patches (de-pigmentation) on the skin remains closely related to each other unlike the patch’s buildup in Vitiligo [3]. Vitiligo is primarily known by the formation of white patches which could be local or small areas in the beginning [4]. But, as the time passes, the skin patches might get bigger in size. Majority of the most skin changes might become noticeable at the age of 10 years to 30 years [5]. Skin color changes are more likely to be noticeable in person with darker skin tones [6]. Vitiligo is the name given to the white patches or de-pigmentation of the skin [7]. The white patches are due to the partial or complete loss of the pigmentation of skin [8]. Vitiligo turns out to be one of the rare conditions [9]. Vitiligo may start as small patches in the skin [10]. After some time, these enlarge and combine with other patches over several period of time [11]. Although they can appear in any part of the body, the primary patches are usually on the forearms, feet, face and hands [12]. The larger patches generally stay in one place, while the smaller patches shift place and change with time. The area affected by the condition varies from person to person [13].

#### 1.1 Causes of Vitiligo

There could be many reasons for the formation of white patches of Vitiligo [14]. Right from genetically condition to the several auto-immune disorders including Thyroid illness and others, there could be various reasons of Vitiligo [15]. Some of the major common causes of Vitiligo might include traumatic incidents including thermal burns, accidental cuts, Eczema, Psoriasis, and ulcers resulting in development of the white patches [16].

Vitiligo could be caused by congenital abnormalities including Waardenburg syndrome, Tuberous sclerosis, Piebaldism and partial albinism [17]. The condition could also be the result of some immunological condition like Vitiligo, Halo mole, Melanoma-associated vitiligo or Vitiligo [18]. Certain medications like Intra-lesion steroid injections, EGFR inhibitors, and others could also cause Vitiligo [19]. When the body/skin is exposed to certain chemicals like butyl phenol, then also **Vitiligo symptoms and causes** could be triggered [20]. Determining the precise etiology of each case of vitiligo is a challenging task, a few of the reasons that have been identified include:

- Immunological conditions
- Inherited or genetic elements
- Resulting from neurogenic (neurogenic) nerve ending malfunction

- Melanocytes that are ill with cell death machinery self-destruct
- Traumatic events, such as burns and cut

### 1.2 Symptoms of Vitiligo

As far as the symptoms of the Vitiligo is concerned, the main symptom is associated with the development of white patches on the skin –most commonly in the areas that are usually exposed to sunlight including arms, hands, lips, face, and others [23].

- Pigment loss, particularly in sun-exposed areas
- The spread of white areas following damage
- Scratchy feeling over white areas after perspiring or being in the sun
- Alteration in eye color
- Grey hair
- Extending noticeable areas of grey hair

### 1.3 Types of Vitiligo

**Non-segmental vitiligo** - This is the most prevalent kind, according for nearly 90% of cases. Usually, the illness manifests as patches that symmetrically emerge on both sides of the body. There are other categories for this type of vitiligo [24]:

**Generalized** - Anywhere over the body, there are white areas [25].

**Acrofacial vitiligo** - causes the color to disappear from the lips, fingers, and areas close to the mouth, nose, and upper lids [26].

**Focal vitiligo** - is typically prevalent in children and localized [27].

**Mucosal vitiligo** - only affects mucous membranes [28].

**Segmental vitiligo** - Only one side of the body is affected by this type of vitiligo. About 10% of instance are of this type, while 90% of cases are of non-segmental. Both the look and the course of treatment differ from the non-segmental from [29].



### 1.4 Diagnosis of Vitiligo

If the doctor suspects some symptoms related to Vitiligo, then the doctor might inquire about your medical history [31]. The doctor might also conduct a thorough examination based on some other related skin disorders including psoriasis or dermatitis [32]. The physician might also make use of a special lamp for shining the ultraviolet light into the skin for determining whether or not you have Vitiligo [33]. The doctor might ask for a skin biopsy and blood test towards diagnosing Vitiligo [34]. Once the **Vitiligo symptoms and causes** have been determined, the doctor might recommend the necessary treatments or remedies [35]. Your physician can see changes in your skin through observation. Your skin may also be examined under UV lamp known as a Wood's lamp, which aids the physician in differentiating vitiligo from other illnesses. Vitiligo symptoms can also be found in other illnesses such as chemical leukoderma, albinism, pityriasis alba or yeast infection [36]

### 1.5 Treatment of Vitiligo

Although there is no permanent cure for vitiligo, the goal of treatment is to achieve cosmetic continuity of the skin color [38]. Different methods may be used to achieve this result, such as:

- **Camouflage or disguise [37]:**
  - If the majority of the skin is affected, depigmentation may result. To do this, the regular skin is likewise made white.

- Using SPF >30 sunscreens. This lessens the tan in the skin around the affected area, lessening the contrast with it.
- **Light therapy [38]:**
  - Two to three sessions per week are needed for narrow-band UV-B
  - Taking oral medicine and UVA radiation together
  - Excimer lasers can treat small, focused tissues
- **Repigmentation [39]:**
  - Taking corticosteroids
  - Immunomodulators used topically
  - Topical analogs of vitamin D
- **Surgery [40]:**
  - Medical tattooing for micropigmentation, typically used on the lips
  - Skin transplants from a different, undamaged body area

### 1.6 Herbal Drug for Vitiligo

1. Name: Neem [46]

Synonym: Nimtree or Indian lilac

Biological source: Almost all the part of the plant which is used as drug of *Azadirachta indica* J. Juss

Family: Meliaceae

Geological source: India is native of *Azadirachta*. It is also cultivated in Nepal Pakistan Bangladesh and Sri-Lanka.

Chemical constituent: Azadirachtin, Nimbin, Sodium nimbinat, Nimbidin

Therapeutical use: Vitiligo, anti-protozoan, anti-oxidant, anti-tubercular.

2. Name: Turmeric [47]

Synonym: Saffron Indian, haldi (Hindi)

Biological source: Turmeric is the dried rhizome of *Curcuma longa* Linn.

Family: *Zingiberaceae*

Geological source: The plant is a native to southern Asia and is cultivated extensively in temperate regions.

Chemical constituent: curcuminoids (5%), essential oil (6%)

Therapeutical use: Vitiligo, carminative, blood purifier, antiperiodic, spice

3. Name: Sesame [50]

Synonym: Til, benne

Biological source: Seed from the plant species of *Sesamum indicum* L.

Family: *Pedaliaceae*

Geological source: They are found throughout the tropical and subtropical areas in Asia, Africa, and South America

Chemical constituent: Lignans sesamol, sesamin, pinocresinol, and lariciresinol

Therapeutical use: Vitiligo, antioxidant, cholesterol reduction, blood lipid regulation, liver and kidney protection, cardiovascular system protection, anti-inflammatory, anti-tumor.

4. Name: Black cumin [52]



Synonym: Kalonji and charnushka

Biological source: Seed of the plant species *Nigella sativa* L.

Family: *Ranunculaceae*

Geological source: They are found in Southern Europe, North Africa and Southwest Asia and it is cultivated in many countries like Middle Eastern Mediterranean region.

Chemical constituent: Thymoquinone (TQ), thymohydroquinone, arachidonic, eicosadienoic and linoleic

Therapeutical use: Vitiligo, indigestion, loss of appetite, treatment of worms and skin eruptions.



## 2. Review of Literature

**A] Name of Authors:** Radhakrishnan Narayanaswamy and Intan Safinar Ismail

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**Topic of article:** ROLE OF HERBAL MEDICINES IN *VITILIGO* TREATMENT - CURRENT STATUS AND FUTURE PERSPECTIVES

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Vitiligo is a depigmentation disorder with complex causes. Nonetheless, recent progress has been made to unravel the pathophysiology of vitiligo. In this review, we provide an overview of the currently known herbal medicine for vitiligo treatment and also highlighted the herbs that have been used in clinical trials. In view of traditional uses, herbs such as *Ammi visnaga* L., *Angelica sinensis*, *Eclipta alba* L., *Ginkgo biloba*, *Picrorhiza kurroa* Royle Ex Benth, and *Psoralea corylifolia* L, have been highlighted. Enormous efforts in vitiligo drug discovery are currently needed. Interleukin-17 inhibition, tumor necrosis factor-alpha inhibition, heat shock protein-70i (HSP70i) inhibition, keratinocyte turnover modulators, and regulatory T cells (Tregs) modulators have been discussed as promising new targets for vitiligo drug development. Thus, we strongly believe that this review may be useful for rationalize new herbal drug for vitiligo treatment.

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**Topic of article:** Herbal Compounds for the Treatment of Vitiligo: A Review

**Article source:** Open Access Maced J Med Sci.

An overview of unconventional therapies for vitiligo is presented. Some herbal compounds may be considered as valid therapeutic tools for the treatment of vitiligo. Since ancient time, herbal products of different nature and effects had been used for the treatment of vitiligo. The Authors provide a brief overview of the herbal products available for the treatment of the pigmentary disease. Some herbal compounds may be considered as valid therapeutic tools for the treatment of vitiligo. Drugs like Ginkgo biloba, Cucumis melo, Picrorhiza kurroa, Polypodium leucotomos has been discuss in review as they have positive effect on Vitiligo condition.

## 3. Conclusion

Vitiligo disease can be treated by herbal drugs. Some herbal drugs may be considered as valid therapeutic tools for the treatment of Vitiligo. This reduces skin depigmentation and helps achieve better results.

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