

**A REVIEW ON POLYHERBAL ANTIFUNGAL CREAM**

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ABSTRACT

The aim of this work is to formulate and evaluate anti scabies cream, Scabies has been scourged among human beings for thousands of years. It's worldwide occurrence with epidemics during war, famine and overcrowding which is responsible for an estimated 300 million peoples currently infested. It is also greatest impact on children. Scabies refers to various skin infections. Long-term scabies disease can lead to complications such as septicemia, acute post-streptococcus glomerulonephritis, heart disease, and secondary infections. Timely treatment to the affected patients is required to control the disease and get rid of the causative agent. **Method:** The cream formulation was designed by using pongamia pinnata leaves, neem oil, steric acid, potassium hydroxide, sodium carbonate, white soft paraffin, methyl alcohol, glycerin, methyl paraffin and required amount of rose oil or distilled water. The

skin pH, maintained by drop wise addition of try-ethanolamine. The prepared cream was evaluated for physical appearance, pH, skin irritation to observed side effect. It was inferred from the result that cream formulation were good in appearance and homogeneity. The overall result of the research the prepared cream formulation shows significant anti-fungal activity. The antifungal cream is assessed utilizing a variety of chemical and physiological assays. Information on numerous formulation parameters is provided by these tests, the tests' findings were documented. Numerous secondary metabolites were examined, such as phytosterols, alkaloids, glycosides, flavonoids, saponins, tannins, and phenolic substances. The oil phase of the cream base consisted of stearic acid, potassium hydroxide, sodium

carbonate, white soft paraffin and rose oil. The aqueous phase consists of methanol extract of *Pongamia pinnata*, glycerin, distilled water and methylparaben. The characterization of the formulated cream was carried out by standard methods such as homogeneity test, pH test, irretence test and removal test.

KEYWORDS: Cream, Neem oil, *Pongamia pinnata*, Skin layers.

INTRODUCTION

Today's most common problems in the world today are fungal infections of the skin. Forty million people worldwide suffer from fungal infections. Surface level fungal infections of the skin, hair are common and usually difficult to treat. The most common causes of tinea include dermatophytes, *barbae*, *pedis*, *capitis*, *corporis*, and onychomycosis. Two more prevalent superficial cutaneous fungal infections include candidal infections and Pityriasis versicolor. A range of synthetic antifungal medications classified into four primary groups azoles, allylamines, echinocandins, and polyenes are used in clinical settings to treat similar fungal infections. Medication resistance is one problem that has plagued modern medicine despite its progress. However, it is widely known that azole resistance. Third behind bacterial and viral diseases, fungal diseases accounted for a large fraction of all animal and human diseases. Topical antifungals are medications that are used topically to the skin, nails, hair, vaginally, or within the mouth to treat fungal infections. They come in a variety of forms, including tinctures, creams, gels, lotions, nail lacquers, ointments, powders, shampoos, and sprays. It is possible for dermatophytes, yeasts, or molds to produce fungal infections. The approximately forty distinct species of dermatophytes derive their nourishment from keratinized materials, making them the usual culprits behind fungal diseases affecting the skin, scalp, or nails.

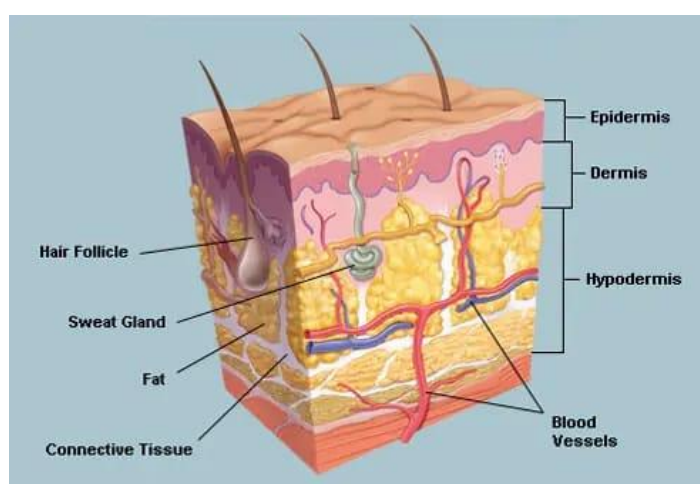
Although yeasts are common skin occupants, occasionally they can proliferate unchecked and cause infections with symptoms. Molds can result in difficult-to-treat nail infections or tinea nigra, which are rare causes of fungal infections that create painless brown or black patches on the skin. Some antifungal medications, including nystatin, are not appropriate for treating dermatophyte fungal infections, however the majority of them treat both yeast and dermatophyte infections.

To find novel lead compounds, plant extracts were screened for secondary metabolites with biologically significant activity. The purpose of this research was to identify specific extracts

that might be helpful in the creation of novel instruments for the management of fungal-related diseases in both humans and plants. Consequently, two plant harmful fungal strains (*Helminthosporium turcicum* and *Alternaria solani*) and two human pathogenic fungi (*Candida albicans* and *Epidermophyton floccusum*) were tested using extracts from the plant species *Pongamia pinnata*.

Cream is a semisolid, externally applied emulsions of the water-in-oil (w/o) or oil-in-water (o/w) type. Oil-in-water and water-in-oil are the two stages that make up cream. The best solution for addressing skin issues is to use cosmetic items. By reducing skin issues, cosmetics are utilized not only to enhance one's appearance but also to promote health. A cream is a topical preparation that is often applied topically to the skin. Additionally, creams for mucus membrane application such as those of the vagina or rectum are utilized. Creams could be categorized as pharmaceutical goods since unmedicated creams are frequently used for a range of skin problems, including dermatoses, and even cosmetic creams are based on methods created by pharmacies. The Fingertip unit idea might be useful in determining the quantity of topical cream needed to cover various locations. Creams are dosage forms that are semisolid and include one or more medication ingredients that have been dissolved or spread in an appropriate base. Historically, this term has been used to describe semisolids with a somewhat fluid viscosity that are prepared as oil-in-water (such as Fluocinolone Acetonide Cream) or water-in-oil (such as Cold Cream) emulsions.

Skin Layers



Skin Layers.

1) Epidermis

The outermost layer of the skin, composed mainly of keratinocytes, which produce the protein keratin.

Layers of the Epidermis

- a. **Stratum Corneum:** The topmost layer, made of dead, flattened keratinocytes that provide a tough, protective barrier.
- b. **Stratum Granulosum:** Where keratinocytes begin to die and form a waterproof barrier.
- c. **Stratum Spinosum:** Provides strength and flexibility to the skin.
- d. **Stratum Basale:** The deepest layer, where new skin cells are produced. It also contains melanocytes, which produce melanin for skin color and UV protection.

2) Dermis

Located beneath the epidermis, the dermis is thicker and composed of connective tissue, blood vessels, nerves, and various appendages.

Components

- a. Collagen and Elastin Fibers: Provide strength, elasticity, and structural support.
- b. Blood Vessels: Supply nutrients and oxygen to the skin and help regulate temperature.
- c. Nerve Endings: Detect sensations like touch, pressure, temperature, and pain.
- d. Sebaceous (Oil) Glands: Produce sebum, which moisturizes and protects the skin.

3) Subcutaneous layer

This layer is composed of loose connective tissue and adipose tissue (fat), providing insulation, energy storage, and cushioning.

Function: Provides insulation, stores energy, and acts as a cushion to protect underlying muscles and organs.

Advantages of Cream

1. Safe for children
2. Relieves for itching
3. Clinically proven
4. Reduce moisture on skin
5. Reduce skin infection

Active Ingredients

1. Pongamia Pinnata



Synonyms: Karanja oil is another name for Pongamia. pinnata seed oil. Some synonyms for karanja oil include Indian beech oil and pongamia oil.

Biological sources: Karanja oil is derived from the seeds of the Pongamia pinnata tree, which is native to India and is now found in many tropical regions around the world.

Chemical constituents

Karanja oil contains several bioactive compounds, including fatty acids, flavonoids, and terpenoids. The most well-known and studied of these compounds are pongamol and karanjin, which have been shown to have antifungal, antibacterial, and insecticidal properties.

Uses: Skin diseases Karanja oil has been used traditionally in Ayurvedic medicine to treat various skin conditions, including eczema, psoriasis, and dermatitis. It is believed to have anti-inflammatory, antifungal, and antibacterial properties that may help alleviate symptoms.

Wound healing: Karanja oil has been traditionally used as a natural remedy for wound healing due to its antibacterial and antifungal properties. It may help promote the healing process and prevent infection.

Hair care: Karanja oil is believed to have conditioning properties that may help improve the overall health and appearance of hair. It is used in some hair care products to help promote healthy hair growth and reduce dandruff.

Pain relief: Karanja oil has been traditionally used as a natural remedy for pain relief due to its anti-inflammatory and analgesic properties. It may be applied topically to alleviate pain associated with arthritis, muscle soreness, and other inflammatory conditions.

Other names of Pongamia Pinnata Linn

- Hindi and Marathi- Karanji
- Urdu- Karanj
- Kannada- Honge
- Tamil- Ponga
- English- Beech
- Oriya- Koranjo
- Assam- Karchuwss

2. Neem Seed Oil



Synonyms: Neem seed oil is derived from the seeds of the neem tree, *Azadirachta indica*. Some synonyms for neem seed oil include margosa oil and neem oil.

Biological sources: Neem seed oil is extracted from the seeds of the neem tree, *Azadirachta indica*. The neem tree is native to India and is also found in other parts of Asia, Africa and India.

Chemical constituents: Neem seed oil is composed of a variety of bioactive compounds including triglycerides, sterols, terpenoids, and fatty acids such as oleic acid, stearic acid, and linoleic acid. It also contains azadirachtin, nimbin, nimbidin, and nimbinin, which are known for their insecticidal and antifungal properties.

Uses: Acne, Neem seed oil can help treat acne due to its antibacterial properties. It can be applied topically to the affected area, or used as an ingredient in face washes and creams.

Eczema: Neem seed oil can be used to relieve the symptoms of eczema such as itching and inflammation. It can be applied topically to the affected area.

Psoriasis: Neem seed oil can help reduce the scaling and itching associated with psoriasis. It can be applied topically to the affected area.

Ringworm: Neem seed oil has antifungal properties that make it effective in treating ringworm. It can be applied topically to the affected area.

3. Coconut oil



Synonyms: Coconut oil is also known as copra oil or coconut palm oil.

Biological sources: Coconut oil is derived from the kernel or meat of mature coconuts harvested from the coconut palm (*Cocos nucifera*). This plant is widely grown in tropical regions around the world, and is an important source of food, oil, and other products.

Chemical constituents: Coconut oil is primarily composed of medium-chain fatty acids, including lauric acid, myristic acid, caprylic acid, and capric acid. It also contains small amounts of polyphenols, phytosterols, and vitamins E and K.

Uses: Coconut oil uses in skin disease Coconut oil has been used for its skin benefits for centuries. It is rich in medium-chain fatty acids, which have antimicrobial and anti-inflammatory properties. Here are some ways in which coconut oil can be used for skin

diseases: Eczema, Coconut oil can help relieve the symptoms of eczema such as itching and inflammation. It can be applied topically to the affected area.

Psoriasis: Coconut oil can help soothe the skin and reduce the redness and scaling associated with psoriasis. It can be applied topically to the affected area.

Acne: Coconut oil can help treat acne due to its antibacterial and anti-inflammatory properties. It can be applied topically to the affected area, but it should be used with caution on acne-prone skin as it can also clog pores.

Dry skin: Coconut oil can help moisturize and nourish dry skin. It can be applied topically to the affected area as a natural moisturizer.

Sunburn: Coconut oil can help soothe sunburned skin and promote healing. It can be applied topically to the affected area. It's important to note that coconut oil may not be suitable for everyone and can cause allergic reactions in some people. It may also clog pores in some individuals, leading to breakouts. Therefore, it's best to patch test coconut oil on a small area of skin before using it regularly

4. Turmeric powder



Synonyms: Turmeric powder is also known as Indian saffron or haldi powder.

Biological sources: Turmeric powder is derived from the root of the turmeric plant (*Curcuma longa*), which is a member of the ginger family. The turmeric plant is native to India and other Southeast Asian countries, and is now cultivated in many tropical regions around the world.

Chemical constituents: The active ingredient in turmeric powder is curcumin, which is a polyphenolic compound that gives turmeric its bright yellow color. Turmeric powder also contains other bioactive compounds, including turmerone, atlantone, zingiberene and Uses: Turmeric powder is widely used as a spice in cooking, especially in Indian and Middle Eastern cuisine. It is also used as a natural food coloring and flavoring agent. In addition, turmeric powder has been used for centuries in traditional medicine to treat a variety of ailments, including digestive disorders, respiratory infections, and skin diseases. More

recently, curcumin has been studied for its potential health benefits, including its anti-inflammatory and antioxidant properties, which may help to reduce the risk of chronic diseases such as cancer, Alzheimer's disease, and heart disease. Turmeric powder is also used in cosmetics. and personal care products due to its antibacterial and anti inflammatory properties.

Chemical Constituents

Most of the Chemical Constituents of the Pongamia Pinnata Plant are present in the seeds of the plant. This oil is also referred to as Pongamol, Hongay oil, and Pongam oil. It also includes both saturated and neutral fatty acids in addition to the oil. There are more polyunsaturated fatty acids, for example. The leaves and stem of the shrub The spores of the plant contain the majority of the chemical components that make up the Pongamia Pinnata plant. Pongone, Pongalbol, Pongagallone A, and Pongagallone B are all present in the oil that makes up 30 to 40% of the Pongamia Pinnata seeds.

***FLAVONOIDS**

Pongamia pinnata is rich in flavonoids, such as quercetin, karanjin, and pongamol. These substances have anti-inflammatory, anti-cancer, and antioxidant effects.

***ALKALOIDS**

Kanjone, kanugin, and pongapin are just a few of the compounds found in Pongamia pinnata. These substances have demonstrated antimicrobial and anti-inflammatory properties.

***FATTY ACID**

Oleic, linoleic, and palmitic acids are among the many fatty acids found in significant concentrations in Pongamia pinnata seeds. These fatty acids are helpful in skin care items because of their moisturising and emollient qualities.

***TANNINS**

Pongamia pinnata includes tannins, which are also known as astringent and antioxidants. They have anti-inflammatory and wound-healing properties and are frequently used in conventional treatment.

***TERPENOIDS**

Terpenoids: Pongamia pinnata includes a number of terpenoids, such as lupeol and betulinic acid. The anti-inflammatory and anti-cancer effects of these substances.

*** STEROIDS**

Sterols: *Pongamia pinnata* includes stigmasterol and -sitosterol among its many sterols. It has been demonstrated that these substances have anti-inflammatory and cholesterol-lowering properties.

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