



# OVERVIEW ON POLYHERBAL ANTIFUNGAL CREAM

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## Abstract

Withania somnifera , Acorus calamus and Piper nigrum extracts are well known by its antifungal activity and its uses in skin diseases. The goal of this study was to develop an effective, long-lasting herbal antifungal cream and examine its physical and antifungal properties. The antifungal cream was prepared by mixing various amounts of ingredients as well as a polyherbal herbal extract. Physical and antifungal properties of the prepared cream were examined. The cream that was produced was proven to be natural, stable, and safe. The Present investigation suggests that this cream is a suitable candidate for further clinical trials.

**Keywords:** Polyherbal Cream; Polyherbal extracts; Ashwangandha; Acorus Calamus; Piper Nigrum; Allium cepa L.

## INTRODUCTION

The term “medicinal plant” include various types of plants used in herbalism ("herbology" or "herbal medicine"). It is the use of plants for medicinal purposes, and the study of such uses. The word “herb” has been derived from the Latin word, “herba” and an old French word “herbe”. Now a days, herb refers to any part of the plant like fruit, seed, stem, bark, flower, leaf, stigma or a root, as well as a non-woody plant. Earlier, the term “herb” was only applied to non-woody plants, including those that come from trees and shrubs. These medicinal plants are also used as food, flavonoid, medicine or perfume and also in certain spiritual activities. Plants have been used for medicinal purposes long before prehistoric period.

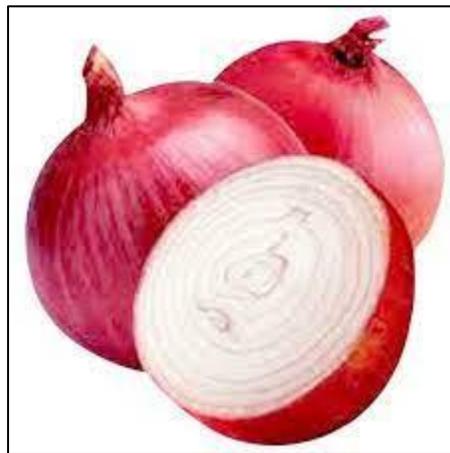
Despite considerable progress in the treatment of skin infection by antifungal agents, search for newer and novel therapeutic drugs and formulations continues. In recent times there has been renewed interest in the herbal remedies as the existing synthetic drugs have several limitations. Medicinal plants are an integral part of human health care system. India is one of twelve leading bio-diversity centers with presence of over

45,000 different plant species. There has been resurgence in uses of herbal medicine in the past few years, not only among the traditional medicinal users but also among the modern consumers of herbal products. Herbal preparation called “Phytopharmaceuticals” or “phytomedicine” are preparation made from different parts of plants. Many countries have included herbal products in their National Health Programs and National Health Schemes as an important alternative for treatment of various ailments. The difference in the mode of usage of these herbal products from past to present can be noticed when we glance at the various standardized and formulated herbal products in the markets. The WHO has also recognized the integrated system of medicine to reach the goal of health for all. Therefore, it now becomes important to validate their traditional herbal medicine as potential therapeutic agents and bring international acceptance. As per the WHO definition of herbal medicines, these are formulations prepared as finished herbal products or mixture herbal products which may contain excipients in addition to the active herbal ingredients. The increasing prevalence of multidrug resistant strains of fungi and the recent appearance of strains with reduced susceptibility to drugs raises the specter of untreatable fungal infections and adds urgency to the search for new infection-fighting strategies. Contrary to the synthetic drugs, antimicrobials of plant origin are not associated with many side effects and have an enormous therapeutic potential to heal many infectious diseases. There are many potential plants with medicinal properties in the repertoire of traditional systems of Indian medicines such as Ayurveda, Unani and Siddha, *Acorus calamus* and *Withania somnifera* are two such plants that have been used traditional for the treatment of skin ailments. Scientific data was observed to be very empiric and hence there is a need for more extensive research on these indigenous plants and development of herbal products using current methodologies and modern techniques.

Herbal Creams are topical preparations usually for application to the skin. They are also applied unto the mucous membranes such as the rectum or vagina . They are semi solid emulsions which are oil-in-water (O/W) or water-in-oil (W/O) type. Creams are often composed of two phases. Oil-in-water (O/W) emulsions are most useful as water washable bases, whereas water-in oil (W/O) emulsions are emollient and cleansing agents. An emulsifying agent is used to disperse the aqueous phases in the oily phase or viceversa.

Anti fungal creams are a generic word for a variety of treatments that contain antifungal drugs and are applied topically to the skin to treat and control fungal infections. A moisture barrier may be included in the formulation to protect and condition the skin. Antifungal creams are used as a palliative treatment for existing fungal infections as well as a preventative approach in circumstances where a fungal infection is a possibility. Antifungals function by taking advantage of distinctions between mammalian and fungal cells to eliminate the fungus without harming the host. Fungi and humans are both eukaryotics, unlike bacteria. At the molecular level, fungal and human cells are therefore identical.

## ONION



Onion (*Allium cepa* L.) contains essential oil that has sulfur compounds called thiosulfinates or isothiocyanates which are known to have antibacterial and antifungal effects. Onion has a long history of medicinal use. The fleshy bulb that grows below the ground is used medicinally as well as for food; other parts of the plant also have a place in traditional medicine. Onion is believed to have a positive effect on the circulatory system and sexual debility. It has been used as a diuretic to reduce swelling. Onion contains thiosulphinate, a compound that is effective in killing many common bacteria, including *Salmonella typhi*, *Pseudomonas aeruginosa*, and *Escherichia coli*. Externally, fresh onion juice is used to prevent bacterial and fungal infections. Effect of raw versus boiled aqueous extract of garlic and onion on platelet aggregation.

Prostaglandins, Leukotrienes and Essential Fatty Acids, it can also be applied to wounds and stings on the skin. Hence, the purpose of this study is to formulate herbal cosmetic cream containing the methanol extract of *Allium cepa* L. bulb and subject it to some quality assessment tests in order to ascertain the suitability of the formulation process.

## ASHWAGANDHA



Fig no. 2 :- ASHWAGANDHA

Ashwagandha (*Withania Somnifera*, WS), belonging to family Solanaceae, is an Ayurvedic herb also known as Indian winter cherry and Indian ginseng that has been traditionally known since ancient times in India for its numerous beneficial health activities. WS is one of the most important herbs in Ayurveda, which has been used for >3000 years in stress management, energy elevation and improving cognitive health and to lower inflammation, blood sugar levels, cortisol, anxiety, and depression. The plant is an erect, grayish, evergreen shrub with long tuberous roots, short stems, ovate and petiolate leaves, and greenish axillary and bisexual flowers. The leaves, roots, stems and flowers bear medicinal values with 29 common metabolites derived from the leaves and root extracts. To date, this medicinal plant has been found to have anti-epileptic, anti-inflammatory, anti-arthritis, anti-depressant, anti-coagulant, anti-oxidant, anti-diabetic, anti-pyretic efficacies along with palliative effects such as analgesic, rejuvenating, regenerating and growth-promoting effects.

### ***ACORUS CALAMUS***



**Fig no. 3 : *Acorus calamus***

*Acorus calamus* (also called sweet flag, sway or muskrat root) is a species of flowering plant with psychoactive chemicals. It is a tall wetland monocot of the family Acoraceae, in the genus *Acorus*. Tamil name is Vashambu. It is cultivated in many countries to satisfy the demand for its essential oil which is used for flavoring and in the perfumery and pharmaceutical industries. In vitro studies indicate that even those plants / plant parts / extracts that have been already evaluated for their antimicrobial efficacy have to be re-evaluated adopting these more precise and advanced assay methods. *Acorus calamus* is a perennial plant with creeping and extensively branched, aromatic rhizome, cylindrical, up to 2.5 cm thick, purplish-brown to light brown externally and white internally. The leaves of *A. calamus* has a single prominent midvein and then on both sides slightly raised secondary veins and many, fine tertiary veins. This makes it clearly distinct from *Acorus americanus*. The leaves are between 0.7 and 1.7 cm wide, with average of 1 cm. The sympodial leaf of *A. calamus* is somewhat shorter than the vegetative leaves. The margin is curlyedged or undulate.

Plants are very rarely flower or set fruit, but when they do, the flowers are 3 to 8 cm long, cylindrical in shape, greenish brown and covered in a multitude of rounded spikes.

## PIPER NIGRUM



**Fig no. 4 :- Piper nigrum**

Pepper nigrum is a flowering vine of the **Piperaceae** family that is cultivated for fruits called peppercorns. It is usually dried and used as a spice or seasoning. The fruit is a drupe (drupe), about 5 mm in diameter (fresh and fully ripe), dark red, and contains stones surrounding one pepper seed. Pepper and the ground pepper derived from it are simply referred to as pepper, more specifically black pepper (cooking and drying immature fruits), peppers (dried immature fruits), or white pepper (seed of ripe fruits). Ground, dried and cooked peppercorn has long been used in both flavor and traditional medicine. Black pepper is the world's most traded spice and one of the most common spices added to cooking around the world. The spiciness is borne by the compound piperine, which is a different kind of spiciness from capsaicin, which is a characteristic of chili peppers. It is ubiquitous in Western countries as a seasoning and is often served in shaker and grinder dining tables in combination with salt.

The word pepper comes from Old English Piper, Latin Piper, and Sanskrit Pipari, meaning "long pepper." In the 16th century, people began to use chili peppers to represent unrelated New World peppers (Capsicum)

### **AIM AND OBJECTIVE:**

The objective of the present study was to develop a novel herbal dermal formulation using onion oil and extracts of *Acorus calamus*, *Withania somnifera* and *Piper nigrum* so as to provide a natural herbal based antifungal activity over the skin. Further the formulation developed should be effective, easy to use, nonirritant and cosmetically acceptable.

## **Plan of Work:**

First the material required for study and experiment was collected from respective sources. Then the required procedures were studied and then the formulation of cream was done by respective procedure. Then the evaluation of formulated cream was done for particular parameters. Then accordingly results were recorded. Then report was prepared on the basis of results.

## **MATERIAL & METHOD:**

The Onions for extraction of onion oil were collected from local market. The Hydroalcoholic extract of Vekhand powder, Ashwagandha powder, and Black pepper powder was taken from local chemist shop. The other excipients like White Bees Wax, Stearic acid, Stearyl alcohol, Cetyl alcohol, Propylene glycol, Triethanolamine, Methyl paraben and Propyl paraben were available in laboratory.

Onion Oil Preparation: Firstly peel the onions, then chop them into small portions. Add them into a blender. Try to blend as small as possible. Blend it without adding any water, blend the onions till it turn into a paste. Now add this paste to coconut oil. Now heat it at low flame for 5 minutes. Let it boil. After getting first boil, reduce the heat. Now simmer it until oil remains. Stir the mixture frequently so that it doesn't get burn. Now we have to filter it and get the oil separate, for that take a cloth and strain the oil through it. Leave it for few hours to cool down

## **CONCLUSION:**

The onion oil, Withania somnifera, Acorus calamus and black pepper extracts traditionally used for their antifungal property used to prepare polyherbal cream formulation. Formulation of cream was done by slab method and further evaluated by various evaluation parameters such as physical properties, PH, Spreadability, Washability, non-irritancy test, viscosity and phase separation of cream and gives good results.

## **FUTURE ASPECTS:**

Fungal skin infections are the major problem of the developing countries. Everyone has faced the discomfort of fungal infection at one time or another. Over the years, many different compounds and formulations have been used for antifungal action. Also most of the prior antifungal formulations include ingredients that are not always eco-friendly and are therefore economically unviable. Some of the prior antifungal formulations also contain components that are ultimately harmful to the skin. The use of natural herbs for manufacture of antifungal products is becoming more popular. Formulated cream need to asses for antifungal activity to validate the traditional claims of the plants which were used.

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