



A Review on Formulation and Evaluation of Polyherbal Soap

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ABSTRACT:-

Bacterial skin infections are most common amongst people, requiring significant attention for treatment and to maintain healthy skin. Some herbal plant extracts have antiseptics and activity. The paper soaps were most frequently used hand wash preparation in this article formulate poly herbal paper soap with combination of Almond and neem and evaluate their parameter. The study showed that the tested paper soaps possessed antimicrobial properties and they can contribute to the treatment and management of skin infections caused by bacteria if well prepared with the appropriate plant materials to target specific causative organisms and packaged with appropriate directions for use and storage. (3) After 3 d the concentrated extract was collected and filtered. *Nyctanthes arbor-tristis* is an old holistic, sacred and traditional medicinal plant belonging to family Oleaceae. (10) The fresh leaves were collected and dried in shade, further powdered by using the mixer. This formed powder was passed through the sieve. The extract was obtained by using a simple maceration process.

Keyword: - Soap formulation, herbal, *Nyctanthes arbor-tristis*

1. Introduction

Soap formulation was solid formulations intended for topical application. The Soap formulations were prepared by using various herbal extracts, herbal oils, and various excipients. (7) Cosmetic products are used for the protection of skin from various endogenous and exogenous harmful agents along with enhancing the beauty and making skin attractive. The only use of cosmetic is not developing an attractive external appearance but also achieving longevity of good health by reducing skin disorders. (15)

1.1 Skin

Skin is very important for all health care professionals to have basic information about the structure and function of human skin. Skin is also called cutaneous membrane. In adults the skin has a surface area ranging from 1.2 to 2.2 m². Skin has two types, hair-bearing skin that covers much of the body and hairless skin as that of palms of hands and soles of feet. [1] Skin is the most exposed part of the body to the sunlight, environmental pollution and also used to some protection against the pathogen.

1.2 Most common skin disease

Most common skin diseases are Eczema, Acne, Rashes, Psoriasis, Allergy, dry skin, urticaria etc. 1.2 Soap Soap is a salt of fatty acid used in a variety of cleansing and lubricating products. Soaps are surfactant usually used for washing and bathing and other types of housekeeping. [2] Soaps are used to remove dirt including dust microorganism, strains bad smells from the body. [3] Commercial soap usually are made up of toxic mercury aluminium, barium, bis-phenol, plastics and other chemicals, which are absorbed into the body via internal organs from vaporization of the chemicals as well as skin absorption with negative side effects. [4]

1.3 Herbal soap

Herbal soap preparation is a medicine it contain antibacterial, anti-ageing anti-oxidant, anti-septic properties which mainly uses of part of plant like seeds, rhizomes, nuts and pulps to treatment for an injury or disease or to achieve health. [5] Herbal soap do not contain the artificial colours, flavours, fluorides etc., when compared to the content of commercial soap. [6] Herbs are the natural products mostly found in the treatment of almost all diseases and skin problems owing to their high medicinal value, cost effective ness, availability and compatibility. [7]

The cosmetics which are meant for skin care nourishes the health, texture and moisturizes the skin Polyherbal Soap is a solid formulation intended for topical application. The cream formulation is prepared by using various herbal extracts, almond oil and various excipients.

Nyctanthes arbor-tristis was the oldest holistic, sacred and traditional medicinal plant belongs to family Oleaceae. The plant was mentioned in Vishnu Purana and having great importance to treat varieties of diseases, especially rheumatoid arthritis it reduces pain and inflammation. The fresh leaves are collected and complete shade drying, further powdered by using the mixer. This formed powder was passed through the sieve.(21)

The extract was obtained by using a simple maceration process. Maceration was extractive technique and carried out at room temperature. Glycerin, commonly known as Glycerin, has been used extensively since the olden times for its beauty-enhancing benefits.(6) It mainly acts as a tonic for the skin as it helps to clean and moisturize it. The secondary metabolites which are present in the plants taken will support the strength, texture and integrity to skin along with the moisturizing of skin and maintaining its elasticity.(1) Thus, the presence of herbal ingredients in skincare formulation helps reduce the production of free radicals in the skin and maintain for a long time. Active ingredients delay skin aging by reducing the wrinkles, protect against UV radiation by antioxidant property.

Collection of plants material :-

Neem and Parijatka were collected from local botanical garden. Irrespective of the type of crude drug and area of collection, there cannot be two opinions that drug are collected suitably when they contain maximum concentration of active ingredients.(17)

Benefits of Neem :-



Fig no:-1 Neem (Azadirachta indica)



Fig no:-2 Parijatka

As a Face-Pack: Grind the neem leaves into a powder and make a mixture by adding some gulab jal into a paste like consistency. Apply this paste all over the face till it dries and then remove the pack with cool water. Using it daily for a week bestows one with a glowing, crystal clear complexion.(4)

As a Scrub: Grind the neem leaves and orange peel into a coarse powder. Add some milk, a tsp of lemon juice and a few drops of honey and make a paste of it. Apply this on the face and gently scrub in circular motions for 15 minutes. Doing it on alternative days hold high significance in removing wrinkles and pigmentation and offers a rejuvenated skin within a fortnight.(22)

For Treating Acne/ Pimples: Take a small amount of aloe vera gel, add a drop of neem oil to it. Apply on the acne and pimple affected areas and keep it overnight. Follow this ritual twice a day to get rid of skin problems

Benefits Parijatka :-

Relieves Pain And Inflammation



Parijatka intrinsically possesses potent analgesic and anti-inflammatory properties, which is pivotal in reducing joint and muscle pain, thereby reducing the chances of chronic autoimmune inflammatory diseases like rheumatoid arthritis which occurs due to the vitiation of Vata Doshas.(16) Being a natural vasodilator, it is also used to treat painful muscle spasms, sore muscles, sciatica etc.




Grind 6 to 7 leaves of Night Jasmine and mix in water and boil it till the quantity is reduced to half. Now cool it and drink this concoction on an empty stomach in the morning to reduce joint pain.(11)

Heals Wounds And Infections

Parijat portrays strong anti-bacterial, anti-viral and antifungal properties that are not only used for removing bacteria and germs from the body but also treats wounds and improves healing. (23)

MATERIAL AND METHODS

Sr. No.	Ingredients	Chemical Constituents	Process of Extraction/ Collection of Raw Material	Image
1.	Almond Oil	Almonds contain lipids (around 50%), proteins (around 25%) and carbohydrates (around 20%) and have a low moisture content and diverse minor bioactive compounds.	Hamdard Roghan Badam Shirin Sweet Almond Oil®, 100 g	
2.	Parijatka Extract	The leaves and seeds contain iridoid glycosides. The other constituents reported from the leaves are mannitol, beta-amyrin, betasitosterol, hentriacontane, benzoic acid, astragalol, nicotiflorin, oleanolic acid, nyctanthic acid friedelin and lupeol.	Maceration: It is an extractive technique and carried out at room temperature. Powdered herbal leaves of <i>Nyctanthes arbor-tristis</i> is further immersed in alcohol and continuous shaking by using mechanical shaker. After 3 days the concentrated extract was collected and filtered.	

3.	Neem leaves Extract	The chemical constituents are found in the leaves of neem as nimbin, nimbanene, 6- desacetyl nimbinene, nimbandiol, nimbolide, ascorbic acid, n- hexacosanol and amino acid, 7-desacetyl-7- benzoyl azadiradione, 7-desacetyl-7- benzoylgedunin, 17- hydroxy azadiradione and nimbiol.	Extraction: Neem leaves were collected from Local Area. Further the leaves were shade dried for 4 days and size reduced using mixer grinder converted into coarse powder and passed through sieve number 22. The extraction was carried out for 3 hrs taking 100gms of plant material with 500 ml of ethanol.	
4.	Rose Essence	Rose oil (rose otto, attar of rose, attar of roses, or rose essence) is the essential oil extracted from the petals of various types of rose. Rose ottos are extracted through steam distillation. being used more commonly in perfumery..	Fortune chana besan	
5.	Soap Base	The soap base available at Soap Making Resource is 100% all natural and is, SLS free, detergent free, paraben free, alcohol free and cruelty free. It's the best stuff on the marke.	It was purchased from Hathkar Hand puure natural Product pvt Ltd.	

Method for preparation of Polyherbal Soap

1. Add the required quantity of roase essences in sufficient amount of soap base and prepare a solution by heating on water bath.
2. In the above solution, add required quantity of night jasmine, neem extract . [Solution 1]
3. Weigh accurately almond oil and add into Soap base contained in a china dish, melt to prepare a proper solution. [Solution 2]

4. Add Solution1 dropwise into Solution2. When both the phases get mixed properly, add in soap mould
5. The formulated Polyherbal soap was kept aside for about an hour in cool and cold place indirect to refrigerator it sets completely and was used after 48 hours after keeping at room temperature for stability and analytical testing.

Sr. No.	Ingredients	Quantity taken	Role
1.	Almond Oil	10mL	Emollient
2.	Night Jasmine extract	1mL	Anti-inflammatory
3.	Neem leaves extract	5mL	Antibacterial
4.	Soap Base	10 gm	Binder
9.	Perfume (Rose water)	q.s.	Fragrance

Table 1: Composition of Polyherbal Cream

Sr. No.	Ingredients	F1HC	F2HC	F3HC
1.	Almond Oil	10ml	7ml	5ml
2.	Night Jasmine extract	1ml	2ml	2.5ml
3.	Neem leaves extract	10ml	8ml	5ml
4.	Soap base	15gm	12gm	10gm
9.	Perfume (Rose water)	q.s.	q.s.	q.s.

Table 2: Formulation Table

Evaluation of Polyherbal Soap

The evaluation of herbal Soap was following.

1. Physical evaluation

Formulated herbal soap was further evaluated by using the following physical parameters: Color, Odour, Consistency, and state of the formulation.

- a) **Colour:** The colour of the Soap was observed by visual examination.
- b) **Odour:** The odour of Soap was found to be characteristics.

2. PH Determination A neem soap measuring 5 g was produced and cut into small pieces and added to 50 mL of distilled water in a volumetric flask (50 mL) to be dissolved in order to obtain 10% (% mass/V) of neem soap solution. The pH of the neem soap solution was measured by using a pH meter

Sr. No.	Formulation	pH
1.	F1C	7.00
2.	F2C	7.1
3.	F3C	7.9

3. Foam forming ability: For the determination of the Poly herbal soap for its ability to form foam about 1.0 gm of soap was taken and was dissolved in distilled water (about 50ml) in a 100 ml graduated measuring cylinder. It the measuring cylinder was then shaken for about 2- 3 minutes and it was allowed to stand for about 10 min. Foam height was measured after 10 minutes. Record the observation for three consecutive experiment and the mean was taken

4. Antimicrobial testing:- the given sample: The given sample of the soap was tested for its antimicrobial properties. By bore diffusion method. The micro-organism used were E. coli. In this method soap solution was prepared by dissolving 1 g of soap in distilled water.(18) Various concentrations were produced such as 5, 10, 20, 50 mg/mL, the antibiotic used is Ciprofloxacin -5µg. The plates were then kept for incubation for about 24 hours at a temperature of 37 °C. Calculated it

4.Non-irritancy test

Herbal Soap formulation was evaluated for the non-irritancy test. Observation of the sites was done for 24 h. Mark the area (1 cm sq.) on the left hand dorsal surface. Then the Soap was applied to the area and the time noted. After interval up to 24 hr. it is checked for irritant effect, erythema and edema if any than

Sr. No.	Formulation	Irritant Effect	Erythema	Edema
1.	F1C	NIL	NIL	NIL
2.	F2C	NIL	NIL	NIL
3.	F3C	NIL	NIL	NIL

Table 4: Irritancy test



RESULT: -

Sr. No.	Evaluation	Result
1.	Physical Evaluation Colour Odour Consistency State pH	Faint Green Pleasant Solid Smooth 7
2	Non-Irritancy Test	Non-Irritant

Table 5: Result

DISCUSSION : -

The present research mainly focused on the formulation and evaluation of polyherbal soap using various evaluation parameters. hence this formulation was easily washed with normal water after application. The prepared formulation had a good spread ability. (26)

Viscosity and pH of the soap was in range. The polyherbal soap was non-greasy in nature and easily removable after application. The formulation was non-irritant and is not harmful to the skin.

CONCLUSION : -

The incorporated herbs such as the dried leaves of *Azadirachta indica* and dried leaves of *Nyctanthes arbor-tristis* have antibacterial, anti-inflammatory analgesic activity. Formulation of polyherbal soap was done by Fusion method and further evaluated by various evaluation parameters such as physical properties, pH, non-irritancy test, of soap gave quite good results.

The present experimental study showed that it is possible to develop and evaluate polyherbal soap with herbal extract for anti- microbial activity.(5,4)

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