

Formulation of Herbal Cream from Plant Extract of *Fernando adenophylla*

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Research Article

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ABSTRACT

Herbal cosmetics are the products used for the not even beautifying the skin but also have health benefits. It lies in new category of products which occupy the space between cosmetics and pharmaceuticals contain biologically active ingredients that impersonates to medical or drug like benefits. Currently, skin care industry formed plants based cosmeceuticals because they are safe, free from side effects and eco-friendly in nature. Creams are the one of the cosmeceuticals enhancing the beauty of skin and provide the glamour touch. In the current work an attempt has made to prepare the o/w cream using bee wax, rose water, sodium benzoate, *Fernando Adenophylla* extract, jasmine and coconut oil and colouring agent raw turmeric extract and evaluated for their pH, spread ability, skin irritation test and various organoleptic properties.

Keyword: Cosmceuticals; O/W cream; *Fernando adenophylla*; Herbal preparation

INTRODUCTION

The availability of herbal cosmetics is primarily driving up demand for cosmetics. The public is paying more attention to herbal formulations due of their superior qualities, lack of side effects and also provide immunity from

COVID [1,2]. Additionally, it gives the skin the essential nutrients and hydration that it needs. The herbal cream is just an emulsion of water and oil. Now-a-days herbal extracts are used in the cosmetic preparations for augmenting beauty and attractiveness. Herbal cosmetics are classified on the basis of dosage form like cream, powder, soaps, solutions, etc. and according to part or organ of the body to be applied for like; cosmetics for skin, hair, nail, teeth and mouth etc [3,4]. Creams are semisolid emulsions intended for application to the skin or mucous membrane. A low fat moisturizer that disappears into the skin is called as a vanishing cream. It softens skin, leaving nothing behind. Vanishing cream are o/w emulsion based preparations containing aqueous phase and oil phase. Depending on the proportion of water to grease, cream can be water miscible and washed away easily or be thick and sticky. It is perhaps the commonest prescribed topical medicament. As it is less oily, messy, and sticky, most patients find it more user-friendly.

Skin is the primary layer of all living things, covering all organs; any damage or alteration in this leads to numerous conditions/diseases such as skin darkening, ageing, and so on; thus, its protection is the primary goal. Chronic exposure to Ultraviolet (UV) radiation may cause skin cancer. There are several ways for humans to protect themselves from ultraviolet radiation, such as huge hats worn by Greeks and umbrellas worn by Chinese and Indians. The ultraviolet region is separated into three regions with wavelengths of 320-400 nm, 290-320 nm, and 200-290 nm, respectively. The Sun Protection Factor (SPF) of sunscreen products is expressed as the UV energy required producing a Minimal Erythema Dose (MED) on protected skin divided by the UV energy required to produce a MED on unprotected skin. A higher SPF value indicates that it is more efficient and provides the best protection against sunburn. Sunscreen products containing natural components, on the other hand, are safer than those containing synthetic ingredients. Medicinal herbs that include antioxidants, phenols, glycosides (aesculin), and other compounds that absorb UV rays are being explored as potential sunscreen supplies. As a result, medicinal plants are a major source of study and provide a new avenue for the discovery of new biologically active chemicals. The study of their structure-function relationship aids in the development of new drugs/formulations to avoid or minimize negative effects.

Antibacterial research has revealed remarkable activity against bacterial and fungal strains. It also demonstrated *E. binata*'s great healing ability against cuts and wounds. Himachal Pradesh residents have utilized this herb to treat a variety of dermatological conditions. Traditionally, *Eulaliopsis binata* plant paste has been used to protect skin from harmful UV radiation, but a lack of valid scientific data in ancient literature prompted us to conduct the current study and determine the SPF value of hydroalcoholic, ethyl acetate, and methanolic leaf extracts of *Eulaliopsis binata* using the transmittance method.

The traditional systems of medicine, evolved over centuries had been responsible for safeguarding healthcare of the world until the advent of allopathic system of medicine. As the latter system used knowledge of modern biology and chemistry, for both discovery and treatment, it found fast acceptability among the users and now it occupies predominant space in the area of health care. Despite this, the contribution of the traditional preparations, which are normally polyherbal, is increasing because of the general impression that these products are safe; while the single-molecule based modern drugs used in allopathic system can have severe adverse effects. *Fernando adenophylla* (*Heterophragma adenophyllum*), commonly known as Dhopa-phali, Ziron, Mostan-phul, Lotum-poh and Karen wood of family Bignoniaceae, has been used traditionally for snakebite (Morigaon district of Assam, India), hemorrhoids and constipation (Chakma tribe, Bangladesh) and skin disorder (Thai traditional medicine) [5,6]. *Fernando adenophylla* has been reported to constitute potent phytochemicals like novel naphthoquinones, their derivatives (dilactone, *adenophylla*, peshwaraquinone, lapachol, and indanone) and triterpenoids (β -sitosterol, β -

amyrin, ursolic acid, and oleanolic acid) which have potential pharmacological activities that have been assessed and reported. The Crude extract of *Fernando adenophylla* has already been tested for pharmacological properties like antimicrobial, antifungal, anti-TB, and antihypertensive and leishmanicidal activities. Since this plant have to extensively explore by the researchers for its potential in the field of drugs and medicinal plants [7,8].

Turmeric (*Curcuma longa*, *Zingiberene*) is best known as a spice used primarily in Asian cuisine, particularly curry and is prepared mustard. It is also used in some traditional Indian communities as a topical burn treatment. The paste of turmeric powder has been used as antiseptic and for skin nourishment. Curcumin the active compound of turmeric, is a polyphenol used in the skin preparations. It contains antioxidants and anti-inflammatory components. These characteristics may provide glow and lustre to the skin. Turmeric may also revive your skin by bringing out its natural glow [9-12].

MATERIALS AND METHODS

Plant material

The leaves of *Fernando adenophylla*, were collected from the local area of Gurugram, Haryana, India.

Preparation of extract

Air dried and coarsely powdered of *Fernando adenophylla* leaves were placed in soxhlet, using ethanol a solvent. The extract was then concentrated to dryness under reduced pressure and controlled temperature, and preserved in refrigerator [13].

Cream formulation

Beeswax and propylene glycol were heated on a water bath, after few minutes oil phase was formed (oil phase). *Fernando adenophylla* extract, distilled water, rose ware, sodium benzoate mixture was heated on a separate beaker on water bath. Oil phase was added into aqueous phase and continuous stirring was done until semisolid mass was formed (Table 1) [11].

Table 1. Formulation of herbal cream and its composition.

S. NO	Ingredients	Quantity
1	Bee wax	10 gm
2	Rose water	10 ml
3	Sodium benzoate	3 gm
4	<i>Fernando adenophylla</i> extract	1 ml
5	Perfume/jasmine and coconut oil	2-6 drops
6	Colouring agent raw turmeric extract	2-6 drops

Evaluation of herbal cream

Physical evaluation: A formulated herbal cream was further evaluated by using the following physical parameters, colour, odour, consistency and state of the formulation.

Colour: The colour of the cream was has been observed by visual examination.

Odour: The odour of cream was has been found to be characteristics.

State: The state was cream was has been examined visually. The cream was solid in state.

Consistency: The formulation was has been examined by rubbing cream on hand manually. The cream having smooth consistency.

pH: of prepared herbal cream was measured by using digital pH meter. The solution of cream was prepared by using 100 ml of Distilled water and set a side 2hr. pH was determined in three times for solution and the average value was calculated.

Spreadability: Spread ability of formulated cream was measured by placing sample in between two slides then compressed to uniform thickness by placing a definite weight for defined time. The specified time required to separate the two slides was measured as spreadability. Lesser the time taken for separation of two slides results showed better spreadability.

Wash ability: Formulation was applied on the skin and then ease extends of washing with water was has been checked.

Non-irritancy test: Herbal cream formulation was has been evaluated for the non-irritancy test. Preparation shows no irritancy. Observation of the state was done for 24 hr to 28 hr.

RESULTS AND DISCUSSION

In the current study we prepared herbal cream with the extracts *Fernando Adenophylla* extract, along with jasmine oil and coloring agent raw turmeric extract ingredients in different proportions and evaluated for their pH, spread ability, skin irritation test and various organoleptic. The natural o/w cream is made using naturally occurring base, oils, extract, colour and flavouring agents. Skin irritation test and various organoleptic properties and their results showed that pH was 6.14 and there is no skin allegory has been reported (Table 2). However the test of spread ability was found to be good and uniform without any fragmentation and deformation. The product also showed no sign of formation crystals on surfaces or contamination by moulds fungi etc.

Table 2. The parameters used for herbal cream and its results.

S.NO	Parameters	Results
1	Colour	Vivid yellow
2	Odour	Characteristic
3	State	Semisolid
4	Consistency	Smooth
5	pH	6.14
6	Wash ability	Easy washable

7	Non-irritancy test	Non-irritant
8	Phase separation	No phase separation
9	After feel	Emollient

CONCLUSION

Due to tremendous demands of beauty enhancing products cosmetics industry is flourishing. This work has studied all aspects of natural cream including natural ingredients, formulation methods, evaluation and its applications. The formulation stored at room temperature and refrigerator showed same stability behaviour. The organoleptic characteristics were stable and spread ability was found to be "Good". Storage under these conditions was considered to be adequate, because the product functionality was maintained. From the current studies it was predicted that the formulation will remain stable.

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CONFLICT OF INTEREST

We authors declare that we have no conflict of interest.

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