

Formulation and Evaluation of Polyherbal Face Cream

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Abstract: Herbal medicinal products are most preferable and safer with very less side effects than the synthetic products. Now a days there is a increasing in demand of herbal formulations in the world pharmaceutical market. The main objective of this work is to formulate and evaluate a cosmetic preparation polyherbal face cream made from herbal ingredients. In that aloe vera powder, hibiscus powder, senna powder were procured from the local market in the form of dried powder. extraction of dried crude herbal ingredients were done by the maceration process. After extracting the polyherbal face cream is prepared and evaluated for its various characteristics. Herbal face creams are used to moisturizing, cleansing, protecting skin from damaging Uv rays, improving skin tone and beautifying skin. Due to anti-bacterial and anti-inflammatory activity of herbs used in the formulation helps to overcomes various problems related to the skin. Thus, in the present work, we founds good quality of herbal face cream, with their beneficial effects.

Keywords: Face Cream, Cosmetics, Polyherbal, Evaluation.

I. INTRODUCTION

Creams are defined as “viscus liquid or semisolid emulsions of either the oil-in water or water-in oil type.”The consistency of this dosage forms is varies by oil and water. Creams can be herbal, ayurvedic, or allopathic which can be use by the peoples according to their needs. Also, creams are used for many purposes such as protective, cleansing, improving appearance, beautifying, or for therapeutic activity. Mainly topical formulations are use for the delivery of drug into the underlying skin layer or mucous membrane of the skin, for the better delivery of drug at the specific site of action to treat various skin disorders. Unmedicated and medicated creams are mostly used for the treatment of various skin conditions and dermatoses. cream contains one or more drug substances dispersed or dissolve in a suitable base. Creams may be classified in two types on the basis of phases that are: o/w or w/o type of emulsion.”Creams”are the semisolid dosage form formulated as either water-in-oil(e.g-cold cream) or oil-in-water(e.g-vanishing cream).

Functions of Skin

1. **Protection:** An anatomical barrier from pathogens and damage between the internal and external environment in bodily defence, Langerhans cells in the skin are part of the adaptive immune system.
2. **Sensation:** It involves senses of heat and cold, touch, pressure, vibration, and tissue injury, see somato sensory system and haptics.
3. **Heat Regulation:** The skin contains a blood supply far greater than its requirements which allows precise control of energy loss by radiation, convection and conduction. Dilated blood vessels increase perfusion and heat loss, while constricted vessels greatly reduce cutaneous blood flow and conserve heat.
4. **Control of Evaporation:** The skin provides a relatively dry and semi – impermeable barrier to fluid loss. Loss of this function contributes to the massive fluid loss in the burns.
5. **Storage and Synthesis:** Act as a storage centre for water and lipids, as well as the means of synthesis of vitamin D by action of UV on many parts of the skin.
6. **Water Resistance:** The skin act as a water resistance barrier so essential nutrients are not washed out of the body.

II. MATERIAL AND METHODS

2.1 Plant Profile

Plant Extract	Aloe Vera	Hibiscus	Senna
			
Synonym	Aloe ferox, Cape aloe	Mahoe, Shoeblack plant, Mahagua	Alexandrian senna, Sonamukhi
Active constituents	Vit, minerals, enzymes, Sugars, lignin, saponins Amino acids, 98% water	Anthocyanins, polyphenols Flavonoids, 15-30% plant acid e.g. citric, malic acid	Glycosides, sennosides C and D Monoanthrones, Dianthrones
uses	Anti – inflammatory Moisturizes the skin, heals burns	Anti – bacterial, glowing skin, cleansing pores.	Nourishes skin cells, laxatives and carminative.

Table 1: Ingredient Table

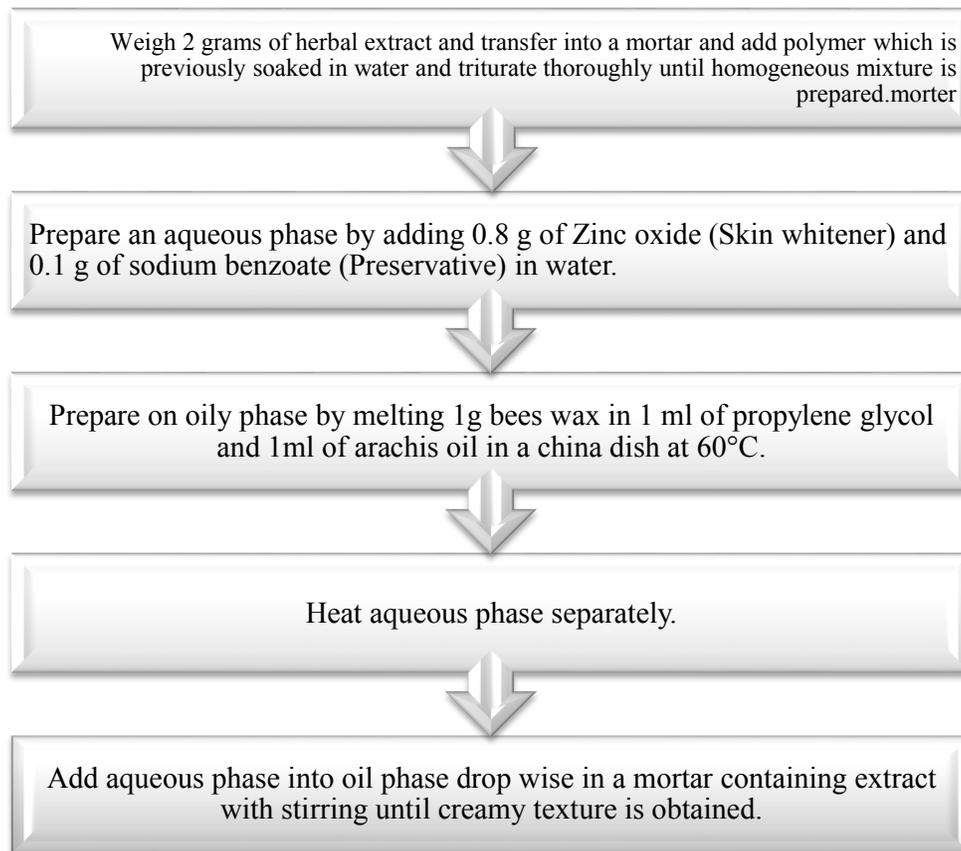
Sr. No	Ingredients	Other Name (Scientific Name)	Role of Ingredients	Quantity
1.	Aloe Vera Extract	Aloe barbadensis miller	Anti inflammatory	2gm
2.	Hibiscus Extract	Hibiscus, Rosa-Siensis	Retain moisture	2gm
3.	Senna Auri Culate Extract	Senna Alexendria, Sonamukhi, Indian senna	Antibacterial	2gm
4.	Glycerine	Glycerol	Moisturizer	1ml
5.	Propylene Glycol	Trimethyl Glycol	Moisturizer or Binder	1ml
6.	Zinc Oxide	Zinc White	Skin Whitener	0.8gm
7.	Sodium Crboxy Methyl Cellulose	Edifas B	Polymer	2gm
8.	Bees Wax	Yellow Wax, Cera Alba	Base	0.9gm
9.	Almond Oil	Almendra Dulce	Base	0.1ml
10.	Sodium Benzoate	Benzoic Acid	Preservative	0.1gm
11.	Purified Water	-	Vehicle	Q.S

2.2 Method of Preparation

A. Extraction of Herbal Ingredients

For this study the **maceration** process is used for the extraction of herbal ingredients used in the formulation. Maceration is the simple technique use for extraction of plant material. In maceration process powdered or coarse plant material is soaked in suitable solvents such as ethanol, methanol, acetone etc. It is Most commonly used inexpensive technique used for the extraction of different bioactive compounds from plant material. The selection of suitable solvent is most important factor for the extraction of particular plant extract. Maceration consist of converting large particles into smaller powdered form to increase the surface area for achieving best results from extraction by easy mixing with solvent. Then this mixture of plant material and solvent is kept for longer time (4-8 days), agitated at different intervals and filtered through a filtration medium. The efficiency for extraction depends on the type of solvent and plant material. Solvent polarity is also important factor which affects the efficiency of extraction. Due to maceration ruptures the cell structure and chemical constituents expose to react with solvent and helps in removal of active constituents from different plant materials. This method is mostly preferred for the exaction of different types of bioactive compounds at laboratory scale.

2.3 Preparation Table



III. EVALUATION OF HERBAL FACE CREAM

3.1 Organoleptic Characteristics

In this parameter, all blank formulations and drug-loaded formulations were tested for physical appearance, color, texture, phase separation, and homogeneity by visual and texture were tested by checking cream between thumb and index finger.

3.2 Physicochemical Evaluation

1. **pH:** pH of the formulation is measured by using a calibrated digital pH meter at constant.
2. **Homogeneity:** Homogeneity The consistency of the formulations and presence of coarse particles were used to evaluate the texture and homogeneity of the formulations. Immediate skin feel (including stiffness, grittiness, and greasiness) are also evaluated.
3. **Spread Ability:** Adequate amount of sample is taken in between two glass slides and a weight of 100gm is applied on the slides for 5min. observe the spread ability.
4. **Skin Irritation:** Small amount of the cream was sprayed on left hand dorsal skin and kept for sometime, result was found non-irritant on the skin.
5. **Skin Conditioning:** The appearance of the skin after application of the cream was seen to be moisturized, smooth, hydrated and emollient.

3.3 Stability Study

1. **Temperature Variation:** Stability testing of prepared formulation was conducted by storing at different temperature conditions for specific period of time. The packed glass vials of formulation stored at different

temp., conditions and were evaluated for physical parameters like color, odor, consistency, PH etc.

- Light Exposure Testing:** The product is placed in its actual packaging at direct sunlight for 48 hours to check any discoloration of the product.

3.4 Microbial Assay

The formulated cream were inoculated on the plates of agar media by streak plate method and a control was prepared by excluding the cream. The plates were placed into the incubator for 24 hours. After the incubation period, plates were taken out and checked for the microbial growth by comparing it with the control.

3.5 Dye Test

Dye solubility and dilution tests were conducted to determine the type of emulsion formed. In this test, an emulsion was mixed with a water – soluble dye (Amaranth), and observed under the microscope. Continuous phase appearing red was considered as the emulsion is O/W type. In dilution method, to find out the oil in water emulsion, it was diluted with an aqueous solvent whereas to find out water in oil emulsion, it was diluted with an oily liquid.

3.6 Skin Irritation

Small amount of cream was applied on left hand dorsal skin and kept for sometime, and observe the result.

3.7 Wash Ability

This is the common method for checking the wash ability of the formulation. The formulation was applied on the skin and then ease and extent of washing with water were checked manually by using 1 lit of water is used to remove all content of the formulation were applied on the surface.

IV. RESULT AND DISCUSSION

Following Evaluation parameters were performed to ensure quality of prepared face cream.

4.1 Organoleptic Evaluation

Herbal face cream was evaluated for organoleptic parameters showed in the following table. The color of formulation was brownish. The odour of prepared formulation was pleasant and good acceptable which is desirable to cosmetic formulations. Texture and smoothness were acceptable as per requirement of cosmetic formulations.

Table 2: Organoleptic Evaluation

Sr. No	Parameters	Observations
1.	Colour	Brownish
2.	Odour	Pleasant
3.	Texture	Fine
4.	Smoothness	Smooth
5.	Appearance	Creamy

4.2 Physicochemical Evaluation

Herbal face cream was evaluated for physicochemical parameters showed in the following table. The pH of formulation was found close to neutral. Also gives satisfied homogeneity, easily removable, easily spreadable, non-irritant.

Table 3: Physicochemical Evaluation

Sr. No.	Parameters	Observation
1.	pH	6.80
2.	Homogeneity	Satisfied

3.	Skin irritation	Non – irritable
4.	Spreadability	Satisfied
5.	Removable	Easily removable
6.	Skin condition	Smooth, Hydrated, Moisturised
7.	Wash ability	Easily Washable

4.3 Stability Study

The result of stability were shown in table.No change in color, odour, texture and smoothness was observed. The stability studies showed a slight change in pH of formulation at 40°C.

Table 4: Stability Studies

Sr. No	Parameters	At Room Temperature	At 40°C
1	Colour	No Change	No Change
2	Odour	No Change	No Change
3	Texture	Fine	Fine
4	Smoothness	Smooth	Smooth
	pH	6.80± 0.02	6.78± 0.05



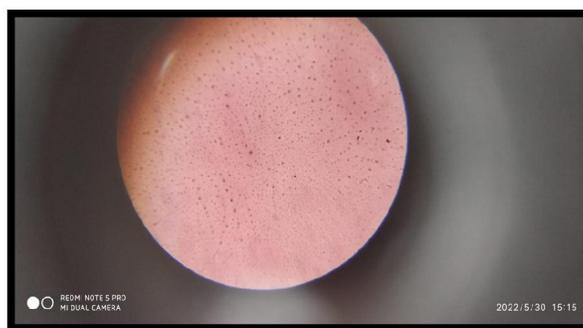
4.4. Antimicrobial Sssay

By measuring zones of inhibition the antibacterial activity is evaluated

Sr. No	Parameter	Observation
1.	Microbial growth	Absence

4.5 Dye Test

Under microscopic observation the disperse globules apper red in colour the ground is colourless it result that the prepared cream is O/W type emulsion cream.



V. CONCLUSION

From this study it is conclude that the prepared formulation of Polyherbal face cream complies all the evaluation parameters which are tesed. From this study it is assure that the prepared formulation was successfully done. It proved

that the herbal face cream was prepared is effective for cleansing, moisturizing, smoothing effect on the skin. The herbal formulation is beneficial for easy application and no side effects and are mostly preferred by the peoples. Due to anti-bacterial and anti-inflammatory properties of hibiscus, aloe-vera and senna it prevents skin related disorders also improves skin tone, protects from damaging UV rays. By this study, using more than one herbal ingredients achieved more effective and quality product to improve skin tone, and beautifying skin. After the evaluation of prepared formulation it suggested that the prepared formulation was physico-chemically stable and possessed characteristics of standard topical formulation.

VI. CONFLICT OF INTEREST

The authors declared no conflict of interest.

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