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Preparation and Evaluation of Polyherbal Cream

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ABSTRACT: These formulations can be evaluatedby various parameters like pH, viscosity, irritancy, spreadability, microbial growth, thermalstability, homogeneity, acid value, saponification value, accelerated stability studies, patch test,smear test, after feel, washability, physical properties, etc. Chemical based cosmetics are harmful to the skin and an increased awareness amongconsumers for herbal products triggered the demand for natural products and natural extracts incosmetics preparations. The increased demand for the natural product has created new avenues incosmeceutical market. The natural content in the botanicals does not cause any side effects onthe human body; instead enrich the body with nutrients and other useful minerals.

KEYWORDS: Herbal Cream,Nutmeg,Ginger,Wheat

I. INTRODUCTION

Cream is a preparation used for the application to the skin. Creams are also applied to the mucus membrane such as vagina, rectum. Creams may be considered as pharmaceutical products and cosmetics used in variety of skin conditions.[1,2] The demand of herbal cosmetics due to the availability of new ingredients are the financial reward for developing the successful products. Now a days herbs are widely used as remedial agents because herbs are easily available at less expensive and non-toxic. So the people have good faith in such remedies. This herbal formulation produce cleansing and beautifying effects and improves overall appearance when rubbed, poured, sprayed externally or applied to body parts. Cosmetic from natural sources are considered better and safer. Plant are the natural sources of cosmetic formulation. They can be used to design some useful inorganic materials that are called green synthesis. They are made from original ingredients in plants, leaves, roots, fruits and flowers which have properties for health and beauty. From the ancient time people are using herbs for cleaning, beautifying and to manage the skin from acne, blackheads, pimples, dark circles. Excessive exposure to heat, that causes skin to dehydrate during summer and causes wrinkles, blemishes, pigmentation and sun burns. Extreme so of winter causes damages to the skin and hairs in the form of cracks, cuts, infections, hair fall and dandruff. According to Ayurveda skin problems are normally due to impurities in blood. In order to overcome these problems, herbal cosmetics are used. The cosmetics which are formulated by using medicinal plants are with less side effects and with more skin glowing and skin whitening properties. Toxins are may accumulated in blood are due to improper food and lifestyle are causing skin related disease. Herbal face creams are helps to get rid of wrinkles, dark circles, pimples, and acne. Herbal face creams are may increases the fairness and smoothness of skin. Herbal face creams are one of the oldest and beautiful method of cleansing skin. There are various kind of face creams described in Ayurveda which have nourishing, healing, cleaning, astringents and antiseptic properties. Herbal face creams used in Ayurveda helps to reduce wrinkles, pimples, and acne and dark circles. Natural cosmetics contains some vital vitamins that are required for the health and glow of our skin. Herbal cosmetics or products are made from various cosmetic ingredients to form the base in which one or more herbal ingredients are incorporated for defined cosmetic benefits. The herbal paste which is applied on the face to treat acne, pimples, scars, marks, and pigments are known as “MOCHA LEAP” in Ayurveda. The process of smearing this herbal mix on face is known as ‘mocha leap”. This beauty therapy is popularly as facial. Herbal face creams which are recommended for acne, pimples, and blackheads usually control the discharge of sebum from sebaceous glands and remove the harmful bacteria inside acne lesion. The scars and marks of skin can be reduced by adding fine powders of sandal and orange peel with acne face creams. Cosmetics are defined as the products used for the purpose of cleaning, beautifying, promoting attractiveness or

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alternating the appearance. From the ancient times different herbs are used for cleansing, beautifying and to manage them. Face skin is the major part of the body, which indicates the health of an individual. In Ayurveda, the herbal paste is called as "mocha leap" used as a facial therapy. This herbal paste smeared on face to treat acne, pimple, scars, marks and pigments. Face cream is the smooth power which is used for facial application. These preparations are applied on the face in the form of liquid or pastes and allowed to dry and set to form film giving tightening, strengthening and cleansing.[3]

IDEAL PROPERTIES OF CREAM[4]

- ✓ They are easy to apply.
- ✓ They spread easily on the skin.
- ✓ They are pleasant in appearance.
- ✓ They cause less irritation to the skin.
- ✓ They should melt or liquefy.
- ✓ They should produce flushing action on skin and it's pore openings.
- ✓ They should form an emollient film on the skin after application.
- ✓ They should not make dry skin which happens in case, when the skin is washed with water or soap
- ✓ They also help in softening, lubricating and protecting skin apart from cleansing purposes.

ADVANTAGES[5]

- ✓ Ease of application.
- ✓ Easy to utilize.
- ✓ There is no special risk or technician needed for application.
- ✓ Avoid drug level fluctuations in the event of intra- and inter-patient variance.
- ✓ Very good patient adherence.

The benefit of employing cream formulations is their practicality; they can be applied directly to the skin without leaving any traces behind, and they are simple to wash and clean.[6]

LIMITATIONS [7]

- ✓ It can be used primarily for medications that require extremely little plasma concentration for effect.
- ✓ It increases the risk of allergic reaction.
- ✓ Larger particle-sized medications are difficult to absorb through skin pores.
- ✓ Possibility of contact dermatitis or skin irritation from any medication.

TYPES OF HERBAL CREAMS

Herbal creams are emulsions which includes both oil and water. Different tinctures, extracts, and essential oils can be found in herbal creams. Vitamins and minerals are natural nutrients found in herbal creams, which are free of synthetic additives that might be toxic.[8,9,10]

They fall into two categories:

1) Oil-in-water (O/W) Creams: Creams that consist of small oil droplets distributed in a continuous phase are referred to as oil-in-water (O/W) creams. Whereas, an emulsion containing oil droplets dispersed across the aqueous phase is referred to as an oil-in-water (O/W) emulsion.[11]
2) Water-in-oil (W/O) Creams: creams consisting of water combined with oil in a continuous phase, are referred to as waterin-oil (W/O) creams. The emulsion is considered to be water-in-oil (W/O) type when the dispersed phase is water and the dispersion medium is oil.[12]

METHODS AND MATERIALS

Extract Preparation

One of the most crucial processes entailed maceration, which involved soaking plant components (leaves or powders) in a container with a cold solvent and letting it lie at room temperature for at least three days while stirring it frequently. In order to release the soluble phytochemicals, the plant's cell wall was meant to be softened and broken during the processing. The mixture is pressed or strained by the filtration process after three days.

Procedure:

1) Five gram of nutmeg powder were obtained.
2) Nutmeg powder was blended and macerated with 96 % of ethanol for 5 days.
3) The solution then filtered with flannel, to obtain a thin filtrate. The aqueous filtrate is then evaporated on the water bath until allthe ethanol has evaporated and a thick filtrate is produced.

same procedure is followed for wheat

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Infuse Ginger:
Grate or chop 5g of fresh ginger root and add it to 5ml of carrier oil (such as coconut oil) in a heat resistant container. Heat the mixture over low heat for about 30 minutes to infuse the ginger into the oil, stirring occasionally. Once infused, strain the oil to remove the ginger solids. Reserve the ginger infused oil.

PROCEDURE

1) Heat liquid paraffin and beeswax in a borosilicate glass beaker at 75 °C and maintain that heating temperature. (Oil phase).
2) In another beaker, dissolve borax, methylparaben in distilled water and heat
this beaker to 75 °C to dissolve borax and methylparaben and to get a clear solution. (Aqueous phase).
3) Then slowly add this aqueous phase to heated oily phase [25]. Then add a measured amount of extract and stir vigorously until itforms a smooth cream.
4) Then add few drops of Ginger oil
5)Then add rose oil as a fragrance.

GINGER OIL

S.NO	INGREDIENT	ROLE
1	Nutmeg	Reduce Hyperpigmentation
2	Wheat	Antioxidant,Skin whitening
3	Ginger	Antioxidant
4	Beeswax	Emulsifying agent, stabilizer and gives thickness to the cream.
5	Liquid Paraffin	Lubricating agent
6	Borax	Alkaline agent which reacts with emulsifying agent to form soap.
7	Methylparaben	Preservative
8	Rose oil	Fragrance

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Formula for Cream Formulation

S.NO	INGREDIENTS	F1	F2	F3
1	Extract	4ml	3ml	5ml
2	Ginger oil	2 Drops	2 Drops	2 Drops
3	Liquid paraffin	10ml	12ml	15ml
4	Bees Wax	2.5g	3g	3.5g
5	Methyl paraben	0.2g	0.2g	0.2g
6	Rose oil	Q.S	Q.S	Q.S

EVALUATION OF CREAM

pH determination

The pH of the cream can be determined using a sufficient amount of the formulation diluted with a solvent in a beaker of the cream at room temperature.

Physical appearance

The cream's physical appearance is determined by its colour, roughness, and texture. **Spreadability**

A requisite amount of sample is divided between two glass slides, and the slides are weighted for 5 minutes with a 100gm weight.

Viscosity

Viscometers can be used to determine the viscosity of formulated creams.

Homogeneity

The homogeneity of the formulation was assessed visually and tactilely.

Washability

The ease with which the creams applied could be removed was tested by washing the affected area with tap water.

Irritancy study

Irritation, erythema, and oedema were all examined, for regular intervals up to 24 hrs and reported.

Phase Seperation

Cream is placed under room temperature then it is observed after 24 hours

Greasiness

Here, a smear of cream was put to the skin's surface, and its grease- or oil-likeness was assessed.

II. RESULT AND DISCUSSION

Physical Evaluation:

In this test, cream was observed for color, odor, texture, state.

S.NO	PARAMETERS	F1	F2	F3
1	Colour	Peach	Peach	Peach
2	Odour	Pleasant	Pleasant	Pleasant
3	Texture	Smooth	Smooth	Smooth
4	State	Semisolid	Semisolid	Semisolid

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Irritancy Test:

Mark the left-hand dorsal surface area (1 cm2) with a marker. After that, the cream was administered there, and the duration was recorded. Then, for a period of up to 24 hours, it is examined for irritancyif any, and reported. The formulation was free from irritant effect.

S.NO	Observation	F1	F2	F3
1	Irritant	Nill	Nill	Nill

Washability:

A small amount of cream was applied on the hand and it is thenwashed with tap water. The formulation (F3) was easily washable

S.NO	Observation	F1	F2	F3
1	Washability	Not Washable	Not Washable	Washable

pH:

0.5 g cream was taken and dispersed in 50 ml distilled water and was measured by using digital pH meter. The pH was (F3) found to be 7.2.

S.NO	Observation	F1	F2	F3
1	pH	5.59	5.75	7.2

Spreadability:

The spreadability was measured in terms of how long it took two slides operating under a specific load to separate from the cream positioned in between the slides. The spreadability is improved by separating the two slides more quickly. Glass slides with uniform dimensions were selected from two sets. The cream formulation was then placed on a slide that was cut to the proper size. The formulation was then covered by another slide. The cream between the two slides was then uniformly compressed to produce a thin layer after a weight or specific load was applied to the upper slide. The extra formulation that had adhered to the slides was scraped off once the weight was removed. The weight that was linked to the upper slide gave it the freedom to fall off on its own. It was noted how long it took the upper slide to detach.

Spreadability= m × l/t

Where,

m = Standard weight which is tied to or placed over the upper slide(30g)

l = Length of glass slide(5cm)

t = Time taken in seconds

The spreadability (F3) was found to be 15.04g/cm

S.NO	Observation	F1	F2	F3
1	Spreadablity	33g/cm	27.5g/cm	15.04g/cm

Greasiness:

Here, a smear of cream was put to the skin's surface, and its grease- or oil-likeness was assessed. The cream was found to be non greasy.

S.NO	Observation	F1	F2	F3
1	Greasiness	Non greasy	Non greasy	Non greasy

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Phase Seperation
Cream is placed under room temperature then it is observed after 24 hours

S.NO	Observation	F1	F2	F3
1	Phase Seperation	No Seperation	No Seperation	No Seperation

Viscosity

Viscometers can be used to determine the viscosity of formulated creams Here Formulation (F3) was found to be 4406.3cps.

S.NO	Observation	F1	F2	F3
1	Viscosity	4006.6cps	3560.1cps	4406.3cps

Formulation (F3) Results

S.NO	PARAMETER	OBSERVATION
1	Colour	Peach
2	Odour	Pleasant
3	Texture	Smooth
4	State	Semisolid
5	Irritant	Nil
6	Washability	Easily Washable
7	pH:	7.2
8	Spreadability	15.04g/cm
9	Greasiness	Non greasy
10	Phase Seperation	No seperation
11	Viscosity	4406.3cps

III. CONCLUSION

The formulation and evaluation of nutmeg face cream were the focus of the current work. Because this cream formulation was ano/w type of emulsion, it could be easily removed with plain water after use. Spreadability of the developed formulation was good.The cream's PH and viscosity were both good. During storage, cream doesn't exhibit any phase separation of any kind. The cream had a non-grassy flavor and was simple to remove after use. The skin was not harmed or irritated by the formulation.

In conclusion, Polyherbal face cream is a skincare item made with nutmeg-Wheat based ingredients that are reputed to provide positive skin-care effects. Antioxidants, vitamins, and minerals found in nutmeg are said to nourish the skin, keep it hydrated, and encouragea more even complexion. Additionally, nutmeg-based herbal extracts may be relaxing and anti-inflammatory, which may be able tocalm sensitive skin and lessen redness.It's crucial to remember that a nutmeg herbal face cream's effectiveness might change based on a number of variables, including a person's unique skin type, sensitivity, and general skincare regimen

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