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FORMULATION AND EVALUATION OF MOISTURIZING CREAM USING CALENDULA OFFICINALIS (MARIGOLD) & GINGER

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ABSTRACT

The purpose of the present research work was to formulate and evaluate calendula officanlis (marigold), ginger and vitamin E moisturizing cream, the majority of existing creams which has prepared form drugs of synthetic origin, such as acyclovir, triamcinolone, calcipotriene, extras give fairness to face, but it has several side effects such as itching or several allergic reactions this vanishi cream do not have any of these side effects, without side effects it gives clear, smooth, anti-aging skin. Method carried out to prepare calendula officanlis (marigold), ginger and vitamin E moisturizing cream was very simple. Firstly, oil phase was prepared the mixture of stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) were melted at 70˚c. Second aqueous phase was prepared, mixture of alcoholic extract of crude drug calendula officanlis (marigold), (ginger) (4.5%), glycerin (6 %) perfume (0.5%), water (71%) heated at 70˚c with continuous stirring. Now, once the transfer was completed it was allowed to come at room temperature all the while being stirred perfume was added at last just before the finished product was transferred to suitable container. The above prepared moisturizing cream was evaluated the physical parameters such as ph, homogeneity by visual and by touch, appearance (colour) rubout (spread ability, wetness), type of smear, emollience were determined.

KEYWORDS: Calendula officinalis, Ginger Moisturizing Cream.

INTRODUCTION

Nowadays various creams are used in the cosmetic preparation for augmenting beauty and attractiveness cosmetics are classified on the basis of dosage form like cream, powder, soap,

solutions, etc. and according to part or organ of the body to be applied for like; cosmetic for skin, hair, nail, teeth and mouth etc. 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 moisturizing cream it softens skin, leaving nothing behind. Moisturizing 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 more user – friendly.

The skin is the body's first line of defense for external exposure the signs of ageing are most visible in the skin although, ageing skin is not a threat to a person, it can have a detrimental effect on the psychology of a person. Much of the pre nature ageing occurs as a direct or indirect result of skin's interaction with the environment. Exposure to sunlight is a recognized as a major factor in the etiology of progressive unwanted mages in the skin appearance photo memo protective agents are capable of preventing the adverse effects of oil reactive on the skin, which are caused by excessive generation of reactive oxygen species.

This moisturizing consists of light colored forked – shaped root (ginger), a relatively long stalk and green leaves with an oval shape. Panax quinquefolius and Asian ginger and vitamin E as antioxidant.

In the United States, the food and drug administration (FDA),which regulates cosmetics, defines cosmetics as products &"intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or functions".

Marigold, (Genus Tagetes), genus of about 50 species of annual herbs of the aster family (Asteraceae), native to south-western North America, tropical America, and South America. Members of the genus Tagetes have attractive yellow, orange, or red composite flowers that are solitary on the stems or clustered.

OBJECTIVE

The objective of this research work was to formulate the cream which does not cause any side effects or adverse reactions the cream also acts as a fairness expert in day-to-day life by

removing aging signs, it also possesses nutritional value which provided required nutrients to the skin. As it is made from calendula officinalis and giger.

MATERIAL

- **Raw colletion**

Crude Drugs and Material were collected form Rpdcop Badnapur and Market

Crude drug	Uses
Ginger	Antiaging
Calendula officinalis (marigold)	Anti inflammatory
Vitamin E	Antioxidant
Steric acid	Fatty material
Potassium Hydroxide	For fine texture without excessive harshness
Glycerin	As humectant, for soften and protect skin.
Rose Water	For fragrance

1. Calendula officinalis

Kingdom–Plantae

Division-Magnoliophyta

Class-Magnoliopsida

Family-Asteraceae

Tribe-Calenduleae

Genus-Calendula

Species-officinalis

Uses

- Heals wounds and chapped skin
- Great for dry and damaged skin
- Calms acneic skin
- Soothes rashes & soreness

- Minimizes scar formation
- Promotes skin tissue repair
- Anti-inflammatory
- Anti-septic & Antibacterial

2. Ginger

Classification

* Division: Spermatophyta
* Class: Angiospermae
* Order: Musales
* Family: Zingiberacaea
* Genus: Zingiber
* Spesies: Officinale

Chemical constituents: ginger content saponins, ginger oils and phytosterol, carbohydrates and sugars, organic acids, nitrogenous substances, amino acids and peptides, vitamins and minerals, and certain enzymes.

Uses

Ginger deserves its skin care street cred. This spicy root may help:

- Reduce the appearance of wrinkles and fine lines
- Fade scars
- Keep your hair and scalp healthy
- Make cellulite less noticeable
- Improve acne symptoms

3. Vitamin E

Ascorbic acid

Mono saccharide

Formula – C29H50O2

Uses

- Vitamin E promotes collagen production, boosts collagen
- Anti oxidant
- Protects skin cells from damaging free radicals caused by uv exposure.
- Promote healing, reduce hyper pigmentation.

4. Glycerin

- Glycerin easily attracts absorbs. Moisture, also attract dust and pollution which can cause irritation to some people.
- Humectant & emollient
- Allows the skin to retain moisture.
- Increase skin hydration, relieve dryness and refresh the skin's surface.

5. Stearic acid

Octadecanoic acid

It is usually found in various plants and animals fats.

Its major components of cocoa and shea butter.

Formula	–	C18H36O2
Melting point	-	69.3˚C
Molar mass	-	284.48 g/mol
Boiling point	-	36˚C
Density	-	941 kg/m3

Uses

Used as emollient and emulsifier

To protect skin's surface against water loss and help shore up skin's protective barrier.

6. Potassium hydroxide

• Formula	–	KOH
• Molar mass	–	56.1056 g/mol
• Density	-	2.12 g/cm3
• Melting point	-	360˚C
• Soluble in	-	water alcohol glycerol

It is stabilize the PH of any cosmetic product.

If the PH of a product is too acidic or too basic the product can disrupt the delicate skin mantle barrier.

Uses

For fine texture without excessive harshness.

7. Rose water

For fragrance

For sweet smell

Uses

Soothes skin irritation.

Soothes sore throats.

Reduces skin redness.

Helps prevent and treats infections.

Contains antioxidants.

Heals cuts, scars, and burns. Enhances mood.

Authentication

The plant material collected, was identified and authenticated by Mr.A.B.Rathod Assistant Professor, M. Pharm Pharmaceutics department of RPDCOP Badnapur

Method of preparation

- Steps carried out in the preparation of moisturizing cream were as follows.
- **Preparation of alcoholic extract of crude drug.**

All crude drug (Ginger and Calendula officanalis) of 5grams were taken separetly into the comical flask and then 100 ml of ethanol was added to it respectively, then the conical flask was capped with aluminum foil.

Then this mixture was placed for maceration for 7 days.

- **Preparation of oil phase**

Stearic acid (17%), potassium hydroxide (0.5%)WATER 71%, was taken into porcelain dish and this mixture was melted at 70˚C.

For preparing 20 gm moisturizing cream.

Sr. No.	Ingredients	Quantity (%)
1.	Stearic acid	17%
2.	Potassium hydroxide	0.5%
4.	Alcoholic extract	4.5%
5.	Glycerin	6%
6.	Perfume (Rose Water)	0.5%
7.	Water	71.0%

Preparation of aqueous phase

Alcoholic extract of crude drug (Ginger and Marigold) mentioned in step-1 (4.5%), glycerin (6%), water (71%) were taken into another porcelain dish and heated this mixture at 70˚C.

Addition of aqueous phase to oil phase with continuous stirring at 70˚C

- Now, once the transfer was completed it was allowed to come at room temperature all the while being stirred.

- Perfume (0.5%) was added at last just before the finished product was transferred to suitable container.
- Then cream was evaluated for various physical parameters.
- For preparing 20 gm moisturizing cream.

Crude drug	gm
Steric acid	4 gm
Water	14.90 gm (ml)
12OH	0.2 gm
Glycerin	0.6 gm
Ginger	0.2 gm
marigold	0.2gm
Vitamin C	0.5 gm
Perfume (Rose Water)	0.5 %/ml

Evaluation

- **Test for flavanoids**

Experiment	Observation	Inference
1) Shinoda test: To the test solution add few magnesium turnings and concentrated hydrochloric acid was added drop wise	Crimson red color appears after few minutes	Presence of flavonoids
2) Alkali reagent test : To the test sample add few drops of NaOH solution	Intense yellow color changes to colorless on adding few drops of NaOH	Presence of Flavonoids
3) Zinc hydrochloride solution test : To the test sample add a mixture of zinc dust and concentrated Hydrochloric acid	Formation of red color after few minutes	Presence of Flavonoids

Analysis of physical parameters

- **Determination of organoleptic properties:** The appearance of the cream was judged by its color, pear, scence and roughness and graded13.
- **Determination of PH:** Accurately weighed 5 gm of sample was dispersed in 45 ml of water. The PH of the suspension was determined at 27˚C using digital PH meter.
- **Determination of homogeneity:** The formulations were tested for homogeneity by visual appearance and by touch.

- **Determination of wetness.**

It was determined by applying cream on skin surface of human volunteer.

- **Determination of type of swear**

It was determined by applying the cream on the skin surface of human volunteer. After application of cream the type of film or smear formed on the skin were checked.(smooth and oily).

- **Determination of viscosity**

The viscosity determinations were carried out using a brook field viscometer (DV II + pro model) using spindle number s-64 at a 20 rpm at a temperature of 25˚C the determinations were carried out in triplicate and the average of three reading was recorded.

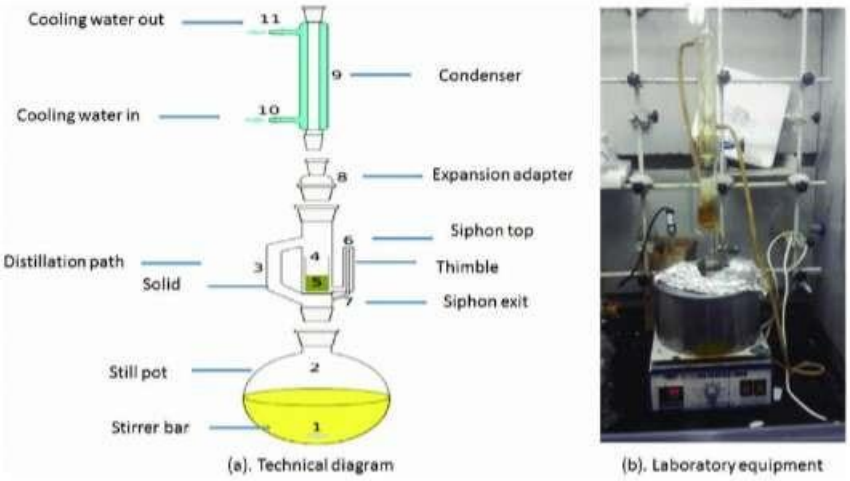

Figure Preparation of moisturizing cream.

RESULT

- **Appearance**

The cream prepared was found to be yellowish brown color and had pleasant odor.

- **PH**

The PH of cream was found to be 6.5 which is acidic value.

- **Homogeneity**

It was found that the cream was homogeneous and smooth and consistent in nature.

- **Rub outness**

It was found that the cream was easily spreadable and moisturizes the skin surface of human volunteer.

- **Type of smear**

MIt was found that the cream produced non-greasy film on the skin surface.

- **Emolliency**

After observation, it was found that cream not left residue on skin surface after application.

- **Viscosity**

The viscosity of cream was found to be 27025 CPS.

- **Type of emulsion**

The cream was found be of the o/w type emulsion by dilution and bye solubility test.

Physical parameters	**observation**
• Appearance	Yellowish brown color
• PH	6.5
• Homogeneity	Homogeneous smooth and consistent easily spreadable moisturizes skin surface.
A) By visual	
B) By touch	
• Rubout	
A) Spread ability	Non-greasy
B) Wetness	No residue left
• Type of smear	
• Emollience	o/w type emulsion
• Viscosity	
• Dilution test	o/w type emulsion

CONCLUSION

A Calendula officinalis (Marigold) and ginger moisturizing cream is promising and innovative product that combines the benefit of marigold extract. Throughout this cream we have explored antioxidant property of marigold that lead to antiaging. This cream represents a novel approach to anti-acne, antiaging, skin brighten, sunburn etc.

Studies have shown that ginger has many components like gingerol and shagols which have many properties including antibacterial activity. So in this work the attempt was made to use this ginger extract into topical emulgel.

The moisturizing cream of crude drugs with the best properties and having nutritional value was to be prepared by simple methods and less equipment's are required to the prepared marigold ginger and vitamin E .moisturizing cream also has anti oxidant and anti bacterial activity due to this it retards aging signs and pimple formation on the face. Further studies are required for this calendula officanlis (Marigold), gingerand vitamin E moisturizing cream, it was found that this type of formulation of the calendula officanlis (Marigold) ginger vitamin E moisturizing cream was not prepared earlier.

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