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Research Article

Formulation And Evaluation of Polyherbal Anti-Aging Cream

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ABSTRACT

The development and testing of an all-natural anti-aging lotion utilizing plant extracts of rose (*Rosa damascena*), lemon (*Citrus limon*), and marigold (*Calendula officinalis*) are the focus of this study. These plant-based components were chosen for their traditional applications in skincare, high antioxidant profiles, and ability to calm the skin. The cream was developed using standard extracts, and its physicochemical stability, safety, and effectiveness were evaluated over an 8-week course of use. The synergistic effects of the natural extracts resulted in significant improvements in skin hydration, flexibility, and reduction of fine lines, according to the data. Rose, lemon, and marigold extracts, according to the study, are safe and effective natural substitutes for anti-aging skincare products. A natural solution made to lessen the signs of aging, such as wrinkles, fine lines, and drooping skin, is herbal anti-aging cream. It includes plant-based extracts high in antioxidants, vitamins, and essential oils that nourish the skin and encourage cell renewal. Rose petals, marigold, and lemon peel are some of the ingredients that help hydrate skin, increase its flexibility, and defend against oxidative stress. Herbal creams are safe for extended use and mild on the skin, in contrast to chemical-based products. By consistently applying the lotion, you can naturally improve your skin's texture, bring back its youthful radiance, and promote healthy, radiant, and age-defying skin. A cold cream was made using the slab method by combining heated oil and aqueous phases at 75°C. Distilled water was used to geometrically combine the mixture on a slab in order to produce a smooth texture and consistent consistency.

INTRODUCTION

Human Skin: -

The skin is the body's largest organ. It covers the entire body. It serves as a protective shield against the heat, light, injury and infection.

The Skin also:

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1. Regulates body temperature
2. Stores water and fat
3. It is a sensory organ
4. Prevents water loss
5. Prevents entry of bacteria
6. Act as a barrier between organism and its environment
7. Helps to make Vitamin D when exposed to the sunlight

Cream: -

Ideal Cream is a delicate, thick product that is used to moisturize, treat, or protect the skin, such as face cream and hand cream characteristics of cream :-

1. It should have a low sensitization index.
2. It should be elegant in appearance.
3. It should be non-dehydrating.
4. It should provide a smooth texture.
5. It should be non-greasy and non-staining.
6. It should not cause irritation to the skin.
7. It should not alter the membrane or skin functioning.

Merits: -

1. Ease of application.
2. Convenient to all the population.
3. Avoidance of risk.
4. In case of intra and inter-patient variations, avoid fluctuation of drug levels.
5. No special risk or technician required for application of the product.
6. Achievement of efficacy with a lower total daily dosage of drug.
7. High patient compliance.

Demerits: -

1. Larger particle-sized drugs cannot be easily absorbed through the skin pores.
2. Chances of skin irritation or contact dermatitis due to any drug interactions.

3. Poor absorption may result due to the poor permeability of some drugs through the skin.
4. Chances of allergic reaction.
5. It can be used mainly for drugs that require exceedingly small plasma concentrations for action.
6. Denaturation of the drugs takes place due to the presence of enzymes in the epidermis.

• Herbal drugs and excipients profile: -

1. Bees wax: -

1.Synonym: Paraffin-wax, Cranauba

2.Biological Source: It is a product made from the honeycomb of the honeybee and other bees.

3.Family: Apidae

4.Chemical Constituents: The main chemical constituents are carbon (73.3%) hydrogen (13.2%) and oxygen (7.5%)

5.Uses: It offers a moisturizer that protects your lips from becoming dry and developing cracks.

2. Borax:

Borax is used in lotions and creams. Borax is combined with wax to improve the consistency of lotions and creams. It also works as an emulsifier when used with wax and is mostly used in hand soaps. It is an excellent ingredient used for cleaning as it's alkaline in nature.

3. Liquid paraffin: -

Paraffinum liquidum, often known as liquid paraffin or Russian mineral oil, is a highly refined mineral oil that is used in the medical and cosmetic industries. The paraffin (or kerosene) that is used as a fuel should not be confused with medicinal or cosmetic liquid paraffin. Petroleum-derived



saturated hydrocarbons make up the oily, colorless, transparent, and almost odorless liquid.

4. Methyl-P-Hydroxy Benzoate: -

The compound is widely used as a preservative for foods, cosmetics, and medicines. Methyl paraben-containing products have caused contact dermatitis and drug hypersensitivity but there has been no fundamental study on allergic reactions related to methyl paraben. Methyl para hydroxy benzoate has been found to cause skin, eye, and respiratory irritations. Since it is an endocrine disruptor, methyl para hydroxy benzoate can mimic the hormone estrogen and cause negative effects on glands that secrete reproductive hormones. Million Marker does not recommend that pregnant women or women trying to conceive.

5. Marigold: -

- Synonyms: Tagetes erecta L
- Green and fresh leaves obtained from the marigold plant belonging to the family Asteraceae.
- Use: it has anti -aging and anti- oxidant properties

6. Lemon: -

- Synonym: citrus lemon
- Lemon peel is obtained from the fresh ripe fruit of citrus lemon
- Family: Rutaceae

Lemon peel is the outer part of the pericarp of the ripe fruit of citrus lemon.

1. Use:

- 1) It helps in skin lightening
- 2) It provides vitamin C

7. Rose: -

1. Synonym: Rosa Rubiginosa

Petals are obtained from fresh and well-bloomed Rose flowers.

2. Family: Rosaceae.

- ##### 3. Use:
- a) Keeps skin hydrated,
 - b) Protects against sun damage,
 - c) Reduces dark spots,
 - d) Prevents acne and breakouts,
 - e) Helps moisturize skin

8. Lavender oil:-

Lavender may help improve sleep , treat , skin blemishes , relieve pain , reduce blood pressure, lessen menopausal hot flashesh , combat fungus growth and potentially promote hair growth. It has been known to have anxiolytic , anti inflammatory , anti oxidant , anti microbial effects herbal products like lavender essential oil may offer a solution to the problem of anti biotic resistance , invasive tretament , side effect or even drug addiction.

MATERIALS AND METHODS: -

MATERIALS: -

Bees wax it gives thickness to the cream, Borax is used as an emulsifying agent , Liquid paraffin use as a lubricating agent , Methyl-p-hydroxy benzoate use as a preservative , Marigold leaves gives Anti-aging properties , Lemon peel provide vitamin C , Rose petals it helps to moisturize skin , Lavender oil use as a fragrance.

Method of preparation: -

Preparation of Marigold leaves, lemon peel and rose petal extract:-

The fresh Marigold leaves were initially washed under running tap water. Next, the fresh and ripe



peel of the lemon fruit was taken. Fresh and well-bloomed Rose petals were also taken. All three natural ingredients were then air-dried in a dark place at room temperature before being ground to powder using an electric blender. The powdered crude drugs 2.5gm were placed into conical flask and 30 ml (about 1.01 oz) of ethanol was added. The conical flask was covered with aluminum foil. This mixture was then set aside for maceration for 24 hours. After the maceration process, it was filtered using Whatman filter paper. In the end, the extract was collected.

Formulation of Polyherbal Anti-aging cream:-

In a borosilicate glass beaker, heat liquid paraffin and beeswax to 75°C and maintain that heating temperature (Oil phase). In a separate beaker, melt

borax and methyl paraben in distilled water, then heat the mixture to 75°C until both are completely dissolved and the solution is transparent (aqueous phase). After that, gently mix this water phase into the heated oil phase. After that, combine a certain amount of rose petal extract, lemon peel extract, and marigold leaves extract, and stir well until the mixture becomes a smooth cream. Then, for aroma, add a couple drops of Lavender oil. Put this cream on the slab, add a few drops of distilled water if necessary, and then mix the cream on the slab in a geometric way to make sure the texture is smooth and all the ingredients are properly combined. The slab method or extemporaneous approach of preparing cream is the name of this process.

Formula: -

Table 1: Formulation Table

Sr no	Ingredients	F1	F2	F3
1	Bees wax	7 mg	9 mg	8 mg
2	Borax	0.8 mg	0.8 mg	0.8 mg
3	Liquid paraffin	15ml	13 ml	12 ml
4	Methyl-P-Hydroxy benzoate	0.2 mg	0.2 mg	0.2 mg
5	Marigold leaves	2 ml	2 ml	2 ml
6	Lemon peels	2 ml	2 ml	2 ml
7	Rose petals	2 ml	2 ml	2 ml
8	Lavender oil	2 ml	2 ml	2 ml

Evaluation Test: -

1. Determination of Physical Appearance: -

The visual aspect of the cold cream was evaluated against a dark backdrop. The cream was soft and yellowish in colour.

2. Homogeneity: -

The formulated cream's homogeneity was assessed through visual inspection and physical touch. After

feeling, emolliency, slipperiness, and the quantity of residue left post-application of a set amount of cream were evaluated. Type of smear: After the cream was applied, the nature of the film or smear created on the skin was examined. Removal: The simplicity of removing the applied cream was assessed by rinsing the treated area with tap water.

3. Shinoda Test: -

The Shinoda test is used to ascertain the presence of flavonoids in a given substance, and it is frequently



used in polyherbal treatments, such as anti-aging creams. Because many herbal cosmetics formulations rely on the antioxidant properties of flavonoids for skin health and anti-aging effects, it is essential for evaluating them.

Chemical tests: -

1. Salwoaski Test: -

Sterols in a given sample are identified using the colorimetric method known as the Salkowski test. Sterols are a type of steroid and play a crucial role in many biological processes, such as maintaining healthy skin. Finding sterols in anti-aging creams can point to the presence of ingredients that may improve skin elasticity and hydration retention.

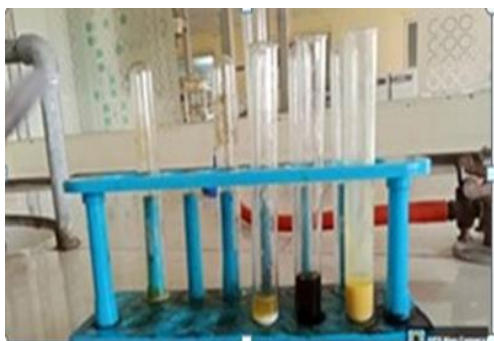


Fig.1: -Salwoaski Test

2. Saponin test:-

The saponin test is a qualitative method for screening phytochemicals that is utilized to identify the presence of saponins in herbal products such as polyherbal anti-aging creams. Saponins are naturally occurring substances that are present in numerous plants. They are recognized for their foaming characteristics (consider soap bubbles) and biological activities such as antioxidant, anti-inflammatory, and skin-repairing effects which are all beneficial for anti-aging skincare.



Fig No.2: -Saponin Test

3.Sensitivity Test: -

In order to ascertain if the polyherbal anti-aging cream causes any irritation, allergic reactions, redness, or sensitivity reactions when applied to the skin, the sensitivity test is conducted.



Fig No.3: -Sensitivity Test

RESULT: -

A polyherbal anti-aging lotion composed of Tagetes erecta L, Citrus lemon, and Rosa Rubiginosa was created. For 30 days, the cream was stored at room temperature in a closed container to test its stability. The end product had a pale-yellow hue. It has a lovely aroma and a silky texture.

CONCLUSION: -

The cream's use of ethanolic extraction of Marigold leaves, lemon peel, and Rose petals produced a variety of effects, and each of these herbal components displayed very distinct

behaviours. The mixtures are safe to use on the skin and stable at room temperature, according to discussions and outcomes. But it produced the best results across the board. All of the ingredients in the cream have notable multipurpose effects, including whitening, anti-aging, antioxidant, and antibacterial properties.

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