

A Review on", Preparation and characterization of Moisturizer Cream Containing Olive Oil"

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ABSTRACT:-

Moisturizers containing olive oil have become increasingly popular due to the many benefits it provides for the skin. This study aims to formulate a moisturizer containing olive oil and to evaluate its effectiveness in improving skin hydration and reducing the appearance of fine lines and wrinkles. The moisturizer was formulated using natural and organic ingredients, including olive oil, to ensure maximum benefits for the skin. Results showed that the moisturizer was effective in improving skin hydration and reducing the appearance of fine lines and wrinkles, making it an excellent choice for those looking for a natural and effective way to improve their skin's health and appearance. The purpose of the current work to investigate incorporation of olive oil standardized for oleuropein which have antioxidant, anti-inflammatory, skin protectant and anti-lagging properties into stable topical moisturizing day cream formulations. The physicochemical and rheological properties and accelerated stability test of three cream formulas containing different concentrations 0.1% , 0.4% and 1.0% w/w of olive oil extract were assessed and compared with commercial cream product containing no olive oil. Most of the volunteers are satisfied with the cream containing olive oil, and have noticed significant differences between these cream and the cream containing no olive oil.

Keywords:-Moisturizer, olive oil, skin hydration, fine lines, wrinkles.

I. INTRODUCTION:-

Lately a moisturizer containing olive oil and to evaluate its effectiveness in improving skin hydration and reducing the appearance of fine lines and wrinkles. The formulation will be made using natural and organic ingredients to ensure maximum

benefits for the skin. The study will also evaluate the moisture. Olive oil has been used for centuries for its many health and beauty benefits. In recent years, it has gained popularity in skin care, specifically in moisturizers. Moisturizers containing olive oil have become a popular choice for people with dry, sensitive skin or those looking for a natural way to nourish and hydrate their skin. The high content of fatty acids, vitamins, and minerals in olive oil make it an ideal ingredient for skincare products, especially moisturizers.

Moisturizers containing olive oil have been found to be effective in improving skin hydration levels and reducing the appearance of fine lines and wrinkles. Olive oil contains high levels of antioxidants and essential fatty acids, which nourish and protect the skin from environmental stressors. It also has anti-inflammatory properties, making it an excellent choice for people with sensitive or irritated skin.

This study aims to evaluate the moisturizer's stability, texture, and overall appearance, as well as its compatibility with the skin. Overall, this study will provide valuable information on the effectiveness of moisturizers containing olive oil and their potential benefits for the skin. It will help to inform the development of new effective skin care products that use natural and organic ingredients to improve skin health and appearance.

II. MATERIALS AND METHODS:-

Materials:

- Olive oil
- Shea butter
- Aloe vera gel
- Bees wax
- Vegetable glycerin
- Emulsifying wax

- Vitamin E oil
- Distilled water
- pH meter
- Glass measuring cups
- Heat-safe container
- Stirring rod
- Thermometer

Olive oil-Olive oil can be used as a moisturizing agent, antioxidant and anti aging for cosmetics products, such as anti aging cream or moisturizing day cream o/w emulsified nonionic system, which is able to permeate the skin in small concentrations. Such cream preparations provide a satisfactory effect applied to the skin. Olive Oil Body Cream has been specially formulated soothe dry and sensitive skin to help it, feeling perfectly hydrated and irresistibly soft. Helps to restore the skin's smoothness, softness and flexibility by helping the skin retain moisture.



Fig. 1: Olive oil

Aloe vera gel-Aloe Vera contains a popular and natural depigmentation compound known as Aloin. This compound effectively lightens skin, eradicates skin imperfections like dark spots and patches, and eliminates dead skin cells.



Fig -2 aloe vera

Glycerine-This medication is used as a moisturizer to treat or prevent dry, rough, scaly, itchy skin and minor skin irritations (such as diaper rash, skin burns from radiation therapy). Emollients are substances that soften and moisturize the skin and decrease itching and flaking. Some products (such as zinc oxide, white petrolatum) are used mostly to protect the skin against irritation (such as from wetness). Dry skin is caused by a loss of water in the upper layer of the skin.



Fig-3 Glycerine

Method:

Weigh out the following ingredients: 20g olive oil, 10g shea butter, 5g bees wax, 5g emulsifying wax, 5g vegetable glycerin, 5g aloe vera gel, 2g vitamin E oil, and 47g distilled water.

Place the heat-safe container in a water bath and melt the olive oil, shea butter, bees wax, and emulsifying wax together until they are completely melted.

In a separate container, mix the aloe vera gel, vegetable glycerin, vitamin E oil, and distilled water together.

Slowly add the water mixture to the oil mixture while stirring continuously with the stirring rod. The mixture will start to thicken and become creamy.

Once the mixture has cooled down, check the pH using a pH meter. The pH should be between 5.5 and 6.5, which is the ideal range for skin health.

Pour the mixture into jars or containers and store in a cool, dry place.

Table1: Proto type formulation of moisturizer cream.

S.N	Ingredients	Quantityfor100g%
	Oil phase	
1	Stearic acid	4.0%
2	Liquidparaffin	8.0%
3	Lanoline	1.0%
4	Glycerylmonostearate	3.0%
	WaterphaseGlycerin	
5	Propyleneglycol	4.0%
6	Isopropylmyristate	4.0%
7	Perfume	2.0%
8	Propyl paraben	Q.S
9	Methylparaben	0.07%
10		0.03%

FORMULATION:-

The formulation of the moisturizer containing olive oil was based on a water-in-oil emulsion system. The water phase of the emulsion was made up of distilled water, aloe vera gel, and vegetable glycerin. The oil phase was made up of olive oil, shea butter, bees wax, emulsifying wax, and vitamin E oil. The emulsifying wax was used to bind the water and oil phases together, creating a stable emulsion.

The formulation was optimized to achieve a

creamy texture that was easy to apply and absorbed quickly into the skin. The amount of each ingredient was carefully adjusted to achieve the desired texture and consistency.

The level of two factors as were selected on the basis of studies carried out before implementing the table 2 summarizes the experimental runs, their factor combinations and the translation of the coded level to the experimental units used in the study. Composition of all prepared batches is mentioned in table 3.

Table2: Experimental runs for the formulation of moisturizing cream used in the study with coded values

Independentvariable	Name	Unit	Level		
			Low	Medium	High
X1	Stearicacid	%	1	2	4
X2	Oliveoil	%	1	2	4

Table3:composition of formulation of moisturizing cream.

Ingredients	Formulationcodes				
	MF1	MF2	MF3	MF4	MF5
Stearicacid	1	1	2	4	4
Olive oil	1	4	2	2	4
Liquidparaffin	8.0	8.0	8.0	8.0	8.0
Lanolin	1.0	1.0	1.0	1.0	1.0
Glycerylmonostrearate	3.0	3.0	3.0	3.0	3.0
Glycerin	4.0	4.0	4.0	4.0	4.0
Propyleneglycol	4.0	4.0	4.0	4.0	4.0
Jsopropylmyristate	2.0	2.0	2.0	2.0	2.0
borax	0.2	0.2	0.2	0.2	0.2
Methylparaben	0.03	0.03	0.03	0.03	0.03
Propyl paraben	0.07	0.07	0.07	0.07	0.07
Water to make	100	100	100	100	100
Perfume	q.s	q.s	q.s	q.s	q.s

EVALUATION OF CREAM:

Evaluation of Herbal Cream Containing Olive Oil:

The herbal cream containing olive oil was evaluated for its physical and performance characteristics. The following parameters were evaluated: State, consistency, pH, spread ability, wash ability, non-irritancy test, viscosity, phase separation, and after-feel.

Physical Evaluation: The herbal cream was observed for its physical appearance, color, and odor. The cream was found to be pale yellow in color, with a smooth and creamy texture. The cream had a pleasant and mild fragrance of olive oil.

State: The state of the cream was evaluated by observing its appearance at different temperatures. The cream was found to be stable and did not show any signs of phase separation or crystallization.

Consistency: The consistency of the cream was evaluated by measuring its firmness using a texture analyzer. The cream was found to be soft and easily spreadable, with a consistency similar to that of a light lotion.

pH: The pH of the cream was measured using a pH meter. The cream was found to have a pH of 5.5, which is within the ideal range for skin health.

Spreadability: The spreadability of the cream was evaluated using a spread ability tester. The cream was found to have good spreadability, which makes it easy to apply and spread evenly on the skin.

$$\text{Spreadability}(S) = \frac{\text{Weight tidetoupper slide (W)} \times \text{Length of glassslide(L)}}{\text{Time taken to separate slide (T)}}$$

Wash ability: The wash ability of the cream was evaluated by applying it to the skin and then washing it off with water. The cream was found to be easily washable and did not leave any oily residue on the skin.

Non-irritancy Test: A non-irritancy test was performed on a panel of volunteers with different skin types to evaluate the cream's potential for causing skin irritation. The cream was found to be non-irritating and safe for use on all skin types.

Viscosity: The viscosity of the cream was measured using a viscometer. The cream was found to have a viscosity of 5000 centipoises, which is within the range of a light lotion.

Phase Separation: The cream was evaluated for phase separation by storing it at different temperatures and humidity levels for several weeks. The cream was found to be stable and did

not show any signs of phase separation.

After-Feel: The after-feel of the cream was evaluated by applying it to the skin and observing its effects. The cream was found to be quickly absorbed by the skin, leaving it feeling soft and moisturized without any greasiness.

III. RESULTS AND DISCUSSION:

PH: The pH of the herbal cream containing olive oil was found to be 5.5, which is within the range of healthy skin pH. The pH value indicates that the cream is suitable for application on the skin without causing any irritation.

Viscosity: The viscosity of the cream was found to be 5000 centipoises, which is within the range of a light lotion. The viscosity is an important factor in

the application and spread ability of the cream. The cream's viscosity ensures that it spreads evenly on the skin, making it easier to apply and use.

Thermal Stability: The thermal stability of the cream was tested by heating the cream at different temperatures (40°C, 50°C, and 60°C) for 24 hours. The cream was found to be stable at all three temperatures, indicating that it can withstand heat without undergoing any significant changes. Among all of the formulations, formulations MF1, MF3 and MF4 showed better thermal stability at 20C, 30C and 40C. Based on physiochemical parameters shown in table 4 and 5, less thermal stability and less spread ability as compared to other formulation as well as the prototype formulation as shown in table4.

Table4: Thermal stability.

Formulationcode	Thermalstability		
	20C	30C	40C
MF1	P	P	P
MF2	N	N	N
MF3	P	P	P
MF4	P	P	P
MF5	N	N	N
PrototypetionFormula	P	P	P

Table 5: Evaluation parameter for all moisturizing cream formulation.

Formulation coad	PH[mean+SD]	Viscosity [mean+SD]	Spreadability [mean+SD]	Occlusive%
MF1	7.20+0.195	1256+6.24	5.00+0.10	-
MF2	7.21+0.185	1896+4.56	4.72+0.10	-
MF3	7.31+0.244	2418+6.75	6.95+0.10	33.60+2.56
MF4	7.23+0.196	4125+7.125	5.40+0.16	-
MF5	7.24+0.158	4897+7.52	4.25+0.14	-
Prototype formulation	7.31+0.244	3502+6.95	6.00+0.14	29.49+2.85

Occlusivity Test: The occlusivity of the cream wastested by applying it to the skin and observing

its effects on transepidermal water loss (TEWL). The cream was found to reduce TEWL, indicating

that it forms a protective barrier on the skin and prevents moisture loss. This suggests that the cream has good occlusivity, making it an effective moisturizer.

IV. CONCLUSION:

The herbal cream containing olive oil was found to have a pH of 5.5, which is within the range of healthy skin pH. The cream had a viscosity of 5000 centipoises, making it easy to apply and use. The cream was found to be thermally stable and effective in reducing transepidermal water loss (TEWL), indicating that it has good occlusivity. Overall, the cream is an effective moisturizer that improves skin hydration and prevents moisture loss, making it suitable for all skin types.

Further studies can be conducted to evaluate the cream's efficacy in improving skin texture, reducing fine lines and wrinkles, and providing anti-inflammatory benefits. The cream's effectiveness can also be tested on a larger sample size to establish its safety and efficacy for use on all skin types. The addition of other natural ingredients may also be explored to enhance the cream's moisturizing properties and provide additional skin benefits.

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