



Formulation and Evaluation of Anti Acne Herbal Cream

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ABSTRACT:-

Acne is a most common dermatological issue affecting individuals of all ages, often leading to diminished self esteem and confidence. This study aims to develop an effective Anti Acne cream using herbal ingredients. The primary objective is to formulate an herbal cream capable of controlling and inhibiting the growth of acne-causing bacteria. This Anti Acne herbal cream contains ingredients like neem, aloe vera, Tulsi, beeswax, methyl paraben, liquid paraffin, borax, rose water, and distilled water. The cream was evaluated for various parameters such color, odour, texture, smell, pH, viscosity, spread ability, washability, irritability, and found to be contented with all required characterization. The main objective is to prepare a cream with natural herbal extracts and minimize the side effects of the chemical cosmetics. Thus, this formulation can be used as an efficient cream for using for the maintenance of healthy and glowing skin.

Keywords:-Aloe Vera, Tulsi, Neem, Anti Acne, herbal ingredients. Acne.

INTRODUCTION :-

1. Acne

Many people refer the herbal product over the synthetic one, synthetic product produce several harmful side effects compare to the herbal product they have minimal side effects. acne becomes the major problem now a day's in adults , it affects both genders (male and female). An acne is a skin disease which causes painful social and psychological effects on sufferers. It is a problem for adults as well as for many teenagers. The primary factors involved in the formation of acne are increased sebum production, sloughing of keratinocytes, bacterial growth and inflammation. Propionibacterium acnes (P. acnes), an anaerobic pathogen, plays an important role in the pathogenesis of acne by inducing certain inflammatory mediators, the severity of acne can differ significantly from person to person, with genetic factors playing a crucial role.

2. Factors responsible for acne :

- Propionibacterium acnes (P. acne)
- Inflammation
- Androgen-induced enhanced sebum hyper-production
- Medications.
- Due to the Cosmetics Used
- Stress
- Hormonal Changes and Menstruation
- Squeezing the Pimples
- Diet
- Genetics
- Over Washing the Face with Cleanser.



MATERIALS AND METHODS

Collection of plant material :-

Aloe vera, Neem, Tulsi leaves were collected from the local plants.

Excipients and herbal ingredients and their roles

Table: 1 Role of ingredients.

Sr.No.	INGREDIENTS	ROLES
1	Aloe Vera	Anti-ageing, reduce acne and pimples
2	Neem	Relieves skin dryness promote wound healing
3	Tulsi	Antibacterial, add glow to the face
4	Bees wax	Thickener and improves texture
5	Borax	Alkaline agent
6	Methyl Paraben	Preservative
7	Liquid paraffin	Lubricating agent
8	Ethanol	Penetration enhancer, vehicle
9	Distilled water	Vehicle
10	Rose water	Fragrance



Figure : Chemicals used in the preparation

Extraction Processes

i. Aloe Vera gel

Mature, healthy and fresh Aloe Vera leaves were collected and washed with distilled water. Then after proper drying of leaves in hot air oven, the outer part of the leaf was dissected longitudinally using a sterile knife. Then the Aloe Vera gel that is the colorless parenchymatous tissue was removed using the sterile knife. Then it is filtered using muslin cloth to remove the fibers and impurities. Then the filtrate or the filtered product which is a clear Aloe Vera gel was used in the preparation.

ii. Extraction of neem leaves

Extraction of neem leaves Neem leaves were collected and washed with distilled water and dried in hot air oven. After proper drying, leaves were powdered. Then 2.5 g Neem leaves powder+30ml of ethanol was taken in a volumetric flask and shaken for few hours on laboratory stirrer. Then the solution was heated on a water bath at 80-100 °C and concentrated up to 15 ml and then filtered using muslin cloth to remove impurities. Then the filtrate or filtered product obtained, which is a clear solution or clear extract of Neem leaves, was used in the preparation.



Figure :- Filtration

iii. Extraction of Tulsi leaves

Tulsi leaves were collected and washed with distilled water and dried in hot air oven. Then after proper drying, the leaves were powdered. Then 0.5 g Tulsi leaf powder+10 ml ethanol was taken in a volumetric flask and then shaken for few hours on laboratory stirrer. Then the solution was heated on water bath at 80 to 100 °C and then concentrated up to 5 ml and filtered using a muslin cloth to remove impurities. Then the filtrate or the filter product in which a clear solution or clear extract of Tulsi leaves used in the preparation.

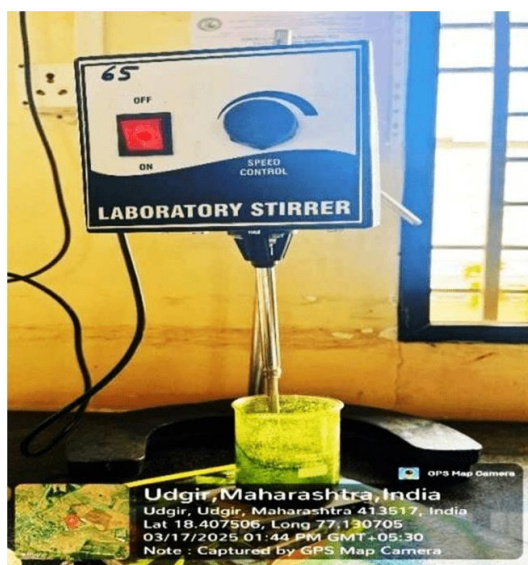


Figure :- Stirrer Figure :- Heating Mantle



Formulation of Anti Acne Face Cream: 1

Heat liquid paraffin and beeswax in a borosilicate glass beaker at 75 °C and maintain that heating temperature. (Oil phase).

In another beaker, dissolve borax, methyl paraben in distilled water and heat this beaker to 75°C to dissolve borax and methyl paraben and to get a clear solution. (Aqueous phase).

Then slowly add this aqueous phase to heated oily phase and add 20 ml of chloroform .



Then add a measured amount of aloe Vera gel, Neem extract, and Tulsi extract and stir vigorously until it forms a smooth cream.



Then add few drops of rose water as a fragrance.



Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab method of preparation of cream.

Formulation of Anti Acne Face Cream: 1



Figure:- Formulation of Anti Acne cream F1

Sr. No.	Ingredients	Quantity
1.	Aloe Vera	2.5 ml
2.	Neem	5 gm
3.	Tulsi	1 gm
4.	Bees wax	3 gm
5.	Liquid Paraffin	10 ml
6.	Borax	0.3 g
7.	Methyl Paraben	0.03 g
8.	Distilled water	Q.S
9.	Rose water	Q.S
10.	Chloroform	20 ml



Formulation of Anti Acne Face Cream: 2

Heat liquid paraffin and beeswax in a borosilicate glass beaker at 75 °C and maintain that heating temperature. (Oil phase).

In another beaker, dissolve borax, methyl paraben in distilled water and heat this beaker to 75°C to dissolve borax and methyl paraben and to get a clear solution. (Aqueous phase).

Then slowly add this aqueous phase to heated oily phase and add 20 ml of ethanol.



Then add a measured amount of aloe Vera gel, Neem extract, and Tulsi extract and stir vigorously until it forms a smooth cream.



Then add few drops of rose water as a fragrance.



Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab method of preparation of cream.

Formulation of Anti Acne Face Cream: 2



Figure :- Formulation Of Anti Acne Cream F2.

Sr. No.	Ingredients	Quantity
1.	Aloe Vera	1.5 ml
2.	Neem	2.5 gm
3.	Tulsi	0.5 gm
4.	Bees wax	2.5 gm
5.	Liquid Paraffin	10 ml
6.	Borax	0.2 g
7.	Methyl Paraben	0.02 g
8.	Distilled water	Q.S
9.	Rose water	Q.S
10.	Ethanol	20 ml



Evaluation of Cream :

Evaluation of Anti Acne herbal cream was following :- Physical evaluation formulate herbal cream was further evaluated by using the following parameters such as physical parameter, color, odor, consistency, state of the formulation.

1. **Color:-** The color of anti acne cream was observed by visual examination. The color of cream is faint green.
2. **Odor:-** The odor of cream was pleasant .
3. **State:-** State of cream was examined visually. The cream was solid in state .
4. **Texture:-** The texture of the cream was smooth.

Table 2 :- In this test color, odor, texture, and state of the two formulations was checked.

Sr. No	Parameters	Formulation 1	Formulation 2
1	Color	Dark green	Faint green
2	Odor	Pleasant	Pleasant
3	Texture	Hard	Smooth
4	State	Semisolid	Semisolid

Washability:- Wash ability test was carried out by applying a small amount of cream on the hand and then washing it with help of tap water. Formulation 2 were easily washable.

Table 3 :- Washability of two formulations was checked.

Sr. No.	Formulations	Wash ability
1	F1	Easily Washable
2	F2	Easily Washable

pH:- According to the results, the pH of two formulations that is F1 and F2 were found to be nearer to skin PH so it can be safely used on the skin. pH of the cream was checked with the help of pH meter. Ideal pH of cream is 4.5 -5.5.

Table 4:- pH of Anti Acne cream was checked.

Sr.No	Formulation	pH
1	F1	6.7
2	F2	6.5

Consistency:- The formulation was examined by rubbing cream on hand manually. The cream having smooth consistency.

Table 5:- Consistency of two formulations was checked.

Sr. No.	Formulations	Consistency
1	F1	Hard
2	F2	Smooth

Spread ability :- Spread ability is carried out for two formulations that is F1 and F2. The formulation F2 takes less time for better the spread ability. Take a glass slide and apply the formulated cream to check the spread ability of the cream. The cream spread easily on the glass slide therefore according to statement F2 had better spread ability.



Figure:- Spread ability test on glass test.

Table 6:- Spread ability of two formulations was checked.

Sr.No.	Formulation	Spread ability
1	F1	Easily
2	F2	Easily

Irritancy :- Mark the area on left hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy or reaction on the skin. According to the results all two formulation that is F1 was irritant and F2 showed no sign of irritancy.

Table 7:- Irritancy of Anti Acne face Cream.

Sr.No.	Formulations	Irritant Effect
1	F1	Irritant
2	F2	Null

Phase separation:- Prepared cream was kept in a closed container at a temperature of 25°C away from light. Then phase separation was checked for 24 Hrs. Any change in the phase separation was observed/checked. According to the results no phase separation was observed in two formulations.



Figure :- Evaluation Of Phase Separation.



Table 8:- Spread Ability of two formulations was checked.

Sr.No	Formulation	Phase separation
1	F1	No phase separation
2	F2	No phase separation

11. **Greasiness:-** Here the cream was applied on the skin surface in the form of smear and checked if the smear was oily or grease-like. According to the results, we can say that formulation F1 were greasy and formulation F2 were non-greasy.

Table 9:- Greasiness of the two formulation is examined.

Sr.No.	Formulation	Greasiness
1.	F1	Greasy
2.	F2	Non-greasy

Results and Discussion :

Formulation and Evaluation of Anti - Acne Herbal Cream is as follows :

Physical Characteristics

- Appearance : F1 dark green and F2 Faint green
- Odor : F1 and F2 possess pleasant odor
- Consistency : F1 Hard and F2 Smooth
- pH : F1 6.7 and F2 6.5 (skin-friendly).
- Spreadability : Both formulations F1 and F2 are easily spreadable on skin
- Greasiness : Formulation F1 were more greasy than F2 formulation
- Irritancy : Formulation F1 causes irritancy while formulation F2 was non - irritant.

CONCLUSION :-

By using Aloe Vera gel, Neem and Tulsi the cream showed a multipurpose effect and all these herbal ingredients showed significant different activities. Based on the formulations F1 and F2 were stable at room temperature and can safely used on the skin. In this research two formulations of Anti Acne herbal cream were prepared and evaluated on the basis of their physiological properties like color, odor, pH, spread ability, consistency, washability. The formulation were contain herbal ingredient like Neem, Tulsi, aloe vera and rose water. From the evaluation studies it was concluded that the prepared formulation underwent satisfactory results tests for color, smell, consistency, pH, spread ability and washability. Comparatively the F2 formulation was more spreadable than F1.

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