



“FORMULATION AND EVALUATION OF ANTI ACNE AND ANTI OXIDENT CREAM”.

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Abstract: Pimple, acne, sunburn mark and pigmentation are issues that affected every individual at least that once during life time. Consumer have begun to search for a product that can cure the skin issues and grant them with good and healthy skin such as Anti-acne cream. To formulate and evaluate cream using turmeric to give anti-acne and glowing effect. The cream was prepare by using cream base that is bees wax, liquid paraffin, borax, distilled water, rose oil. Herbal cream are the preparation used by human being in the treatment of various diseases or the infections. Although the increase number of cosmetic preparation containing antioxidant, sun protection, moisturizing agent due to their action preventing the process of skin aging. There is need to develop, herbal formulation in order to obtain safe, stable and multifunctional high efficient quality product. Nevertheless, most of cream are available in market contains lots of chemicals that may have some kind of side effects to the consumer. The present study was to develop, and evaluate and compare the hydrating, erythema and sun protection of the herbal w/o cream as comprises extract of natural product from Aloe Vera and turmeric given in appropriate concentration. The different types of formulation in cream of water in oil were formulate by the different concentration of the natural drug. The evaluation of the all formulation were done on different parameters like pH, viscosity, spread ability and stability will be examine. The Formulation showed good Spread ability there is no evidence of phase separation and easy to removal. There is no redness, edema, inflammation and irritation during irritancy study. These formulation are safe to use for application to check the other parameters. These studies suggest that composition of extract and the base of cream of given formulation is more appropriate, stable and safe.

Key Words: Anti-acne, Aloe Vera, W/O cream, Hydration, Erythema, Photo protection, etc.

1. INTRODUCTION:

Cream is defined as semisolid which are oil in water (o/w) or water in oil (w/o) type and these semisolid emulsions are intended for the external application. Cream is classified as oil in water and water in oil emulsion.^[1] It is applied on outer part or superficial part of the skin and its main ability is to remain for a longer period of time at the site of application. The function of the cream is to protect the skin against different environmental condition and give soothing effect to skin and treat any infection as well as tan and acne. There are different types of the creams like cleansing, cold, foundation, vanishing, massage, hand and body cream. The main aim of our work is to develop herbal cream which can give effect like reduce acne and skin irritation, wrinkles and also adding glow to the skin. ^[2,3]

Acne is a disturbing issue especially for teenagers and adolescence according to global statistics approximately 85% of population will suffer this skin issue at age around 12-25 years, nearly 8% adult at age 23-24 years old and only 3% of adult having acne at age 35-44 years old.^[4] Propionibacterium acne and staphylococcus aureus were responsible for acne since the presence of this bacterium in the sample isolated from acne patient at the same time, the increasing number of resistance of acne inducing bacteria towards the antibiotic is a worrisome problem. ^[5] The interest of consumer towards the natural bioactive compound has a functional ingredient in the cosmetic product has arisen due to their various health beneficial effect. Beside their nutritional and sensorial properties also their potential effect in improving skin health has been recognized has acting as protective agent. Although, some skin issue can categorized as self- limiting but it also can give negative psychosocial consequences to individual by having low self-estimable social withdrawal due to embarrassment and at the worst scenario it can leads to suicidal ideation. ^[6]

We have used to herbal ingredient in our preparation which are Aloe Vera extract and turmeric extract. Aloe Vera is used as moisturizer and anti-acne. Also used for treatment of burn wound. Aloe Vera is first active ingredient and turmeric is the second one. Curcumin shows the many other properties such as wound healing, sun damage protection, aging treatment and also treat chronic skin diseases. The rose oil is used as fragrance. We are try to make a effective cream which is suitable to all skin type. ^[7]

2. MATERIAL AND EQUIPMENT:

2.1. MATERIAL:

Table No : 1 Material for Anti Acne Cream .

Sr. No	Material
1	Aloe Vera extract.
2	Turmeric extract .
3	Bees wax.
4	Liquid paraffin.
5	Borax.
6	Methyl paraben.
7	Rose oil.

2.1.1. ALOE VERA:



Dig. No.1: Aloe Vera

- I) **Synonym** : Ghrit kumari.
- II) **Family** : liliaceae.
- III) **Chemical constituents** : Anthracin glycosides, barbaloin or aloin isobarbaloin.
- IV) **Use** : Anti- acne.

2.1.2. TURMERIC:



Dig. No. 2: Turmeric.

- I) **Synonym:** Haldi.
- II) **Family:** Zingiberaceae.
- III) **Chemical Constituents:** Curcumin, Demethoxy curcumin, Bisdemethoxy curcumin.
- IV) **Use:** Anti-oxidant.

2.2 EQUIPMENT:

Table No. : 2 Equipment.

Sr. No.	Equipment
1	Slab.
2	Spatula.
3	Viscometer.
4	Spreadability slide.

3. METHODS OF PREPARATION:

3.1. SELECTION OF HERB:

The herb used in multipurpose formulation in Aloe Vera and turmeric using ethanol for the extraction process. Aloe Vera and turmeric, was selected on the basis of documented literature. ^[8,9]

3.2. PREPARSTION OF EXTRACT:

ALOE VERA:

Mature, healthy and fresh Aloe Vera leaves were collected and washed with distilled water. Then after proper drying of the leaves in hot air oven the part of the leaf was dissected longitudinally using sterile knife. Then the Aloe Vera gel that is the colorless parenchymetous tissue was removed using sterile knife. Then it is filtered using the muslin cloth to remove fibers and impurities. Then the filtrate or the filtered product which is clear Aloe Vera extract used in the preparation. ^[10]

CURCUMIN EXTRACT:

The extraction of first and for most step in recovery of curcumin from plant materials. All extraction methods were developed on some common objective. Conventional method is sox let extraction. Or solvent extraction is widely used. The solvent extraction of solid sample is commonly used and known as “solid-liquid extraction.” The organic solvent are used as a solvent and water has been used to extraction of curcumin from plant. ^{[11][12]}

3.3.METHOD OF PREPARATION:

To formulation and characterization of herbal cream using Aloe Vera extract.



Pre-formulation of anti-acne aloe cream.



Formulation and evaluation of anti-acne cream of Aloe Vera extract.



Fabrication and evaluation of poly herbal cream via utilizing variety of herbal extract.



Formulation and evaluation of herbal cream by using natural ingredient by simple method.

Fig. No. 1: Method of preparation.

4. FORMULA:

Table No. : 3 Formula for herbal cream formulation.

Sr. No.	Ingredient	Quantity Taken (100gm)	Quantity Given (30gm)	Use
1	Aloe Vera extract	20 ml	7.0 ml	Anti-acne
2	Turmeric extract	10 ml	4.0 ml	Anti-oxidant, Anti-bacterial
3	Bees wax	40 gm	13 gm	Base
4	Liquid paraffin	10 gm	5.0 gm	Emollient
5	Borax	2.5 gm	0.5 gm	Alkaline agent
6	Methyl paraben	5.8 gm	1.2 gm	Preservative
7	Rose oil	Q.S	Q.S	Fragrance, Moisturizing agent

5. FORMULATION :

In borosilicate glass beaker liquid paraffin and bees wax and heated together at temperature 75°C. (oil phase)

In another beaker dissolve borax and methyl paraben in distilled water and heat at temperature 75°C. (aqueous phase)

Add slowly aqueous phase in oily phase.

Then add measured amount of Aloe Vera extract and turmeric extract.

Stir it vigorously until it forms a smooth cream.

Then add few drops of rose oil.

Then put this cream on the slab and then add few drops of distilled water.

If necessary then the water will be add.

Then the cream mix in a geometric manner on slab to give smooth texture.

Mix all the ingredients properly.

The preparation of the cream is done.

Fig. No. 2: Formulation.

Heat liquid paraffin and bees wax 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 dissolve borax and methyl paraben and to get a clear solution (aqueous phase). The slowly add this aqueous phase to heated oily phase.^[13] ^[14] Then add measured amount of Aloe Vera extract and turmeric extract and stir vigorously until it forms a smooth cream. Then add few drops of rose oil as fragrance. Put this cream on the slab and add few drop 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 ingredient properly this method is called as slab technique method of preparation of cream.^[15]



6. EVALUATION :

6.1. PHYSICAL EVALUATION :^[16]

In these test the cream was observed for the colour, odour, texture, state.

Table No.: 4. Physical Evaluation.

Sr. No.	Parameter	Observation
1.	Colour	Faint yellow .
2.	Odour	Pleasant.
3.	Texture	Smooth.
4.	State	Semi-Solid.

6.2. IRRITANCY :^[17]

Make the area (1 cm²) on the left hand dorsal surface. Then the cream was applied to the area and the time was noted. Then it is checked for irritancy, erythema and edema if any for an interval up to 24 hour and reported.

Table No. : 5 Irritancy test observation.

Sr. No.	Test	Observation
1	Irritant effect	Nil
2	Erythema	Nil
3	Edema	Nil

6.3. WASHABILITY:^[18]

A small amount of cream is applied on the hand and it is then washed with tap water.

Table No. : 6 . Washability test observation.

Sr. No.	Test	Observation
1	Wash-ability	Easily wash

6.4. pH:^{[19] [20]}

The pH was determined by using pH paper. The pH found basic nature.

6.5. PHASE SEPARATION:

Prepared cream was kept in the closed container at temperature 25-100⁰ C away from light. Then phase separation was checked for 24 hours for 30 days. No any change observed in cream that is no phase separation.

6.6. SPREAD ABILITY:^[21]

The spread ability was expressed in terms of time in seconds taken by two slides to slip off from the cream placed in between the slides under certain load. The time taken by the slide to slip off was noted. There is good spread ability.

6.7. HOMOGENEITY:^[22]

The formulation were tested for the homogeneity by visual appearance and by touch. The formulation produce uniform distribution of extract in cream. This was confirmed by visual appearance and by touch.

6.8. DETERMINATION OF TYPE OF SMEAR:

The test was conducted by the application of the cream on the skin surface of the human volunteer for its greasiness after application of cream on skin surface of a human. There is less greasy on skin.

6.9. DETERMINATION OF EMOLLIENCY: ^[23]

The emolliency test was performed to check the amount of residue left after the application of specific quantity of cream. There is no left over residue.

6.10. VISCOSITY: ^[24]

Viscosity of cream was done by using Brooke field viscometer at a 20 rpm with the spindle no. LV (64). The cream shows normal viscosity range that is 48890 cp.

7. RESULT AND CONCLUSION:

7.1. RESULT:

The herbal anti-acne face cream was prepared by using w/o emulsion method using crude drug including aloe extract and turmeric extract are used and developed formulation and passing all the evaluation parameter like physical evaluation, pH, irritancy, wash ability, homogeneity, type of sebum, emolliency of the prepared herbal cream by using aloe and turmeric extract.

7.2. CONCLUSION:

Nowadays herbal cosmetics are gaining popularity among there is a growing demand for herbal cosmetic in the world market and they are invaluable gifts of nature. By using Aloe Vera extract and turmeric extract the cream showed anti-acne effect and these herbal ingredients showed significant result the formulations were stable at room temperature and can be safely used on the skin. Formulation of cream was done by slab method. These cream is non- irritant and easily washable. The cream is formulated from natural origin, it must have less side effect as compared to the marketed synthetic cream. The cream can be spread easily and it gives its effect. It is less greasy and no left over residue of the cream. The odour of rose oil make cream more pleasant. The texture is so smooth and it also act as a moisturizer and gives glow to the face.

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