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Formulation and Evaluation of Turmeric Cream

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Abstract: *Herbal cosmetics are the preparations that are used to beautify and enhance the human appearance and smell of the human body. The word Cosmetics is derived from the Greek word "adorn". These are the products that are used to improve one's look and that provide the moisturizing, nourishing and treating various skin diseases. There is an increase in demand of plant based medicine, cosmetics, food products, food supplements and many pharmaceuticals products.*
The cream is o/w type of emulsion. The preparation and evaluation parameter both are influenced by the method of preparation. It shows anti-inflammatory, anti-oxidant, anti-microbial properties.
The demand for herbal cosmetics is increasing on the world market and is priceless gifts of nature..

Keywords*:* Curcuma longa, commonly called turmeric, belongs to Zingiberacea family and is derived from rhizomes. Cold cream, skin,Topical drug delivery system. Curcumin is known to have good anti-inflammatory and skin protective effects. It is used to treat herbal Infections

I. INTRODUCTION

To extract, purify,isolate curcumin from the Curcuma Longa plant and then create an herbal moisturizer that contains curcumin Curcuma Longa is the member of the Zingiberaceae family,turmeric is derived from their rhizomes. Curcumin is used to improve health and to treat many diseases. Herbal cosmetics are usually preferred because they have fewer or no side effects and are more effective when used than synthetic products, Used as a beauty products,these herbal cosmetics help improve and condition the skins properties, increase skin thickness, reducing elasticity, skin damage, and other problems caused by environment.

Curcumin also exhibit indirect antioxidant properties through the reduction of various cytoprotective proteins, including catalase,gamma- glutamylcysteine ligase, and glutathione S - tranferase. Curcumin has anti- inflammatory and anti-proliferative effects.The Ayurvedic system of medicines was one of the treatmentsof management of various disease and diseased state.The botanical ingredient present influence biological function of skin and provide nutrients necessary for the healthy skin. The emulsion is of w/o type unlike the o/w type of vanishing cream so called because they seem to disappear when applied to the skin.

Skin aging is the result of continual deterioration process because of damage of cellular DNA and protein. Aging process is classified into two distinct types, i.e. ‘’sequential skin aging “and ‘’ photo-aging ‘’. Curcumin is known for its inhibitory effects on bacteria such as Escherichia coli, staphylococcus aureus, and salmonella.

A study found the relationship between digging capacity and curcumol content. This report additionally, ethanol extract may show greater protection against free radicals in mice by activating antioxidant enzymes such as catalase, superoxide dismutase, glutathione peroxides. Studies have shown that this herb as protective effect against HIV.

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Fig: Turmeric

II. CHEMICAL CONSTITUENTS

Major Chemical Constituents: Curcumin, (Curcumin 2 demethoxycurcumin), bis- demethoxycurcumin and cyclocurcumin. It contains 5% volatile oil. Other chemical constituents are ketones and alcohols, cineole and zingiberene.

2.1. Identification Test

2.1.1. Test for Carbohydrate:

Molish Test:

To the test solution and few drops of alcoholic alpha napthol then add few drops of concentrated sulphuric acid through side of test tubes purple to violet colouring appears at the junction.

Barford Test:

1ml of test solution is heated with 1ml Barford reagent on water bath, if red cupricoxide is formed, monosaccharide is present. Disacccharide on prolong heating (about 10 min may also cause reduction.

2.1.2. Test for Ketone:

Volatile Oil:

*Drug+ alc. Solution Sudan 3 gives red colour due to globules indicates presence of volatile oil.

*Drug+ drop of tincture of alkane gives red colour.

(b) Sodium Nitroprusside Test:

Dissolve sodium nitroprusside in distilled water in a clean test tube. Add 1ml of the given organic compound to be tested.

Shake well and add sodium hydroxide solution drop wise. If there is the appearance of red colour then the presence of Ketone is confirmed.

2.1.3. Test for curcumin:

*Powder drug+ Sulfuric acid gives a crimson colour.

*Aqueous solution of turmeric + Boric acid gives a reddish brown colour which when addition alkali changes to greenish blue.

* Drug + acetic anhydride + concentration sulphuric acid gives violet colour when this test observed under UV light red fluorescence is seen.

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III. MATERIALS AND METHODS

3.1. Preparation of crude alcohol extract:

Take 5 gram of turmeric, put it in an Erlenener flask, add 100 ml of ethanol, and then close the lid of the Erlenener flask. Aluminumcoil. This mixture is then softening for 5 days.

Preparation of oil phase Place stearic acid (18%) and lanoline in a porcelain plate and melt the mixture at 700C.

3.2. Prepare the water phase

Heat water, glycerin and borax at the same temperature as melted stearic acid and lanolin. Mix the oil phase with the water phase by stirring constantly. Preservatives and flavors added. Mix them well to obtain homogeneous products.

Sr.No.	Ingredients	Concentration	Role
1	Turmeric	16%	Antiseptic
2	Strearic Acid	18.0g	Solubilizer
3	Glycerine	3.0g	Moisturizer
4	Lanolin	2.0g	Lubricant
5	Borax	1.0g	Emulsifier
6	Water	Up to 80ml	Vehicle
7	Preservative	1.0g	Preservative
8	Perfume	q.s	Fragrance

3.2. Methods of preparation

Slab Method:

The components are mixed until a uniform preparation is attained. One small scale, as in extemporaneous compounding, other will use and ointment mill. If components of an ointment react with metal hard rubber spatula may be used. Put this cream on the slab and few drops of the distilled water if necessary and mix the cream in geometric manner on slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called a slab technique or extemporaneous method of preparation of cream.

Fig: Ointment slab

Titration Method:

Use for finely divided in soluble powder particle or liquid. Insoluble powder is added by geometric dilution. Liquid is added by making well in centre and avoid air pocket formation. Reduce a solid medicament to fine powder medicaments is mixed with small amount of base on ointment slab with a stainless steel spatula until the homogenous product is formed.

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Fusion Method:

Fusion is the act or procedure liquefying or melting by the application of heat. By fusion method, all or some of the components of an ointment are combined melted together and cooled with constant stirring until congealed. Highest melting point should be melted first low melting point next. Ointment base are melted decrease order of their melting point. This avoid overheating of substance of low melting point incorporate medicaments slowly to the melted mass stir thoroughly until mass cool down homogenous products is formed.

IV. FORMULATION

Turmeric extract was made by cold macerating technique. Take 200mg of turmeric in a conical flask to which adds 500 ml water (H2O).

Cover the mouth of flask by cotton plug.

Keep the mixture of the turmeric aside for 72 hrs. With occasional shaking.

Then filter the solution and dry the filter to dryness.

Melt of the beeswax in a China dish on hot plate at a 70oc.

Then in a 100ml beaker borax was dissolved and heated along with olive oil on the 0.4 hot plate at 70oc.

To an oil phase is added drop wise with constant starring until it comes to 45oc to 50oc. Then to this mixture of the herbal drug and perfume are added with constant starring.

4.1. FORMULATION

Take 200 gm of turmeric + 500 ml of water

↓

Cover the mouth of flask by cotton plug

↓

Keep mixture aside for 72hr.

↓

Filter the solution and dry

↓

Melt beeswax + add liquid paraffin

↓

Heat the solution on hot plate at 70 o c Borax dissolved in 100 ml beaker

↓

Heat along with olive oil on 4 hot plate in oil phase +aqua's phase with constant starring

↓

Add herbal drug and perfume with constant starring.

Fig. Formulation of Herbal Turmeric Cream

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V. EVALUATION TEST

***Physical evaluation:**

Formulated herbal cream was further evaluated by using the following physical parameter, color, odor, consistency and state of the formulation.

Color: The color of the cream was observed by visual examination. The result shown in table

Odor: the odor of cream was observed by the visual examination.

State: The state of cream was examined by rubbing visually and semisolid state.

***pH of the cream:** The pH meter was calibrated using standard buffer solution. About 19 of cream were weighted and dissolved water and check the pH of cream.

***consistency:** The consistency was check by application on the skin.

***Determination of type of smear:** This test was conducted by the application by the application of cream on the skin surface of a human voluntary for its greasiness .After application the type of smear was observed.

***Determination of emollience:**The emollient test was preferredto check the amount of residue test after the application of specific quantity of cream.

***Determination of spredability:** Spread ability may be expressed by the extent of the area to which the topical application spread when applied to the affected part on the skin. The therapeutics efficiency of the formulation also depend upon its spreading value .The spread ability can be calculated using formula.

$$S=m*L/T$$

Where,

S=Spread ability

M=weight tied to upper glass slide –length moved on a glass slaid

T= time taken

The determination was carried out in triplicates and average of three regarding was recorded.

***Viscosity:** Viscosity of the formulation was determined was Brookfield or Ostwald viscometer at 100 RPM, using spindle no. 7 at temperature at 25 o C. The determination was carried out in triplicate and the average of three reading was recorded.

***Homogeneity:** The formulation was tested for homogeneity by visual appearance and by touch.

***Washability:** The cream was applied on the hand and observed under the running.

***Irritancy:** Test marks an area ` on the left hand dorsal surface. The cream was applied to the specified area and time was noted, irritancy, erythema, edema was checked if any for regular intervals up to 24 hrs and reported.

***Removal:** The easy of removal the cream applied was examined by washing the applied part with tap water.

Advantages:

- It helps to cleanse and beatify the body without side effects.
- Increase physical strength.
- It is easy to use.
- Suitable for everyone.
- Various plant species can be added.
- It is highly nutritious and contains many vitamins and minerals.
- It is natural anti- inflammatory compound.
- It is powerful antioxidant.
- It should be reduced dark circles.
- It is antimicrobial agent.
- It should help to wound healing.
- Supports immune system and moisture dry skin.

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Disadvantages:

- It is generally used in the use of drug that requires less plasma.
- May cause allergic reaction.
- Possible skin reaction due to contact dermatitis.
- Large amounts of medicine are not easily absorbed through pores of skin.
- Melabsorption may occur due to poor penetration of some drugs that require less plasma.

Applications:

- Turmeric for skin whitening.
- Turmeric for glowing skin.
- Turmeric to treat Acne.
- Turmeric to banish dark circles.
- Turmeric moisturizes dry skin.
- Turmeric for preventing early skins of aging.

VI. CONCLUSION

The purpose of this study was to develop herbal turmeric cream. The formulated cream showed good consistency, spread ability, homogeneity, pH, etc. It is safe to use as it developed from herbal extract. This herbal turmeric is one of the good alternatives in a place of synthetic cream. The value of herbs in the cosmetics have been extensively improved in personal care system and there is greater demand for the herbal cosmetics nowdays.

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