

Formation and Evaluation of Herbal Ointment by using *Curcuma Longa* (Turmeric)

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Abstract: Herbal cosmetics products are natural beauty products that provides the useful benefits to the skin and minimum side effects. It enhances the skins natural beauty whatever the type of the skin. Ointments products in which the herbs are extracted into vegetable oils by various methods It is used in diseases of skin such as welks, bruises, burns, sprains, pimple, boils water burns, sunburns, piles and catarrh. Whenever you applied ointment to the skin it provides coolness to the skin and healing properties. It nourishes the skin.

Keywords Herbal ointment, *Curcuma longa*, Maceration, Alzheimer, Skin burns, Herbal products

I. INTRODUCTION

Ointment are homogeneous and viscous mixture of semisolid. Mostly in greasy and oily in nature with high viscosity. It is external application on skin and mucous membrane. Ointments consist of a base, which acts as a carrier or vehicle for the medicaments. Ointment bases have been oleaginous in nature. It include hydrocarbons such as petrolatum, beeswax, and vegetable oils. The several purpose of these preparation, e.g. as protectants, antiseptics, emollients, antipruritics, keratolytics and astringents. The herbal ointment are used because no side effects and effective remedies. The extract turmeric rhizome (*Curcuma longa* Family-Zingiberaceae) is used in herbal ointment. The turmeric consist of dried and fresh rhizome of plant known as *Curcuma longa*. Family-Zingiberaceae. It is used as antiseptic, expectorant, spice. It is rich in antioxidants. Turmeric are used in the treatment of arthritis, liver diseases, Alzheimer and Depression management.

1.1 Types of Ointment

There are two types as following

1. Medicament ointment:- It is application of skin for protective, therapeutic, or prophylactic purpose.
2. Non- medicament ointment :- It is used as physical effect of skin as protectant, emollients, or lubricants.

1.2 Properties of Ointment

1. Ointment should be chemically and physically stable.
2. Ointment should be smooth and free from grittiness.
3. Ointment should melt or soften at body temperature and be easily applied.
4. The ointment base should be non-irritant and should have no therapeutic actions

1.3 Uses of Ointment

1. Protects skin from acne, pimples, blemishes & other skin problems.
2. Used in diseases of skin such as welks, bruises, burns, sprains, pimple, boils water burns, sunburns.
3. It Lightens, brightens uneven skin tone.
4. Antiseptic properties Cures the skin and heals it.

1.4 Types of Ointment Base

A. Hydrocarbons/Oleaginous Bases

a) Characteristics

- It is anhydrous.
- This base are insoluble in water
- It not water washable.
- It form occlusive film on skin.

b) Application

- It incorporation of hydrophobic drugs

c) Examples

- Wax
- Synthetic ether like glycerol monostearate

B. Absorption Base

a) Characteristics

- It is not easily water washable
- It has w/o emulsion that allows incorporation of aqueous solution to form w/o emulsion.

b) Application

- It is emollients.

c) Examples

- Aqueous like hydrophilic petrolatum and anhydrous lanolin.

C. Emulsion Base

a) Characteristics

- It is o/w type emulsion.
- It leave hydrophobic film on the surface of the skin.

b) Application

- It is drug carrier
- It foundation for makeup

c) Examples

- Hydrophilic Ointment
- Vanishing cream

D. Water Soluble Base

a) Characteristics

- It is Hydrophilic polymer mixture

b) Application

- It is drug carrier.

c) Example

- Propylene glycol + ethanol with 2 % w/w HPC.

II. MATERIAL AND METHOD

2.1 Collection of Plant Material

Dried rhizomes of turmeric are purchased. Turmeric is orange-yellow & is stored in a cool & dark place. The turmeric extract contains 95% curcumin.

2.2 Preparation of Turmeric Extract

Dried rhizomes of turmeric were ground into powder form. 100gm powder was added with 350ml of 90% ethanol for 3hrs. and transferred to percolator with added 150ml of 90% ethanol for maceration for 7 days with infrequently stirring. Finally ethanolic extract was collected. The extract are crimson red colour was obtained and stored at cool and dark place in air tight container.

2.3 Method of Preparation of Ointment

Preparation of ointment is based upon the nature ingredients. Ointment are prepared by following method as

1. Incorporation
2. Fusion

A. Incorporation

By the incorporation, the components are mixed until uniform preparation are obtained. The components added using mortal pestle or spatula as small scale The finely subdivided medicament are grinded, and result increase amount of base.

B. Fusion

By the emulsion, the component are melted together also cooling with constant shifting until congealed. Ingredients are melted together in descending order of their melting points and stirred to ensure unity.

2.4 Formation of Ointment

Ingredients	Quantity taken	Role of ingredient
Dry Curcuma longa extract	0.06gm	Antimicrobial agent
Hard paraffin	0.45 gm	Emollient
Lanolin	0.45 gm	Emollient, Moisturizer
Cetostearyl Alcohol	0.45gm	Emulsion stabilizer
White soft paraffin	8.6 gm	Lubricant
Methylparaben	0.1 gm	Preservatives
Propylparaben	0.01 gm	Preservatives



Figure: Formulation of herbal ointment

2.5 Preparation of Ointments

Three topical ointment like simple ointment BP, emulsifying ointment BP and aqueous cream BP were prepared by using fusion method. Firstly, Ointments base was prepared by weighing appropriate quantity of hard paraffin. It has

been placed in the porcelain dish on water bath for melting. After the melting hard paraffin, then add other ingredients are lanolin, cetostearyl, alcohol & white soft paraffin were added. After melting, the dry Curcuma longa extract has been added to the ointment base. The powder was rubbed with small quantity of base then formed the concentrated ointment containing uniform distribution of base. Then added preservatives as Methylparaben & Propylparaben. Prepared Ointments stored in well container, labelled and packed.

2.6 Evaluation of Ointment

1. **Colour and Odour:** It is physical parameter. Colour and odour determined by visual examination.
2. **Rate of Absorption:** Interval of time, serum, urine samples are involved in drug absorption. The amount of drug absorbed per unit time is rate of absorption.
3. **Consistency:** ointment are smooth. It has no greediness are observed.
4. **Solubility:** Ointment are soluble in boiling water, ether, chloroform.
5. **Stability Study:** For physical stability of herbal ointment are carried out at various temperature like 2⁰C, 25⁰C, 37⁰ C for four weeks. The herbal Ointment are physically stable at different temperature i.e 2⁰C, 25⁰ C, 37⁰C.
6. **Washability:** The herbal ointment are applied on skin and washed by water and checked.
7. **Spreadability:** It is determined by excess sample placing between two side which uniformly spreaded at specific time. The required time for separate two slides and measure the spreadability.

III. RESULT

This is done by prepared and evaluated herbal ointment using Curcuma longa (Turmeric) extract. These extract was taken in dried form. The colour, odour, solubility, melting point, etc these properties are determined of sample. For the preparation of herbal ointment fusion method was used. The fusion method has been incorporated as it ensure uniform mixture of turmeric extract with ointment base. It also remains stable during storage. Ointment was applied on the normal and broken skin. It show no irritant effect. The physiochemical properties was studied. Ointments show accurate results for evaluation parameters such as spreadability, washability, stability studies, and solubility, etc.

Physicochemical parameter	Observation
Colour	Yellow
Odour	Characteristic
Consistency	Smooth
Spreadability	7
Solubility	Soluble in boiling water, ether, chloroform
Washability	Good

IV. CONCLUSION

The purpose of study was to prepare herbal ointment using available plant like Curcuma longa (turmeric). The turmeric are medicinal purpose like anti-bacterial, anti-cancer, anti-inflammatory, anti-fungal, etc. When prepared product spread on skin then showed no irritate effect and diffused very well and also stable in different temperature.

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