

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

FORMULATION AND EVALUATION OF HERBAL CREAM FROM TURMERIC (CURCUMIN)

Bhaveshri Mohan Wankhade¹, MR. Pathan M.N²

¹ R.P Collage of Pharmacy Dharashiv, India.

² Associate Professor R.P Collage of Pharmacy Dharashiv, India.

What is an Ayurvedic Product?

Ayurvedic Projects are holistic remedies based on ancient Indian traditions, incorporating herbs, spices, and natural components. Keywords: Turmeric Extract Cream, Cream Preparation Evaluation.

They intend to address health issues through a combination of lifestyle adjustments. Specific herbal medication and various treatments, such as massage, yoga, meditation





What is cosmetic?

Cosmetics are easily available commercial commodities that aim to enhance appearance. Herbal cosmetics containing therapeutic plants are gaining popularity due to their effectiveness in reducing oil secretion, reducing wrinkles, and treating acne. Formulations for skin protection, subscreen, and antiaging are available to address various skin conditions.



ABSTRACT :

Curcuma longa, widely known as turmeric, belongs to the family of zingineraceae, and Curcumin, derived from rhizomes, is known for its antiinflammatory and skin-protecting qualities. Traditionally, curmin is used in various natural Herbal therapies for skin infections and inflammation.Ingredients include stearic acid, turmeric extract, cetyl alcohol, propylene glycol, glycerine, methyl paraben, vitamin E, sodium lauryl sulfate, almond oil, and the required amount of Distilled water was utilized to make the cream. The skin's pH (6-8-7) was then maintained by applying the produced mixtures. It is used in a variety of applications and has been traded internationally due to its health-promoting properties.Were used to manufacture the cream, which were examined for skin irritation, spreadability, PH, and physical appearance.





Introduction of Turmeric

Turmeric (Curcuma Longa)Turmeric is a remarkable plant whose botanical name is Curcuma longa L and it belongs to the ginger family. Turmeric is native to southwest India, which is where its roots originate.



Turmeric's vivid yellow color comes from its roots. It is used as a spice and dye. The usage of turmeric rhizome and other plant derivatives that produce yellow colored pigments is becoming increasingly widespread as a natural compound's synthetic addition is removed. Turmeric rhizome is commonly used as a coloring agent in sauces and processed foods.



One of nature's most important resources.

Turmeric is a prominent therapeutic and fragrant plant with huge anticipated potential in the field of natural color medicine. Personal care and cooking spices Turmeric rhizome has been utilized for many years in a variety of applications and has been traded internationally because of its health-promoting properties. Turmeric's unusual yellow-orange color and strong flavor profile have created business opportunities for international culinary supply chains.

Scientific classification:

1) Curcuma longa

Curcuma longa is	known by its botanical name.
Order:	Zingiberales
Local name is	Haldi.
Family:	Zingiberaceae
	Martinov
	Family: Ginger
Plantae is the kingdom	of plants.
Tracheobionata	is a sub-kingdom.
Supergroup:	Spermatophyte
Division:	Magnoliophyta
Genus:	Curcuma

Class:	Liliopsida
Sub-class:	Zingiberidae.



Chemical constituents:

Curcumin, which accounts for 2–5% of the plant weight, is one of the numerous bioactive components in turmeric that are widely known for their health benefits. It has antibacterial, anti-inflammatory, and anti-oridant properties, among others.

2) Almonds.

Botanical name	: Prunus dulcis (Almond)
Sales	Order
Local name:	"Badam".
Family:	Rosaceae
Kingdom	: Plantae
Sub-Kingdom	Eukaryota
Division	Magnoliphyta
Super-Division	Prunus dulcis
Prunus	Genus
Class	Magnoliopsida
Sub-class:	Roseidae.



The chemical composition of almonds.

Almonds include both macronutrients (lipids, proteins, and carbs) and micronutrients (minerals, vitamins).



Properties:

Almonds are a nutritious food that contains healthy fats, protein, fiber, and essential vitamins and minerals like vitamin E, magnesium, and calcium. They offer several health benefits, such as heart health, blood sugar control, and weight management.

3 Rose Botanical Name: Rosales.

Botanical Name:	Rose
Order:	Rosales
Local Name	Gulab
"" Family:-	Rosaceae
kingdom:	Tracheobionta
(sub-kingdom):-	Spermatophyta
division	Magnoliophyta
Genus	Rosa
Class:	Magnoliophyta
Subclass:	Rosidae



Chemical Constituent Rose:

The main chemical components of rases are a complex mixture of volatile substances, primarily esters and terpene alcohols. **PROPERTIES**

- 1) Rose has a variety of advantageous features, such as anti-inflammatory, anti-oridant, and antibacterial properties.
- 2) They are also well-known for their ability to help with digestion, reduce stress, and prevent aging.
- 3) Vitamins, minerals, and phytochemicals found in rose petals contribute to their many health advantages.



4) Vitamin E Supplement

The body needs vitamin E, which belongs to a class of drugs called anticoagulants, to boost the immune system and aid in blood coagulation. The scientific term for these supplements is copherols and cotrienols, and they have been shown to lessen the appearance of wrinkles and fine lines.

PROPERTIES

1) Because of its antioridant properties, vitamin E has been shown to be highly helpful in preventing and reversing a number of disease consequences.

- 2) Its function in anti-inflammatory mechanisms
- 3) Its immune-boosting properties and suppression of platelet aggregation

The characteristics and structure

1) Acid stearic

The molecular weight of	C18H3602
is	284484 glmol
Density at	20°C: 0.9408 glcm3
; meeting point:	c69.3 c
Boiling point:	361
appearance	White solid appearance with a greasy smell
solubility	Its solubility in water is insoluble.



2) Formula for Cetyl Alcohol

Chemicals:	C3H60
Molecular Weight	: 102.13g/mol
Density	811kgm3
meeting point:	49.3°C
Boiling point:	78.37 °C
appearance	: LookWaxy, white solid
solubility	It dissolves in organic solvents like oil and alcohol
	but not in water

3) Glycerine

molecular weight is	92.09382g/mol
chemical formula is	СЗН802.
Density:	1.26 glcm ³
the melting point.	17.8°C
Point of Boiling:	290 C
appearance	LookIt is colorless, transparent, and odorless
Solubility	It dissolves easily in both alcohol and water





4) methyl paraben

molecular weight	152.15g/m
density is	1.383g/cm3
Point of Melting	125–128 °C
Point of Boiling:	270–280°C
appearance	LookPowdered white crystals
Solubility	It dissolves readily in a variety of organic solvents,
	including oils, waxes, and fat alcohol, and is soluble
	in water.

5) propylene glycol

The chemical formula for propylene	C3H802
glycol is	
Weight in molecules	76.09g/mol
Density:	1.04 grams per centimeter
Point of meeting:	: -58
Point of boiling	188.2 C
appearance	LookIt is a transparent, colorless, and nearly odorless
	liquid
Solubility	It dissolves quite well in water

6) sodium lauryl sulphate

The chemical formula for sodium	Nac12H2ss04
lauryl	
Weight in molecules:	288.38 glmol
Density	1.01 grams per cubic centimeter
Point of meeting	206c
Point of boiling	216 c
Organization	LookIt is a crystal with a white or cream hue

* <u>Creams</u>,

Creams, which are semi-solid emulsions administered topically for medical, cosmetic, and skincare purposes, have their water and oil phases stabilized by emulsifying agents. Creams are semisolid dosage forms that usually contain less than 50% hydrocarbons, waxes, or polyols as carriers, and more than 20% water or volatile ingredients. Furthermore, they may contain one or more pharmaceutical ingredients dissolved or dispersed throughout a suitable cream foundation. This term has historically been used to characterize semisolids with a somewhat fluid viscosity that are made as water-in-iol (like cold cream) or oil-in-water (like fluocinolone acetonide cream) emulsions.









APLLICATION OF HERBALS CREAM

- Using herbal cream can help reduce sunburn,
- increase skin hydration retention,
- smooth out rough skin,
- reduce wrinkles,
- and treat skin conditions including acne and scars.

ADVANTAGES

Benefits

- 1. They often trigger fewer unfavorable emotions due to their inherent composition.
- 2. Herbal creams consider the relationship between overall health and skin health, and
- 3. They offer formulation flexibility to target specific skin conditions.
- 4. Herbal creams made from plants that are high in vitamins and antioxidants nourish and renew the skin.

Table 2: Biological Activities of Extract and Compounds from Turmeric

Compounds and extracts	Biochemical Activities
Alcoholic extract, aqueous extract	Healing of Wounds
and powdered turmeric anti-fertility	Antimicrobial and antifertility
Ar-turmerone	Anti-venom
Antioxidant or Bis-demethoxycurcumin	, antioxidant
Chloroform or crude etheric extracts	, antioxidant
Curcumin	antibacterial, antiprotozoan, antiviral, hypolipemic, hypoglycemic, anticoagulant, antioxidant, protective against tumors, and anticarcinogenic
Curcumin Alcohol	Hypolipemic, anti-inflammatory, anti-tumor, and anti-protozoan

* Creation f herbal cream formulation

Put all of the oil-soluble ingredients, such as stearic acid, cety alcobol, and almond oil, into the first broker.
Next, bring it to a boil in both the oil phase and the beaker of water at 70 to 80 degrees Celsius.

3. Then, in a separate container (Beaker B Aqueous Phase), all of the water-soluble ingredients—such as distilled water, rose water, glycerine, propylene glycol, methyl paraben, and triethanolamine—are mixed together.

4. The hot aqueous phase was gradually mixed with the oil phase while being constantly swirled until a cream formed.



Sr No	The ingredients' names	Amount Taken	The ability of the
1	Extracting Turmeric	2gm	API
2	distilled water	20ml,	vehicle
3	Stearic Acid	5gm,	to keep the skin moisturized
4	Cetyl Alcohol	2.05ml	separate oil and liquid
5	Glycerin	2ml,	moisturize,
6	Methly Propylene	0.9gm	preserve,

7	Partaben	2.5g	preserve,
8	Vitamin E Glyeol	2.25ml	antioxidant properties
9	Sodium Lauryl Sulfate	0.25g,	emulsifier
10	Almond Oil	50g	lubeant.

Table 1: Formulation of the cream base

PHYSICAL EVALUATION PARAMETER:

Herbal cream was evaluated using the following standards.

- Physical attributes,
- consistency,
- color,
- viscosity,
- washability,
- texture,
- pH determination,
- skin irritation analysis,
- and spreadability

1. Properties of an organoleptic

Color, arrangement, and appearance were among the organoleptic characteristics that were noted.

2. pH determination

At room temperature, the pH mater

3. Homogeneity determination

Visual appearance and touch were used to assess the herbal preparation's homogeneity.

4. Determine spreadability.

The term spreadability refers to the extent to which a topical application spreads after being administered to the affected area of skin. The medicinal efficacy of the herbal formulation is also affected by its spreading range, thus the created formulation's spending a A weight of 100 gm was placed over the top slide to apply the required pressure for 5 minutes, followed by the addition of about 10 gms of weight in a pan, and the upper slide was pulled with the help of a string attached to a hook; the time it took for the two slides to slip over each other by a distance of 10 cm under a certain load was noted. Here are the formulas for determining the spreadability of the prepared formulation.

S=m* L/T S- spreadabilitym- weight is affixed to the upper glass slide. - Distance traveled on a glass slide. T is the time taken. bility must be determined. The film was then squeezed to make it identical thickness.

5. Washability.

It was discovered that designed and promoted creams were easily washable with tap water.

6.The ability to spread.

The spreadability of designed and marketed creams was tested, and it was discovered that formulated cream spreads as well as marketed cream.

7. Stability Studies.

The physical stability of the formulations was investigated by placing them in a plastic or glass container and exposing them to a humidity chamber at 45 degrees Celsius. Their appearance and physical stability were monitored for 24 hours.

Results and Discussion

The current work has been finished on the formulation and evaluation of the herbal cream. A lot of characteristics are considered while evaluating cream, including its color consistency. pH Spreadability Viscosity Stability Washability and skin irritation test results

- Batch 2 formulation results

-		
Sr No	1 Specification.	• Limits.
1	Colour	The product is white and translucent,
2	Odbour	with an odor similar to turmeric cream
3	Texture	Smooth -
4	рН	5.46
5	Consistency	Thick
6	Greasiness	- Greasy
7	Grittiness	Non-gritty
8	Homogenecity	and free of aggregates.
9	Stability	After 20 days, was stable.
10	Imitancy	Not irritated.
11	Spreadability	Uniform
12	Feel on application	Cooling
13	and removal.	Easily removed.

Table 02: Evaluation parameters

Conclusion

The organoleptic properties of formulated herbal cream were evaluated, and the results were apt. Other physical parameters such as pH homogeneity, type of smear, emolliency, viscosity, and type of emulsion were also evaluated accordingly, and pH was found to be compatible with the pH of skin secretions and showed proper pH rang, that is approximately pH 6. The prepared formulation showed good spread ability and emolliency. Thermal stability experiments were also undertaken for a month, and there was no trace of separation of the aqueous and oily phases. The created cream was tested for microbiological contamination, and no sign of microbial growth was seen after the prescribed incubation period of two weeks.

REEFENCE :

- 1. Huddar SH, Anupkumar E Jadhv. A Traditional Review of Haridra (Curcuma Longa) Journal of Ayurveda and Integrant Medical Sciences 2023 May 25:8 (4): 122-7
- 2. Kokate C's textbook of pharmaceutical biotechnology, Elsevier India 2011.
- 3. Verma P. K. Kumari P Maurya RK. Kumar V Verma, RB Singh RK. Medical properties of turmeric (Curcuma longa L.) A review published in the International Journal of Chemical Studies in 2018:6(4):1354-7.
- Niranjan A Prabhash D A review journal of food science and technology published an article on the chemical components and biological activity of turmeric (Curcuma longa L). 2008 Mar. 1:45(2)109
- 5. Li S Yuan, W Deng, G Wang, P. Young, and B. Aggarwal Turmeric's chemical makeup and product quality control
- Labban L. Medical and pharmacological characteristics of turmeric (curcuma longa L.). A review in the International Journal of Pharmacy Biomed Sci. 2014;5(1):17-23.
- Ansari S. Jilani S. Abbasi; Siraj M. Hashimi; Ahmed Y. Khatoon; and Rifas AM. Curcuma Longa A wealth of medical properties. Cell Medicine, May 2020, 10(2):91-7.
- 8. Thombare S., Shirsath P. Herbal Cosmetics and Skin Car Formulation. International Journal of Pharmaceutical Sciences, 2023, 10(10), 1-10.
- 9. Panda, S. Extraction formulation and evaluation of anti-aging curcumin face cream. J Emerg Technol Innov Res. 2018;5:1369-71.
- Singh S. Zaidi SY. Maury S Formulation and Evaluation of Multipurpose Herbal Cream World Journal of Pharmaceutical Research 2022, March 29:11:798-805.