



FORMULATION AND EVALUATION OF VANISHING CREAM OF MORINGA LEAVES

**Mr. Abhijit Maroti Giri¹, Ms. Ashwini Shelke², Dr. Sunil. S. Jaybhaye³,
Dr Swati. Rawat⁴**

¹Student of bachlor of pharmacy,Badnapur ,Dist- Jalna.

²Faculty of innstitute of pharmacy ,Badnapur.

³Department of quality Assurance, Faculty of institute of pharmacy,badnapur.

⁴Department, principal Institue of Phramacy, Badnapur.

ABSTRACT

The purpose of the present research work is to formulate and evaluate vanishing herbal cream. Herbal cream offers several advantages over other synthetic creams. The majority of vanishing creams prepared from synthetic origin (for e.g., acyclovir, triamcinolone, calcipotriene, triethanolamine, etc) gives extra fairness to face, but has several side effects such as itching, burning sensation and many other allergic reactions. Herbal creams do not have such side effects and it gives natural fairness to skin. Methods carried out for the preparation of herbal creams are very simple. Firstly, oil phase was prepared which was a mixture of stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) melted at 70 °C. Secondly, aqueous phase was prepared which was a mixture of alcoholic extract of crude drugs, including moringa, , was commercially available as extracts and are used either for cosmetic purpose or for medicinal use. Glycerine (6%), perfume (0.5%), water (71%) heated at 75 °C. Then aqueous phase was added in oil phase at 75 °C with continuous stirring. Once, the procedure was completed it was allowed to cool at room temperature with continuous stirring. Perfume was added at last just before the product was transferred to suitable container. The above prepared herbal cream was evaluated and physical parameters such as pH, homogeneity by touch and visual, appearance, wash ability, consistency, patch test, irritancy test, accelerated stability studies were determined. Further studies are needed to investigate this formulation for its performance.

KEYWORDS: - Crude drugs, Evaluation, Vanishing cream, Herbal

1.INTRODUCTION

Now-a-days, herbal extracts are used in the cosmetic preparations for augmenting beauty and attractiveness. Herbal cosmetics are classified on the basis of dosage form like- cream, powder, soaps, solutions, etc. and according to part or organ of the body to be applied for like; cosmetics for skin, hair, nail, teeth and mouth etc. Creams are semisolid emulsions intended for application to the skin or mucous membrane. A low-fat moisturizer that disappears into the skin is called as a vanishing cream. It softens skin, leaving nothing behind. Vanishing cream is o/w emulsion based preparations containing aqueous Phase and oil phase. Depending on the proportion of water to grease, cream can be water miscible and washed away easily or be thick and sticky. It is perhaps the commonest prescribed topical medicament. As it is less oily, messy and Sticky, most patients find it more user friendly. The traditional systems of medicine, evolved over centuries had been responsible for safe guarding healthcare of the world until the advent of allopathic system of medicine. As the latter system used knowledge of modern biology and chemistry, for both discovery and treatment, it found fast acceptability among the users and now it occupies predominant space in the area of health care. In spite of this, the contribution of the traditional preparations, which are normally polyherbal, is increasing because of the general impression that these products are safe; while the single molecule based modern drugs used in allopathic system can have severe adverse effects. The skin is the body's first line of defence for external exposure. The signs of ageing are most visible in the skin. Although, ageing skin is not a threat to a person, it can have a

detrimental effect on the psychology of a person. Much of the premature ageing occurs as a direct or indirect result of skin's interaction with the environment. Exposure to sunlight is a recognized as a major factor in the etiology of the progressive unwanted changes in the skin appearance. Photochemoprotective agents are capable of preventing the adverse effects of ultraviolet radiation on the skin, which are caused by excessive generation of reactive oxygen species. This herbal vanishing herbal cream consists of moringa crude drug.(family- Moringaceae)

2.MATERIALS

All crude drugs were collected from Shree Gorksha College of Pharmacy & Research Centre, Khamgaon Chh. Sambhaji nagar.



1: Crude Drug Information



Fig No. 1 Moringa Leaves

Moringa oleifera L. (Family: Moringaceae) is an incredibly useful medicinal herb, possess significantly high nutritional value. It is an exceptionally healthy herb which is edible and its tree could easily and cheaply be cultivated and grown in Pakistan. It is also known as super food as it contains indigenous basis of highly digestible protein, iron, calcium, potassium, Vitamins A, C, E and polyphenols. Moringa is rich source of phytochemicals such as myricetin, phenolic substances, phenolic acids, flavonoids, isothiocyanates, tannins and saponins, quercetin, zeatin and kaempferol flavonoids which are effective antioxidants that have several therapeutic benefits. It is used as a medical herb having various health benefits. Moreover, different portions of moringa such a seed, roots, buds, leaves, flowers and bark, possess various forms of biological actions, such as anti- inflammatory, antimicrobial, anti-carcinogenic, antihypertensive, anti- hyperlipidemic, antidiabetic hepatoprotective and neuroprotective activities, that helps in the treatment of different ailments. The current review highlights the medicinal, therapeutic properties of and mechanisms of compounds extracted from *Moringa oleifera* also gaining new perspectives for further researches and advancement.

Moringa Leaves Effect on Skin

First and foremost, it rejuvenates your skin if it is dull and dry. As it is packed with antioxidants, it extremely important as free radical damage harms your skin tissues, which leads to the formation of wrinkles. Moringa has vitamin C that helps to repair damaged skin cells



Fig No. 2 Moringa Leaves of Powder

Benefits of Moringa for skin

Dating back a thousand years ago, moringa oil has been used in lotions, creams, as it quickly penetrates deep into the skin and gets working. Check out all the benefits of moringa oil for skin-

from nourishing to revitalising, here's everything you need to know about this amazing oil.

Repairs Damage

Everyday pollutants play a huge role in messing up your skin. Whether it's through harsh UV ray exposure, dust and grime, or other environmental factors, all of them penetrate deep into your skin and damage it. This results in dull, dehydrated, and unhealthy looking skin that is more prone to ageing. Moringa holds phytochemicals that act as antioxidants and reverse the damage caused by the environment

A Great Anti Ageing Agent

Due to its antioxidant properties, moringa helps tackle the signs of ageing on your skin. Since it repairs the damage caused by free radicals, it has the ability to reduce the appearance of fine lines, wrinkles and dark spots. Moringa is rich in vitamin C, which helps boost collagen levels- the result is tighter, plumper skin.

Adds A Glow

Another benefit of moringa for skin is that it adds a healthy glow to it. All the properties of moringa work together to instantly purify the skin. It perks up dull, fatigued skin, and balances out your sebum levels too. This leaves your skin with a natural glow.

Creates A Protective Barrier

Did you know that moringa oil is a mix of fatty acids that helps in maintaining your skin's protective barrier? When applied, moringa creates a protective layer on your skin- this not only keeps the determents from damaging your skin, but also locks in your skin's natural oils and prevents it from escaping.

Fights Acne

One of the biggest benefits of moringa is that it is an acne fighter. Thanks to its amazing antiseptic and antimicrobial properties, moringa oil for skin helps treat breakouts. It also regulates the production of excess sebum and keeps the bacteria away from clogging your pores. This means, bye bye breakouts!

Natural Moisturiser

Moringa is the perfect match for both dry and oily skin. Why? Because it has the ability to give you enough hydration to nourish your skin, while keeping your oil levels in check. It acts as a natural moisturiser, and softens dry skin. It's perfect for soothing conditions like dermatitis, psoriasis, and eczema.

Detoxifies Your Skin

If you're looking to detoxify your skin, moringa oil is the way forward. The high content of oleic acid, it deeply cleanses your skin from within and purifies it. Moringa also contains sulfur, which helps replenish the natural keratin in your skin.

How to Use Moringa for Skin

Looking to incorporate the benefits of moringa for skin? Here's how you can use moringa oil in your routine.

As A Clay Mask

Mix 30 ml of moringa oil, 35 ml of avocado oil, a cup of kaolin clay, and moringa leaf powder with a little bit of rose water in a



large jar. Apply it on your face and let it dry. Rinse off with warm water and don't forget to moisturise after.

As A Nourishing Avocado Mask

Mix 1 tablespoon moringa oil, ½ a mashed avocado, 1 tablespoon raw honey, and 1 teaspoon lemon juice in a bowl. Apply it evenly on your face and leave it on for 15-20 minutes. Rinse with warm water.

As A Spot Treatment

Mix ½ a mashed banana with a tablespoon of moringa powder and honey. Add a tablespoon of honey and 2 teaspoons of tea tree oil. Apply it to the affected areas for 15-20 minutes and rinse off.

As An Exfoliating Body Scrub

Grind a cup of oats into a finely milled powder. Add two tablespoons of moringa oil, 1 cup of granulated sugar, and ½ cup of coconut oil. Gently apply the mix on your body and massage it in circular motions. Rinse off and apply a body lotion after.

ADVANTAGES

Here are some advantages of using moringa in vanishing cream, broken down point by point:

1. **Antioxidant Richness***: Moringa is packed with antioxidants like vitamin C and E, which help neutralize free radicals, protecting the skin from oxidative damage and premature aging.
2. **Moisturizing Properties***: Moringa oil is lightweight and easily absorbed by the skin, providing deep hydration without clogging pores, making it suitable for all skin types, including oily and acne-prone skin.
3. **Anti-inflammatory Effects***: Moringa contains anti-inflammatory compounds that can soothe irritated skin, reducing redness and swelling, making it beneficial for calming sensitive or inflamed skin conditions like acne, eczema, or rosacea.
4. **Collagen Promotion***: The high content of vitamin C in moringa helps stimulate collagen production, improving skin elasticity and firmness, thereby reducing the appearance of fine lines and wrinkles.
5. **Skin Brightening***: Moringa's vitamin C content also aids in brightening the skin complexion by fading dark spots, hyperpigmentation, and scars, resulting in a more radiant and even-toned complexion.
6. **Nutrient Boost***: Moringa is rich in essential nutrients like amino acids, minerals, and fatty acids, which nourish the skin, promoting overall skin health and vitality.
7. **Natural Protection***: Moringa contains natural SPF properties, providing mild sun protection against harmful UV rays, although it should not be used as a substitute for dedicated sunscreen.
8. **Environmental Shield***: Moringa helps protect the skin from environmental aggressors like pollution and UV radiation, minimizing damage and maintaining skin health over time.

By incorporating moringa into vanishing cream formulations, these benefits can synergize to create a multifunctional skincare product that addresses various skin concerns while promoting overall skin health and radiance.

DISADVANTAGES

While moringa offers several potential benefits for the skin, there are also some considerations to keep in mind:

1. **Allergic Reactions***: Some individuals may be allergic to moringa or its components, leading to skin irritation or allergic reactions.
2. **Skin Sensitivity***: Moringa extracts might cause skin sensitivity or irritation in some people, especially those with sensitive skin types.
3. **Potential Contamination***: If not properly sourced or processed, moringa products could be contaminated with impurities or toxins, which may harm the skin.
4. **Unwanted Side Effects***: Excessive or prolonged use of moringa in skincare products could lead to unexpected side effects, such as dryness, redness, or acne flare-ups.
5. **Incompatibility with Other Ingredients***: Moringa may not interact well with certain other ingredients commonly found in vanishing creams, potentially reducing the effectiveness of the product or causing undesirable reactions.

It's essential to perform patch tests and consult with a dermatologist before incorporating moringa-based products into your skincare routine, especially if you have sensitive skin or existing skin condition.

3.METHODOLOGY

- **Cleaning and Drying**: Wash the leaves thoroughly to remove any dirt or debris. Then, dry them completely to prevent mold or bacterial growth.
- **Extraction**: Grind the dried leaves into a fine powder. Then, mix the powder with a suitable solvent like water or oil to extract the active compounds.
- **Straining**: Strain the mixture to remove any solid particles, obtaining a smooth liquid extract.
- **Emulsification**: Combine the moringa extract with emulsifiers like beeswax or lecithin to stabilize the mixture.
- **Adding Ingredients**: Optionally, incorporate other skin-nourishing ingredients like shea butter, coconut oil, or essential oils for fragrance and additional benefits.
- **Blending and Heating**: Heat the mixture gently while stirring to ensure all ingredients are well combined. Be cautious not to overheat, as it may degrade the active compounds.
- **Cooling and Packaging**: Allow the cream to cool before transferring it into suitable containers. Store in a cool, dry place away from direct sunlight. Ensure to test the cream on a small patch of skin before widespread use to check for any adverse reactions.

Uses of Ingredients in Vanishing Cream

Glycerine –Helps in softening of skin reduce chapping



Ingredient	Use
1. Main Ingredient Example : Stearic acid	It governs the consistency of the cream & imparts pearlescent property to the cream by forming crystals
2. Humectants Example : Glycerine	It prevents excessive drying of the cream
3. Alkalies Example: Potassium hydroxide	It imparts fine texture & consistency without providing harshness
4. Purified Water (Distilled & Deionized)	Provides stability to the cream because hard water leads to the formation of the magnesium causing inversion of emulsion
5. Perfume Rose water , Almond oil	Imparts Odour to the preparation

Table No : 1 Uses of Ingredient of Vanishing Cream

FORMULA

Formula	%
Stearic acid	17.0
Potassium hydroxide	1.0
Water	66.0
Glycerine	5.0
Moringa	10.0
Almond oil	0.5
Rose water	0.5
	100.00

Table No: 2 Formula of Vanishing Cream

4. MATERIALS AND METHODS

Stearic acid is melted by heating on a water bath potassium hydroxide dissolved in water, glycerine is added extract of moringa leaves, almond oil & the mixture is heated at 75⁰ C temp. this method mixture is slowly added to the melted stearic acid with constant stirring. The obtained at 40⁰ C temp. added with a suitable perfume.

Formulation and Evaluation of Vanishing Cream: Vanishing Creams are oil in the type of emulsion. When applied on the surface of the skin, they spread thin oil- less film which is not visible to the naked eye. Hence, they are called vanishing creams. They are used to hold powder on the skin as well as to improve adhesion.

Evaluation Method of Vanishing Creams

1. n-vitro method, and
2. In-vivo method.

1. In-Vitro Method of Evaluation:

Tests are carried out to know the performance of the product. Various instruments have been used by the investigator to evaluate the effect of temperature and humidity.

Evaluation of Vanishing creams is carried out by the following methods: Various instruments used in the in-vitro method are as follows:

- a. Tensile strength tester
- b. Hargen's Gas Bearing Electron dynamometer (GBE)
- c. Occlusive potential of the ingredient
- d. Gravimetric analytical method
- e. Thermal analytical method

f. Electrical methods.

Formulation and Evaluation of Vanishing Cream

- a) Tensile strength tester: This method is useful for determining the tensile property of the exercised stratum corneum of the skin. The stress or strain characteristics of stratum corneum obtained from various sources can be studied by using this instrument.
- b) Hargen's gas-bearing electro dynamometer: It determines the visco-elastic behavior of the skin. It also determines the effect on the skin. It is used both invitro and in-vivo tests
- c) Occlusive potential of ingredient: The occlusive potential of raw materials or ingredients used in the formulation of the creams, are determined by knowing the water diffusion rate.
- d) Gravimetric analytical method: This method helps establish a relationship between water content present in stratum corneum and relative humidity. This is done by suspending bits of callus.
Water content = Dry weight of the tissue – Equilibrium value.
- e) Thermal analytical methods: Various thermal analytical methods are used to provide information about the effect of temperature which causes a change in the stratum corneum.
- f) Electrical methods: Various electrical properties such as capacitance, impedance, and dielectric constant are measured by electrical methods to provide information about the variation in the water content present in the stratum corneum of the skin.

2. In-Vivo Method of Evaluation:

- (a) Transpirometry
- (b) Scanning Electron Microscopy (SEM)
- (c) Optical Microscopy and Macrophotography
- (d) Skin friction
- (e) Sensitivity test

METHOD OF PREPARATION

Steps carried out in the preparation of vanishing herbal cream were as follows.

Preparation of alcoholic extract of crude drugs:

All above mentioned powdered crude drugs of 20gms were taken into the conical flask and then 20ml of ethanol was added to it, then the conical flask was capped with aluminium foil. Then this mixture was placed for maceration for 7 days.

Preparation of alcoholic extract of crude drugs:

All above mentioned powdered crude drugs of 20gms were taken into the conical flask and then 20ml of ethanol was added to it, then the conical flask was capped with aluminium foil. Then this mixture was placed for maceration for 7 days.



Fig No.3 Extraction of Moringa Powder

Preparation of oil phase

Stearic acid (17%), potassium hydroxide (0.5%), sodium carbonate (0.5%) was taken into porcelain dish and this mixture was melted at 75°C.

Preparation of aqueous phase

Alcoholic extract of crude drugs mentioned in step-1 (4.5%), Glycerine (6%), Water (71%) were taken into another porcelain dish and heated this mixture at 75°C.

Addition of aqueous phase to oil phase

The aqueous phase was added to the oil phase with continuous stirring at 75°C. Now, once the transfer was completed it was allowed to come at room temperature, all the while being stirred. Perfume (0.5%) was added at last just before the finished product was transferred to suitable container. Then cream was evaluated for various physical parameters.

EVALUATION OF CREAM

Determination of organoleptic properties

The appearance of the cream was judged by its colour, pearlescence and roughness and graded.

Determination of pH

The pH meter was calibrated and measured the pH by placing in the beaker containing 20mg of the cream.

Determination of homogeneity

The formulations were tested for the homogeneity by visual appearance and by touch.

Determination of spread ability

Spread ability may be expressed by the extent of the area to which the topical application spreads when applied to the affected parts on the skin. The therapeutic efficiency of the formulation also depends upon its spreading value. Hence, it was found necessary to determine the spread ability of the formulation.

In this method, 500gms of cream was placed between two slides. A weight of 100gm was placed on upper slide for 10mins. The weight was removed and extra formulation was scrapped off. The lower slide was fixed on apparatus and upper slide was

fixed with non-flexible string on which 20gms load was applied. Time taken by upper slide to slip off was noted down. The spread ability (S) was calculated using the formula:

$$S = \frac{m \times L}{T}$$

Where, S = Spread ability m= Weight tied to upper glass slide.
L = Length moved on a glass slide T = Time taken.

The determinations were carried out in triplicate and the average of three readings was recorded

Determination of Dye test

The test was done by mixing the cream with red dye then place the drop of cream on a slide and cover it with cover slip, observed under microscope. If the dispersion phase appears in red coloured globules the cream was o/w type. If the continuous phase appears red colour the cream was w/o type.

Determination of Wetness

It was determined by applying cream on skin surface of human volunteer.

Determination of homogeneity

The formulations were tested for the homogeneity by visual appearance and by touch.

Determination of Patch Test

About 1-3gm of material to be tested was placed on a piece of fabric or funnel and applied to the sensitive part of the skin e.g., skin behind ears. The cosmetic to be tested was applied to an area of 1sq.m. of the skin. Control patches (of similar cosmetic of known brand) were also applied. The site of patch is inspected after 24 hrs. As there was no reaction the test was repeated three times. As no reaction was observed on third application, the person may be taken as not hypersensitive.

Determination of Appearance

The appearance of the cream was found by observing its colour, opacity, etc.

Determination of Smear type

The test was conducted after the application of cream on the skin the smear formed was oily or aqueous in nature.



Fig No. 4 Determination of Smear Type

Determination of emolliency

Emolliency, slipperiness and amount of residue left after the application of fixed amounts of cream was checked.

Determination of viscosity

The viscosity determinations were carried out using a Brookfield Viscometer (DV II+ Pro model) using spindle



number S-64 at a 20 rpm at a temperature of 25°C. The determinations were carried out in triplicate and the average of three readings was recorded.

Determination of Wash ability

The removal of the cream applied on skin was done by washing under tap water with minimal force to remove the cream.

Determination of Irritancy

The cream was applied on left hand dorsal side surface of 1sq.cm and observed in equal intervals upto 24hrs for irritancy, redness and oedema.

Accelerated stability studies

Accelerated stability studies were performed on all the formulations by maintaining at room temperature for 20 days with constant time interval. During the stability studies the parameters like homogeneity, viscosity, physical changes, pH and type of smear were studied.

5.RESULTS AND DISCUSSIONS

The herbal vanishing cream was prepared by using o/w emulsion method using mixture of alcoholic extract of crude drugs including Nutmeg oil, the extract were used and the cream was formulated which pass all evaluation tests.

Table 2: Evaluation Parameters

Sr. No.	Parameters	Observations
1	Appearance	Yellowish Green
2	Odour	Grassy Odour
3	Ph	7
4	Homogeneity	
	By Visual	Homogenous Smooth & Consistent
5	Patch Test	No Irritation
6	Type Of Smear	Even Spreading
7	Moisturing Effect	Soft & Smooth
8	Wash Ability	Easily To Water
9	Compatibility	Oil Skin Type
10	Emulsion	O/W
11	Irritancy Test	No Irritation
12	Spreadability	Good Spreading Ability
13	Accelerated Stability Study	Stable

6.CONCLUSION

The vanishing cream of crude drugs with the best properties and having nutritional value was to be prepared by simple methods and less equipment are required. The prepared herbal cream has antioxidant and antibacterial activity due to this it retards aging signs and pimple formation on the face. Further studies are required for this vanishing herbal cream. The prepared herbal cream was o/w type of emulsion. It was found that this type of formulation of the vanishing herbal cream was not prepared earlier

7.REFERENCES

1. R.E. Ugandar RE and Deivi KS, 'Formulation and evaluation of natural palm oil-based vanishing cream', *International Journal of Pharmaceutical Science and*

- Research*, 2013, Vol. 4(9), 3375-3380.
2. Ravindra RP and Muslim PK, 'Comparison of physical characteristics of vanishing Cream base, cow ghee and shata-dhautaghruta as per pharmacopoeial standards', *International Journal of Pharma and Bio Sciences*, 2013 Oct; 4(4):(P) 14 – 21.
3. Kokate CK, Purohit AP, Gokhale SB, 'PHARMACOGNOSY', Nirali Prakashan, Forty Second edition, Sep 2008.
4. Curcuma caesia Roxb." *The Plant List*. Royal Botanic Gardens, Kew and Missouri Botanical Garden, Retrieved 9, March 2014.
5. Pawar A, Gaud RS, 'Modern Dispensing Pharmacy', Career publication, Second edition, April 2005, page no-227.
6. Das K, Dang R, Machale MU, Ugandar RE, Lalitha BR, 'Evaluation for safety assessment of formulated vanishing cream containing aqueous Stevia extract for topical application', *Indian Journal of Novel Drug Delivery*, 4(1), Jan-Mar, 2012, 43-51.
6. Dr. KM Ho, 'Proper Choice of Base of Topical Medicaments', *Medical Bulletin*, Vol.11 No.5 May 2006
7. Kuchekar S, Bhise K, 'Formulation and development of antipsoritic herbal gel cream', *Journal of scientific and industrial research*, Vol 71, April 2012, page no.279284.
8. Saraf S, Chhabra SK, Kaur CD, and Saraf S, 'Development of photochemoprotective herbs containing cosmetic formulations for improving skin properties', *Journal of cosmetic science*, 63, March/April 2012, 119-131. www.ijcrt.org © 2022 IJCRT | Volume 10, Issue 1 January 2022 | ISSN: 2320-2882 IJCRT2201353 *International Journal of Creative Research Thoughts (IJCRT)* www.ijcrt.org d201
9. Kharat N, Shylaja H, Viswanatha GL, Lakshman K, 'anti-inflammatory and analgesic activity of topical preparation of root extracts of Ichnocarpus frutescens (L.) R. BR.', *International Journal of Applied Biology and Pharmaceutical Technology*, Volume: I: Issue-3: Nov-Dec - 2010, page no.1101-1106.
10. Akhtar N, Shahiq-uz-zaman, Barkat AK, Haji M, Khan S, Mahmood Ahmad, Rasool F, Tariq Mahmood and Akhtar R. Evaluation of various functional skin parameters using a topical cream of Calendula officinalis extract. *African Journal of Pharmacy and Pharmacology*. 2011; 5(2):199-206.
11. Pawar A, Gaud RS. *Modern Dispensing Pharmacy*. Career publication, Second edition, April 2005; 227.
3. Das K, Dang R, Machale MU, Ugandar RE, Lalitha BR. Evaluation for safety assessment of formulated vanishing cream containing aqueous Stevia extract for topical application. *Indian Journal of Novel Drug Delivery*. 2012; 4(1):43-51.
12. KM Ho. Proper Choice of Base of Topical Medicaments. *Medical Bulletin*. 2006; 11(9): 7- 8.
13. Ravindra Rp, Muslim PK. Comparison of physical characteristics of vanishing Cream base, cow ghee and shata-dhautaghruta as per pharmacopoeial standards. *International Journal of Pharma and Bio Sciences*. 2013; 4(4):14- 21.
14. Ugandar RE and Deivi KS. Formulation and evaluation of natural palm oil-based vanishing cream. *International Journal of Pharmaceutical Science and Research*. 2013; 4(9):33753380.
15. More BH, Sakharwade SN, Tembhurne SV, Sakarkar DM, Evaluation of Sunscreen activity of Cream containing



Leaves Extract of Butea monosperma for Topical application. International Journal of Research in Cosmetic Science.2013; 3(1):1-6.

16. Saraf S, Chhabra SK, Kaur CD, Saraf S. Development of photochemoprotective herbs containing cosmetic formulations for improving skin properties. *Journal of cosmetic science*, 2012; 6(3):119–131.
17. Kokate,CK, Purohit AP, Gokhale SB. *Pharmacognosy Text Book*, Nirali Publication.
18. Sujith SN, Molly M, Sreena K. Formulation and Evaluation of Herbal Cream containing *Curcuma longa*. *International Journal of Pharmaceutical and Chemical Sciences*, 2012; 1(4).