WWW.IJRPR.COM

International Journal of Research Publication and Reviews

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

Formulation and Evaluation of Herbal Cream by Using Moringa Oleifera Leaves.

Sanika Sandip Sukhadare, Mr. Ziya khan

(Assistant professor)

ABSTRACT :

Herbal medication therapy is a long-standing traditional medical practice. Infectious and non-infectious skin ailments are among the many health issues that plants have been used to treat over the years. Some plants' antimicrobial properties have been linked to their abundance of phytochemical elements, such as flavonoids, triterpenes, and tannins. In India, the vast majority of plants used for cosmetic purposes are local ayurvedic herbs. employing various ratios of Moringa oleifera leaves, cream, and nano emulsions. The anti-aging qualities of moringa oleifera have been studied. They increase skin hydration and block UV rays. Antioxidants and phenolics, including vitamins C, B, A, and E, have been said to be abundant in moringa leaves.The moringa moisturizing cream offers potential properties that might be employed in skincare products to hydrate and rejuvenate the skin, according to results on hydration and improving skin health.The antibacterial qualities of phenolic, alkaloid, and flavonoid components are found in Moringa oleifera L. leaves. Physical evaluations of cream were conducted using tests for consistency, pH, fluidity, stickiness, spread, and organoleptic qualities.

The moringa plant is used by the Indonesian people as animal feed, a fetid preparation, and a food. Nonetheless, the Moringa plant offers an additional advantage, particularly in the form of antioxidants found in its leaves. Alkaloids, terpenoids, flavonoids, tannins, and saponins are among the antioxidants found in moringa leaves. Finding a suitable formulation for making lotion containing moringa leaf extract with varying triethanolamine concentrations was the aim of this investigation. The experimental approach is the research methodology employed. The Kruskal Wallis Test and One Way Anova statistical techniques were used to analyze the data.

KEYWORDS: Moringa leaves, acne, ethanol, antioxidant, herbal drugs, plants, vitamins

INTRODUCTION:

Topical Drug delivery:

Systems for topical medication delivery one of the easiest routes for Administering drugs is through the skin. The stratum corneum is thought to be the main barrier that prevents chemicals from penetrating the skin. However, it is selective for applied medications or delivery systems due to the stratum corneum's presence on the surface. The application of a pharmaceutical dosage form to the skin for the direct treatment of a cutaneous problem or the cutaneous manifestation of a general disease is known as topical delivery. The goal is to limit the drug's pharmacological or other effects to the skin's surface. A wide range of pharmacological dosage forms, such as semisolids, liquid preparations, sprays, and solid powders, are used in topical drug delivery systems.Gels, creams, and ointments are the most used semisolid preparations for topical medication delivery.

ADVANTAGESOFTOPICALDRUGDELIVERYSYSTEM:

1. Avoid ance of first passmet abolism.
2. Convenient and easy to apply.
3. Inconveniences of intravenous therapy and of the varied conditions of absorption like PH changes presence of enzymes gastricemp tyingtimeetc. Achievement of efficacy with lower to aldaily dosage of drug by continuous drug input.
4. Skin irritation order matitism ayoccur due to the drug or excipients.
5. Most drug shavea high molecular weight and arepoorly lipid soluble, soarenot absorbed via skin or Mucous membranes.
6. Veryslow absorption.
7. It can be used only for those drugs which need very small plasma concentration foraction.
8. Can be used only for drugs which equire every small plasma oncentration foraction
9. Drug so flar ger particle size no teasy to absorb through thes kin[1

DISADVANTAGESOFTOPICALDRUGDELIVERYSYSTEM:

1. Skin vexation/contactd ermatitis due to medicine and/orexcipients.
2. Poor permeability of some medicines through the skin.
3. Possibility of antipathetic response.
4. Can be used only for those medicine swhich bearlow tubeattention for action.
5. Enzymes in epidermis may denature the medicines.
6. Medicine with larg eflyspeck size are delicate to get absorbed through the skin [2]

COMMONTOPICALDRUGDELIVERYSYSTEM:

A.] Ointment: Semi-solid preparations, ointments are applied externally to the skin or mucous membranes. Typically, they include one or more medications that have been dissolved, suspended, or emulsified in an ointment base. The primary purpose of ointments is to protect or emolliently moisturize the skin.

B] Paste: A semi-solid preparation, paste is meant to be applied externally to the skin. In general, the pastes are hard and quite thick. They create a protective layer over the area they are applied to since they do not melt at room temperature.

C] Lotion: Lotion is a liquid formulation intended for frictionless exterior application. They are placed directly to the skin with the aid of an absorbent substance, like gauze or cotton wool. Lotion can be used locally for protecting, calming, or cooling effects.

D] Liniment: Liniments are preparations that are either liquid or semi-solid and are used topically. Usually, the liniments are administered to the skin by rubbing and causing friction. The liniments could be emulsions, alcoholic solutions, or greasy solutions.

E] Gels: Gels are thicker than liquids. Gels are often a semisolid emulsion and sometimes use alcohol as solvent for the active ingredient; some gels liquefy at body temperature. Gels tend to be self- drying, tend to have greatly variable ingredients between brands, and carry a significant risk of inducing hypersensitivity due to fragrances and preservatives. Gels is useful for hairy areas and body folds.

F] Cream: These are semi-solid, viscous emulsions intended for exterior application. They can be readily removed from the skin because they typically contain a water-soluble basis. When applied to the skin, creams leave no apparent trace of their existence because they are lighter and have a softer consistency than real ointments.[3]

Topical medicines that can be applied to the skin are called creams. "Viscose liquid or semi-solid emulsions of either the oil-in-water or water-in-oil type" dosage forms, with varying oil and water contents, are referred to as creams. Creams can be used for medicinal or cosmetic purposes, such as cleansing, beautifying, or improving appearances. The localized effect of these topical formulations allows the medicine to be delivered into the mucous membrane or the skin's underlying layer. In order to improve site-specific medicine delivery into the skin for skin disorders, these items are intended to be used topically. Since they are made using methods created in the pharmaceutical industry, creams are regarded as pharmaceutical products. Both medicated and unmediated creams are widely used to treat a variety of skin disorders or dermatomes. Creams can be herbal, Ayurvedic, or allopathic, and people use them based on their skin issues. They include one or more drug ingredients that have been dissolved or distributed in an appropriate base. Based on their phases, creams can be categorized as either o/w or w/o types of emulsion. Traditionally, the term "cream" has been used to refer to semisolid formulations that are either water-in-oil (such as cold cream) or oil-in-water. (For instance, disappearing cream)[3]

TYPESOFCREAM:

They are divided in to two types:

1. Oil-in-Water(O/W)creams
2. Water-in- oil(W/O)cream

1) Oil-in-water(o/w)cream:

An oil-in-water (O/W) emulsion is one in which the oil is distributed as droplets throughout the aqueous phase, and oil-in-water (o/w) creams are made up of tiny oil droplets distributed in a continuous phase.

2. Water-in-Oil(W/O)creams:

These creams are made up of tiny water droplets scattered across an oily layer. The emulsion is of the water-in-oil (W/O) type when the dispersed phase is water and the dispersion medium is oil.

CLASSIFICATIONOFCREAM:

A. All the skin creams can be classified on different basis
   1. According to function,e.g. cleansing, foundation, massage,etc.
   2. Accordingtocharacteristicsproperties,e.g.coldcreams,vanishingcreams,etc.
   3. According to the nature or type of emulsion.

B. Types of creams according to function, characteristic properties and type of emulsion

1. Make-upcream(o/wemulsion)
   a. Vanishing creams,
   b. Foundation creams.

2. Cleansing cream, Cleansing milk, cleansing lotion(w/oemulsion)
3. Wintercream(w/oemulsion): a)Cold cream or moisturizing creams.
4. All-purpose cream and general creams.
5. Night cream and massage creams.
6. Skin protective cream.
7. Hand and body creams.

METHODOF PREPARATION:

1. Preparationofo/wemulsion cream: Melt the emulsifier and the oil-soluble ingredients in a beaker at 75°C in a water bath. Additionally, preservatives and water-soluble ingredients are melted at 75°C in another beaker of water. Following heating, the water phase was gradually added to the oil phase in a mortar and pestle and triturated until a clicking sound was produced. Perfuming agents and/or preservatives are introduced after the temperature has cooled. There will be more water in this preparation than oil.

2. Preparationofw/oemulsion cream: Melt the emulsifier and the oil-soluble ingredients in a single beaker at 75°C. Additionally, water and water-soluble ingredients are taken and melted at 75°C in a different beaker. Following melting, the water phase is put to the mortar and pestle, followed by the oil phase, which is gradually added and triturated until a clicking sound is produced. Additionally, the perfuming ingredient is applied once the cream's temperature has dropped. There will be more oil phase and less water phase in this preparation.

Advantages and Disadvantages of Cream:

Advantages:

1. It is the easiest way to deliver a drug.
2. It does not show the side effect on the other body organ.
3. Convenient and easy to apply.
4. It can slow down the signs of aging.
5. Less greasy compared to ointment

Disadvantages:

1. Skin irritation
2. Some drugs show low penetrable through the skin.
3. Possibility of allergic reactions.
4. Stability is not as good asointment.

They a relesshydrophobic thanothersemi solidpreparation,sorisk of contaminationishigh than others. [4]

HUMAN PHYSIOLOGY OF SKIN:

A] Epidermis: Consisting of stratified keratinized squamous epithelium, the epidermis is a thick layer of skin that varies in thickness depending on the body part. On both the palms of the hands and the soles of the feet, it is extremely thick. The epidermis lacks blood vessels and nerve endings, but the medium fluid that supplies oxygen and nutrients and moves like a lymph is washed away from the dermis in its deeper layers are washed away a medium fluid from the dermis, which provides oxygen and nutrients, and flows like a lymph.

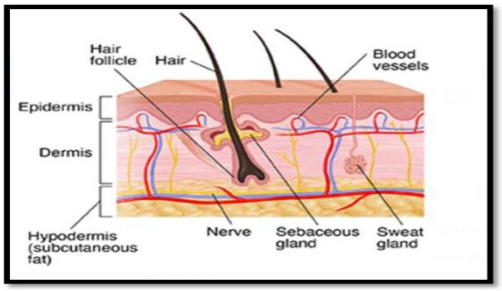


Fig. 1-Structure of Skin

B] Dermis: This layer is elastic and firm. It is composed of connective tissue, with collagen fibers joined to elastic fibers forming the matrix. Excessive stretching of the skin can cause elastic band fractures, which result in permanent striae, or stretch marks, which are common in obesity and

pregnancy. Wrinkles become more noticeable as we age because collagen fibers lose their capacity to bind water and give our skin strength. Important cells in the dermis include mast cells, fibroblasts, and macrophages. Areolar tissues and varying levels of adipose tissue (fat) are located under its deeper layer.

C] Subcutaneous gland: Secretory epithelial cells found in the same tissue as hair follicles are part of the subcutaneous gland. They are found on the skin of every region of the body, with the exception of the palms and soles of the feet, and they remove sebum, an oily substance, from the hair follicles. The skin of the face, axillae, groins, and scalp are where they are most prevalent. Separate sebaceous glands in the hair follicles in regions that transition from one kind of epithelium to another, such the lips, eyelids, nipples, labia minora, and glanspenis, release sebum straight onto the skin's surface.

FUNCTION OF SKIN:

a) Protection
b) Hearing
c) Temperature control
d) Evaporation control
e) Beauty and communication [5]

INFORMATION OF MORINGA OLEIFERA LEAVES:

Synonym: Drumstick tree
Biological source: It consist of the dried long, slender,triangularseed-podsofmoring a oleiferabelongingto the family moringaceae
Family: Moringaceae
Geographicalsource:sub Himalaya nareas of India,Pakistan
Chemical constituent: Quercetin, kaempferol, niazinin A, niazinin B, niazimicinA, niazimicin B, Rutinosides, flavonol glycoside,
LatinName: Moringaoleifera
Uses: Protecting and nourishing skin and hair ,Treating edema , Protecting the liver, preventingand treatingcancer,Antibacterial,Anti-inflammatory,Antioxidant,Reduced wrinkles/agelinesandenhanceskinhealth
Moringa oleiferaLam.or mungaisoneofthe mostimportantplantwidelycultivated inIndia. ItcontainrichsourceofthevitaminA,vitaminCandmilkprotein. Differenttypesofactive phytoconstituents like alkaloids, protein, quinine, flavonoids, tannin, steroids, glycosides, fixedoilandfatsarepresent.Thisplantisalsofoundinthetropicalregions.Thepresent review discusses the phytochemicalcomposition, medicinal uses &pharmacological activity of this plant.

Fig. 2-Moringa Oleifera Leaves

Taxonomical Classification:

Kingdom–Plantae	Sub kingdom – Tracheobionta
Class–Magnoliopsida	Subclass–Dilleniidae
Division – Magnoliophyta	Super Division–Spermatophyte
Order – Capparale	Family – Moringceae
Genus – Moring	Species – oleifera

LITERATURE REVIEW:

1] S.Moorthi*Et.al2013: Ethanol, petroleum ether, chloroform, and aqueous extracts of Moringa oleifera leaves have antibacterial qualities against four distinct microorganisms: Streptococcus pneumonia, Escherichia coli, Klebsiella pneumonia, and Staphylococcus aureus. The antibacterial activity was

measured using Kirby-Bauer disc diffusion. To the greatest extent possible, an ethanolic extract inhibited Staphylococcus aureus. Ethanol, petroleum ether, chloroform, and aqueous extracts of Moringa oleifera leaves have antibacterial qualities against four distinct microorganisms: Escherichia coli, Klebsiella pneumonia, Streptococcus pneumonia, and Staphylococcus aureus. The antibacterial activity was assessed using Kirby-Bauer disc diffusion. In the ethanolic extract, Staphylococcus aureus had the largest zone of inhibition.

2]Sinodukoo Eziuzo Okafo 1*Et.al 2020: Assessing the antibacterial effectiveness of topical cream, ethanolic extract, and aqueous extract derived from moringa oleifera seeds against a range of bacteria and fungus was the aim of this investigation. The powdered M. oleifera seed was macerated for 24 and 48 hours in ethanol and water, respectively. The filtrates were concentrated and stored appropriately. The traditional agar diffusion method was used to assess the aqueous and ethanolic extracts for antibacterial sensitivity. Cream was made from the watery extract. They were assessed using viscosity, pH, antibacterial activity, and organoleptic properties. Regarding Pseudomonas aeruginosa, Staphylococcus aureus, Candida albicans, and Escherichia coli, the ethanolic extract shown effectiveness against S. aureus and C. albicans.

3]ShivaniDattatrayKhatal*Et.al2022: The majority were obsessed with appearance. Many beauty products have been utilized to look fresh and desirable. Botanical ingredients are frequently used in cosmetics. This is a natural gift, and herbal cosmetics are growing in popularity. Because herbal cosmetics don't contain any potentially hazardous synthetic ingredients that could otherwise be terrible for the skin, they are safer to use than chemical-based cosmetics. The goal of this study was to create and assess a herbal vanishing cream that was natural and antibacterial. Issues including radiation damage, early aging, pigmentation loss, hydration, nourishment, and acne could be remedied by incorporating the health benefits of carefully chosen herbs into the mixture.

4] Satinder Pal Kaur Malhotra*Et.al 2018 :Examining the antibacterial qualities and phytochemical components of an ethanolic extract of the moringa oleifera Lam. plant, a member of the moringaceae family, was the aim of the study. To determine the phytochemical components and evaluate the plant's antibacterial activity, the bioactive components of M. oleifera leaves were extracted using distilled water and ethanol. The phytochemical components were screened using the qualitative analytical approach. The M. oleifera leaf extract included tannin, flavonoids, glycosides, phenols, and other compounds, according to the results of the phytochemical screening. An examination into the antibacterial activity of M. oleiferas ethanolic leaf extract focused on gram positive bacteria (Staphlococcus aureus) and gram negative bacteria (Escherichia coli).

5] Vikash Kumar*Et.al2012 : Common plants like Moringa oleifera are utilized for a number of therapeutic purposes. The purpose of the study was to examine the in vitro antibacterial properties and activity of aqueous, ethanolic, and methanolic extracts of Moringa oleifera leaves. Using the disc diffusion method, in-vitro antibacterial activity was assessed in MH agar medium. The studied organisms were significantly impacted by the extract. The aqueous extract displayed the lowest zone of inhibition against B. subtilis (12.0±1.73), whereas the methanolic extract displayed the highest zone of inhibition against S. aureus (23.6±1.15). The aqueous extract exhibited the lowest relative percentage inhibition against B. subtilis (27.86%), while the methanolic extract demonstrated the highest relative percentage inhibition against S. aureus (90.34%).

NEED OF STUDY:

Moringa oleifera, often called the "Miracle Tree," is known for its rich nutritional and medicinal properties. The leaves contain a variety of bioactive compounds, including vitamins, antioxidants, and essential fatty acids, which can be beneficial for skincare.The plant has been traditionally used for its anti-inflammatory, antibacterial, and antioxidant properties, making it an excellent candidate for inclusion in topical formulations like herbal creams.There is an increasing consumer demand for natural and organic cosmetic products due to concerns over the side effects of synthetic chemicals used in skincare. Moringa oleifera, being a natural source with numerous health benefits, fits into the growing trend of natural skincare solutions.

The need to create safe, eco-friendly alternatives to chemically formulated products is pushing the development of herbal creams. Moringa oleifera is a drought-resistant plant that grows in a variety of conditions. It can be cultivated in areas with limited resources, making it an environmentally sustainable source for herbal creams.By using Moringa, a locally sourced and sustainable plant, the production of the cream can support local agriculture and contribute to reducing environmental foot prints .Formulating a herbal cream using Moringa leaves may open the door for innovative skincare products that offer moisturizing, anti-aging, and rejuvenating benefits, all while being gentle and non-toxic for the skin.

The bioactive compounds like vitamins A, C, and E in Moringa leaves can help with skin repair, reduce fine lines, improve complexion, and protect against environmental stressors. The formulation, extraction, and evaluation of the herbal cream require scientific testing to verify its effectiveness, safety, and potential side effects. Formulation science will involve extracting the active ingredients from Moringa leaves and incorporating them into a stable cream, ensuring that the bioactive compounds retain their efficacy in the final product. Evaluation includes assessing properties like skin irritation, hydration, and absorption, as well as comparing the performance of the herbal cream to existing skincare products. Moringa's antibacterial and anti-inflammatory properties are particularly beneficial for treating skin conditions like acne, eczema, and dermatitis, which are common concerns for many individuals. The herbal cream could potentially provide a natural remedy for individuals with sensitive skin or those looking for a more holistic skincare option.Developing an effective herbal cream based on Moringa oleifera offers opportunities for research in the areas of formulation chemistry, phytochemistry, and dermatology.

AIM:

Extraction, Formulation and Evaluation of herbal cream By Using Moringa oleifera Leaves .

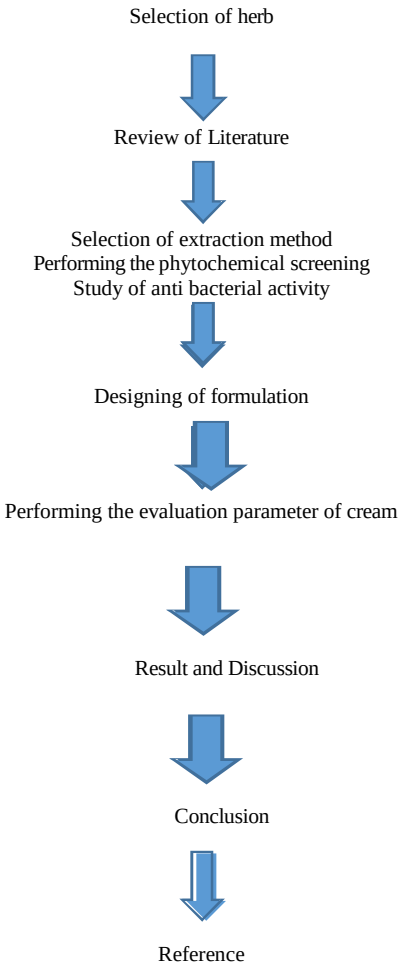
OBJECTIVE:

1. To perform the extraction of Moringa Oleifera leaves in methanol solvents.
2. To perform phytochemical screening of methanol solvents extracts.
3. Examine the antibacterial activity of methanol extracts.
4. Formulation and evaluation of the herbal cream of methanol extract.

BENEFITS OF HERBAL CREAM BY USING MORINGA OLEIFERA LEAVES:

1. Rich in Antioxidants: Moringa contains vitamin C, beta-carotene, and other antioxidants that help fight free radicals, reducing signs of aging like wrinkles and fine lines.
2. Anti-inflammatory Properties: The leaves of Moringa have anti-inflammatory effects, which can help soothe irritated skin and reduce redness or swelling caused by conditions like acne or eczema.
3. Hydration: Moringa is rich in essential fatty acids, such as oleic acid, which helps moisturize the skin, making it soft and supple.
4. Skin Repair: The high levels of vitamins and minerals in Moringa, such as vitamin E and calcium, help promote the healing of wounds, cuts, and other skin injuries. It also supports the regeneration of skin cells.
5. Antimicrobial Effects: Moringa has antibacterial, antifungal, and antimicrobial properties, which can help prevent infections and improve overall skin health, especially for those with acne-prone skin.
6. Brightening: The vitamin C in Moringa helps to lighten dark spots and even out skin tone by inhibiting melanin production.
7. Reduces Fine Lines and Wrinkles: Due to its high content of vitamins, antioxidants, and fatty acids, Moringa helps improve skin elasticity, reducing the appearance of fine lines and wrinkles over time.
8. Detoxifying: Moringa leaves have detoxifying properties, helping to remove toxins from the skin and promote a clearer complexion.

PLAN OF WORK



MATERIALS: Formulation table for cream :

Name of Ingredient	Quantity	Role
Moringamethanol	1.35ml	API

extract		
Stearicacid	5.1gm	Emollient
Potassiumhydroxide	0.15gm	Alkali
Sodiumcarbonate	0.15gm	Alkali
Glycerine	1.8ml	Humectant
Distilledwater	21.3ml	Vehicle
Almondoil	0.15ml	Perfume
Methylparaben	0.02gm	Preservative

METHODOLOGY:

A] Collectionofleaves: Moringa leaves were gathered from neighboring communities, cleaned, dried, and ground into all pieces using a grinder in a hot air oven set at 45°C. The resulting powder was applied to the extraction process.

B] Extraction:

Using maceration techniques, a 1:40 ratio was used to obtain the leaf extract.

Utilizing 400 milliliters of pharmaceutical-grade methanol, 10 grams of dried sample powder were extracted and allowed to sit at room temperature for 72 hours in a second 500 milliliter.

Following that, a rotary evaporator was used to evaporate the extracts after they had been filtered using filter paper and vaccum pump.

Fig. 3- Methanol extract

Phytochemical screening of methanol extract :[8]

1) Tannin:

Sr no	Test	observation	Inference
1	5%fecl3solution: 2-3mlofmethanolextractadd fewdropsof5%fecl3solution	Blackcolourformed	Tanninpresent
2	Leadacetatesolution: 2-3mlofmethanolextract,add fewdropsofleadacetatesolution	Whitepptisformed	Tanninpresent
3	Brominewater: 2-3mlofmethanolextractandadd fewdropsofbrominewater	Decolourationof bromine water	Tanninpresent
4	Aceticacidsolution: 2-3mlofmethanolextractand add acetic acid solution	Redcoloursolution	Tannin present
5	Potassiumdichromate: 2-3mlofmethanolextractsand addpotassiumdichromate	Redpptisformed	Tanninpresent
6	DiluteHNO3: Methanolextractandadddilute HNO3 solution	Yellowcolouris formed	Tanninpresent

2) Alkaloid:

SRNO	TEST	OBSERVATION	INFERENCE
1	Dragendroff'stest: 2-3mlofmethanolextractandadd few drops of dragendroff's reagent	Orangebrownpptis formed	Alkaloidpresent
2	Mayer'stest : 2-3mlmethanolextractwithfew drops of Mayer's reagent	Givesppt	Alkaloidpresent
3	Hager'stest: 2-3mlmethanolextractwith hagers reagent	Yellowpptisformed	Alkaloidpresent
4	Wagner'stest: 2-3mlmethanolextractwithfew dropsWagner'sreagent	Reddishbrownpptis formed	Alkaloidpresent
5	Tannicacidtest: 2-3mlofmethanolextractadd fewdropstannicacidsolution	Buffcoloured precipitate	Alkaloidpresent

3) Flavonoid :

Sr No	Test	Observation	Inference
1	Shinodatest: Toextractadd5ml95%methanol andaddfewdropsconc.HCL and 0.5gmagnesiumturnings	Orangecolour appear	Flavonoidpresent
2	To smallquantityofresidueadd leadsolution	Yellowcoloured precipitateformed	Flavonoidpresent

4) Glycosides:

Sr No	Test	Observation	Inference
1	Legal'stest(testfor cardenoioids): Toalcoholicextract,add1mlof pyridineand1mlsodium nitripruside	Redcolourappear	Glycosidepresent
2	Testfordeoxysugars(keller killiani test): To2mlofmethanolicextractadd glacialaceticacid,onedrop5% fecl3 and conc.H2SO4	Reddish brown colour appear at junctionofthetwo liquid layers and upper layer appear bluishgreen	Glycosidepresent
3	Borntrager's test for anthraquinoneglycoside: To3mlofmethanolextract adddil H2SO4.boil and filter , to cold filtrateaddequalvolumeof benzene,shakewellseparatethe organicsolventaddammonia	Ammonicallayer turns red	Glycosidepresent
4	Modifiedborntrager'stestforc- glycoside : 5mlofmethanolextract,add5ml 5%fecl3and5mldiluteHCL.Heat for5minuteinboilingwaterbath coolandaddbenzene,shakewee separateorganiclayeraddequal volumediluteammonia	Ammonicallayer shows pinkish red colour	Glycosidepresent

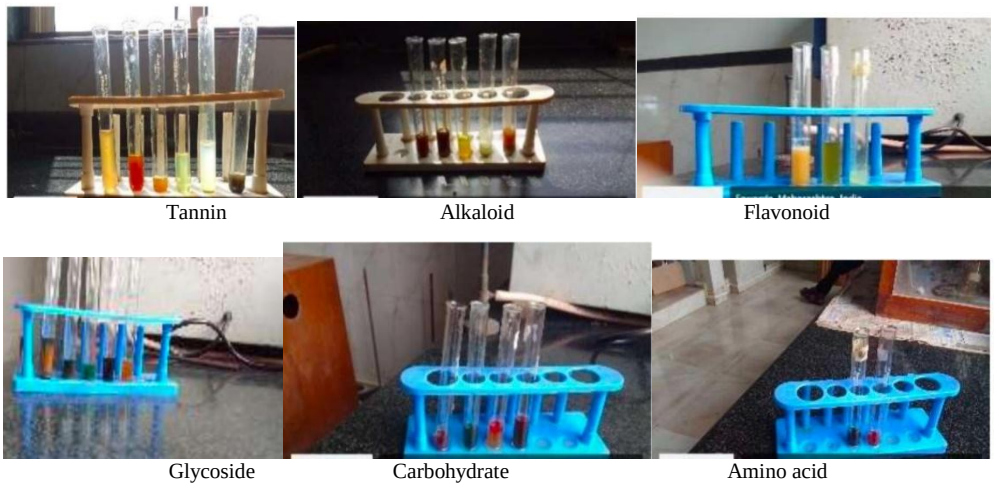
5) Carbohydrates:

Sr No	Test	Observation	Inference
1	Fehling'stest: for 1 Mix 1 ml Fehling A and B solutionandboilminute,addequal volumeofMethanolextractsolution	Brick red ppt is formed	Carbohydrates is present

	,heatinboilingwaterbathfor5-10 minute		
2	Benedict'stest: Mix equal volume of benedict reagent and Methanol extract in test tube and heat in boiling water bath for 5 minute	Green coloured solution is formed	Carbohydrates is present
3	Tollen'sphloro glucinol test for galactose : Mix2.5mlconc.HCL and 4ml0.5% phloroglucinol. Add 1-2 ml Methanol extract and heat the Mixture	Yellow to red colour appears	Carbohydrates is present
4	Mix equalamount of Methanol Extract and HCL. Heat this mixture. Add a crystal phloroglucinol	Red colour appear	Carbohydrates is present

6) Aminoacid:

Sr No	Test	Observation	Inference
1	Ninhydrintest: Heat 3ml methanol extract, add3 drops5%ninhydrin solution in boiling water bath for 10minute	Purple colour appear	Amino acid present
2	Testfortyrosine: Heat 3ml methanol extract and 3drop smillians reagents	Dark red colour appear	Amino acid present



Tannin Alkaloid Flavonoid

Glycoside Carbohydrate Amino acid

Fig .4-Phytochemical Test For Methanol Extract

PROCEDURE:

Procedure for methanol extract cream:

1. Preparationofoilphase: Oil phase preparation: Steric acid was first melted at 70•C after being teaken into a beaker.

2. preparation of aqueous phase: Aqueous phase preparation: Melt methanol extract, potassium hydroxide, sodium carbonate, glycerine, and distilled water in a separate beaker at 70°C

3. ddition of aqueous phase into oil phase:Aqueous phase addition to oil phase: The aqueous phase is gradually added to the oil phase while being continuously stirred. After the addition was finished, a perfume was added, and the final product was moved to the appropriate container.[11]

Fig. 5- Methanol Extract Cream

EVALUATION OF HERBAL CREAM:

1. Physical Evaluation

Sr.No	Parameter	Evaluation
1.	Colour	Light Green
2.	Odour	Aromatic
3.	Texture	Smooth
4.	Consistancy	Semi solid

2. Determination of PH: A standard buffer solution was used to calibrate the PH meter. After dissolving around 0.5 g of the cream in 50 ml of distilled water, the pH of the mixture was determined.

3. Homogeneity: Both touch and visual appearance were used to examine the formulations for homogeneity.

4. Irritancy test :After applying the cream to the designated region, the time was recorded. At regular intervals up to 24 hours, irritability, erythema, and edema were assessed and reported if present

5. Phase Separation:The prepared cream is stored at room temperature, out of direct sunlight, in a firmly sealed container, and its phase is monitored for 24 hours.

6. Washability:After applying the formulation to the skin, it was tested and washed with water.

7. Dilution test:Water was added to a test tube containing a little amount of cream. The emulsion is of the o/w kind if the water is dispersed evenly throughout it without causing it to break

8. Spreadability test: Cream was sandwiched between two glass slides and crushed for five minutes with 100 grams of weight to get a consistent thickness. To the pan, a weight was put. Spreadability was measured as the amount of time needed to separate the two slides, or the amount of time it took for the upper glass slide to pass over the lower slide.

$S=M*l/t$

M=weight of pan the upper slide

l-length moved on a glass slide

t-time[12][13]

RESULTSAND DISCUSSION:

Phytochemical screening:

Name of Phytochemical Constituent:	Methanol extract
Tannin	Present
Alkaloid	Present
Flavonoid	Present
Carbohydrates	Present
Glycoside	Present
Aminoacid	Present

Morphological Evaluation:

Organoleptic evaluation	Methanol extractcream
Colour	Light green
Odour	Aromatic
Appearance	smooth

Physicochemical Evaluation:

1. Determination of pH:

	Methanol extract cream
pH	6.19

The pH of the cream was found to bein the range of 5.6-7.4which is good for the skin. Based on the result of prepared extracts creams shows optimum pH and they are compatible with skin pH.

2. Homogenecity: Cream produced a uniform distribution of extract in cream. This was confirmed by visual appearance and by touch.

3. Irritancy test:

	Methanol extract cream
Irritancy test	No redness, edema, inflammation and irritation Dur ingirritancy studies.

4. Phase seperation: During the time period no phase separate out of the cream..

5. Washability:

	Methanol extract cream
washability	Cream is easily washable and is safe to use

6. Dilution test: This dilution test confirms that methanol extract cream swereo/w type emulsion.

7. Spread ability test:

	Methanol extract cream
Spredability	S=M*l/t M=100gm l=4.6cm t=50seconds S=100×4.6/50 S=9.2gmcm/sec

Based on the result of prepared cream the range of spredability is optimum and cream area silyspreadable.

CONCLUSION:

Moringa oleifera has good phytochemical screening in methanol extract, with extracts displaying identical phytochemical constituents, based on the assessment parameters. The antibacterial activity of the methanol extract is therefore highest against S. aureus and lowest against E. coli.The methanol extract's area against S. aureus was 18.92 cm2, while the area against E. coli was 11.9 cm2. When it comes to S. aureus, methanol extract exhibits stronger antibacterial action than E. coli. Moringa leaves exhibit strong antimicrobial properties.Steric acid, potassium hydroxide, sodium carbonate, glycerine, methyl paraben, and almond oil are some of the ingredients used to make herbal cream. However, during the study period, cream showed satisfactory consistency and spredability, pH, and no phase separation. The methanol extract cream has a pH of 6.19 .The cream are friendly with the skin and have a healthy pH for the skin as a result. The spreadability of cream is good. With very little water force, cream can be readily removed off the skin's surface.

Because the herbal cream is created from herbal extract, the aforementioned study comes to the conclusion that it is safe to use. Because they are believed to be safer and have fewer adverse effects than synthetic ones, natural treatments are more widely used. Consequently, there is currently a significant demand for herbal cosmetics, and the value of herbs in cosmeceuticals has significantly increased in the personal care system. A herbal cream that uses herbal extracts to increase patient compliance that is safe, non-toxic, and effective would be preferable over synthetic ones. In the market, herbal formulations are growing in popularity. Herbal creams are said to be an efficient and long-lasting method of enhancing skin appearance. Herbal creams are used to maintain skin elasticity, rejuvenate muscles, increase blood circulation, and eliminate facial wrinkles.

REFERENCES:

[1] L.ChauhanandS.Gupta,"Creams:AReviewonClassification,PreparationMethods,Evaluation anditsApplications,"*JournalofDrugDeliveryandTherapeutics*,vol.10,no.5-s,pp.281–289, Oct.2020,doi:10.22270/jddt.v10i5-s.4430.

[2] K. Vaishnavi Subhash, N. Dipak Sopan, and B. Ambedkar, "A ReviewArticle On: Topical Drug Delivery System [TDDS]."

[3] R.M.Mehta"TextbookofPharmaceutics-II"4thEdition,118-183

[4] S.Hagavane,S.Sonawane,A.Katkale,andV.Kunde,"Reviewoncreamastopicaldrugdelivery system," 2022. [Online]. Available: www.pharmacyjournal.in

[5] P. Dipak Ashtul, M. D. M. Waghmode, and S. Jain, "REVIEW ON PHARMACEUTICAL CREAMS," 2023. [Online]. Available: www.ijcrt.org

[6] B.K.Paikra,H.K.J.Dhongade,andB.Gidwani,"PhytochemistryandpharmacologyofMoringa oleifera Lam," Sep. 01, 2017, *KoreanPharmacopunctureInstitute*. doi: 10.3831/kpi.2017.20.022.

[7] B.Vongsak,P.Sithisarn,S.Mango,S.Thongpraditchote,Y.Wongkrajang,andW.Gritsanapan, "Maximizingtotalphenolics,totalflavonoidscontentsandantioxidantactivityofMoringaoleifera leafextractbytheappropriateextractionmethod,"*IndCropsProd*,vol.44,pp.566–571,Jan. 2013, doi: 10.1016/j.indcrop.2012.09.021.

[8] Dr.K.R.Khandelwal, Dr.Vrunda Sethi, "PRACTICAL BOOK OF PHARMACOGNOSY First Edition, Feb 2020, 25.1 - 25.9

[9] Vikash kumar, N.Pandey,N. Mohan, and R.Singh, " ANTIBACTERIAL AND ANTIOXIDANT ACTIVITYOFDIFFERENTEXTRACTOFMORINGAOLEIFERALEAVES-ANIN-VITRO STUDY", *International journal of pharmaceutical sciencesReview and Research*, vol 12,issue 1, 89-94 ,feb 2012,

[10] S.P.K.MalhotraandT.K.Mandal,"Phytochemicalscreeningandinvitroantibacterial activity ofMoringaoleifera(Lam.)leafextract,"*ArchivesofAgricultureandEnvironmentalScience*,vol. 3,no.4,pp.367–372,Dec.2018,doi:10.26832/24566632.2018.

[11] S.D.KhatalandA.K.Salunkhe,"FormulationandEvaluationofAntibacterialHerbalVanishing Cream,"*Int.JPharmSciRevRes*,pp.75–79,Nov.2022,doi:10.47583/ijpsrr.2022.v77i01.013.

[12] V.Suryadevara,S.Doppalapudi, L.SasidharReddivallam,R.Anne,andM. Mudda,"Formulation and evaluation of anti-inflammatory cream by using Moringa oleifera seed oil,*Pharmacognosy Res*,vol.10,no.2,pp.195–204,Apr.2018,doi:10.4103/pr.pr_101_17.

[13] M. D. Jadhav, M. P. Ubale, S. V Kadam, and A. M. Ehtesham, "Formulation and Evaluation of Herbal Skin Cream for Wound Healing Activity," *International Research Journal of Pharmacy and Medical Sciences (IRJPMS)*, vol. 6, no. 4, pp.