

Formulation and Evaluation of a Herbal Facial Cream Containing Tulsi and Mentha Oil for Treatment of Conventional Acne Vulgaris Treatment

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Abstract: Herbal cream is a treatment that people use for treating different skin problems. *Propionibacterium acne* and *Staphylococcus epidermis* are two examples of the bacteria known to cause acne pus. In order to tackle this acne vulgaris etiologic factor, the current research focuses on creating and analyzing a herbal cream. The present recipe includes rose water, methylparaben, borax, bees wax, liquid paraffin, Tulsi extract, Mentha extract, Tridax Procumbens. To make the herbal cream, use the aqueous phase. We evaluated the pH, spread ability, stability, and in-vitro diffusion of the produced Cream. The presence of the active ingredient Tulsi was found to be matching the formulations color, foreign particles, etc. were examined. Following application, it was found that the Cream was simple to spread across a skin surface evenly and smoothly.

Keywords: Acne vulgaris, Tulsi, Mentha piperata, Tridax procumbens, Skin cream

I. INTRODUCTION

The Greek word "kosmeticos," which originally referred to any compounds used to enhance or encourage appearance, is whence the word "cosmetic" gets its from. [1] A water and oil emulsion is what cream is classified as. The formulation is topically administered to the epidermis, the outermost layer of the skin, and its primary benefit lies in its extended duration of action at the site of application. [2]

Acne vulgaris is a significant issue, particularly for adolescents and young adults, according to statistics from around the world. Between the ages of 11 and 25, this skin condition affects around 90% of the population; between the ages of 23 and 34, it affects almost 8% of people; and between the ages of 35 and 45, it affects just 3% of individuals. [3] Anybody can have problems including acne, sunburns, blemishes, and pigmentation at some point in their lives.

Herbal cosmetics are the fastest-growing industry in India, according to market data. Since there are many medicinal plants that have medicinal properties, the majority of them were used by Indians as cosmetic medicines, but for maximum effectiveness, they should be prepared in dosage form. Herbal cosmetics, also referred to as products, are made by mixing a few different legal cosmetic chemicals with one or more herbal components. The term "herbal cosmetics" describes goods used only to provide certain cosmetic benefits. Herbal medicines are in high demand as a result of their lack of side effects.

The inherent constituents of herbs do not exhibit any adverse action; rather, they enhance it by providing essential vitamins and other advantageous minerals. Numerous medicinal herbs are often employed for the handling of skin ailments, while concurrently exhibiting antibacterial characteristics.

The word “cosmetic” has its origin in Greek word “kosmesticos,” which originally Referred for any substances used to enhance or promote attractiveness. [4] The cream is a formulation categorized as a water and oil emulsion. It is applied to the epidermis of the skin, and its main benefit is that it has an extended action at the application site. [5]

HOW COMMON IS ACNE

- The most prevalent skin problem is acne. Young people, teenagers, and older children are the demographics most affected by it.[6]
- Approximately 80% of people aged 11 to 30 have acne. Between the ages of 14 and 17 are when girls are most likely to develop acne, while 16 to 19-year-old boys are more likely to develop the condition. The majority of people will endure recurrent outbreaks of acne for several years before seeing that as they age, their symptoms progressively begin to improve. When a person is in their twenties, acne symptoms often go away.[7]

Causes of Acne

- Sebaceous glands that secrete lipids too quickly.
- rapid keratinization, or hyperkeratosis, at the hair infundibulum.
- The Propionibacterium acnes bacteria's role in comedogenesis.
- Women's cyclical hormonal levels. Occupational dangers include extreme humidity, recurring chemical exposure, and air pollution.[8]
- Seasonal factors, excessive sexual activity, emotional or psychological stress, physical manipulation of the skin's surface, and specific medications like corticosteroids are additional stimuli and events linked to acne.[9]

Aim: In addition to enhancing aesthetic appearance, the handling of acne vulgaris should aim to mitigate cutaneous lesions' s intensity and frequency.

OBJECTIVES

- 1] This study's objectives are to describe the barriers to acne nonadherence and to offer solutions for overcoming them.
- 2]To assess patient compliance in acne vulgaris.
- 3]knowing of differential diagnosis of acne and related disorders.
- 4]acquiring the knowledge of the therapeutic option and their indication.
- 5]Acquiring knowledge of etiology and pathogenesis of acne.

Plan of work

- Literature Survey
- Selection of method
- Selection of chemicals/ ingredients
- Preparation of Formulation
- Evaluation.

Cream

Topical creams are a kind of dermatological formulation that may be administered externally to the skin. In the context of pharmaceutical formulations, creams may be characterised as viscous liquid or semi-solid emulsions, which can be classified as either W/O or O/W types. Consistency of creams is contingent upon the proportion of oil to water present in the formulation. Creams are used for a variety of functions, including protection, cleaning, enhancement of aesthetic appeal, and the provision of medical or cosmetic benefits. Topical formulations are used for the targeted administration of medicine to either the mucosal membrane or the subcutaneous layer. These products have been specifically formulated for topical application on the skin, with the aim of enhancing the transdermal delivery of drugs for various skin conditions. Creams are considered to be pharmaceutical products due to their use of procedures developed inside the pharmaceutical industry. Medicated and unmedicated creams are often used in the treatment of various dermatoses or skin diseases. Individuals may choose for ayurvedic, herbal, or allopathic creams based on their specific need for

addressing skin issues. A suitable solvent has been used to solubilize or disperse one or more pharmaceutical compounds. Creams may be classified as o/w or w/o, reliant on their phase composition. Throughout history, the term "cream" has been used to denote substances of a semisolid nature, which may be categorized as either water-in-oil (such as cold cream) or oil-in-water (such as vanishing cream).[11]

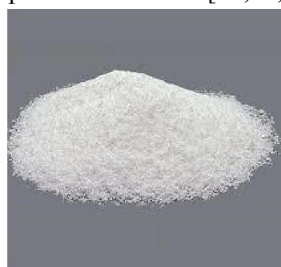
II. MATERIAL AND METHODS

Chemicals & Glassware

The Fabtech College of Pharmacy provided all the chemicals, materials, tools and reagents used in the formulation development.

Borax

Various cosmetic products, such as creams, gels, and lotions, use wax and Borax as key constituents. The incorporation of this substance in hand soaps is prevalent due to its efficacy in facilitating the elimination of grease or oil residues from the hands. Borax is considered to be an optimal component for cleansers and toners because to its alkaline composition. Borax has the potential to serve as an emulsifying agent, preservative or buffer in several cosmetics, including, lotions, shampoos, creams, gels, bath-salts, bath bombs, and scrubs. Borax is a constituent of "slime," a viscous substance that is popular among children for recreational purposes. Slime is often composed of adhesive materials, water, and many other components. Borax is often used as a component in skincare products such as creams, body lotions, shampoos, bath gels, and even popular bath bombs. [12,13,14]



Beeswax

Ability to Protect Against Irritants: Beeswax can act as a protective barrier when applied to the skin. It can protect skin from harmful contaminants and inclement weather. In addition

To calming and hydrating the hair, beeswax can stop moisture from evaporating from the Hair. Beeswax can act as a barrier of defense on the skin. [15,16] Since it is a humectant, it also Attracts water. These two characteristics may help keep the skin moisturized. Beeswax is a Fantastic natural exfoliator for getting rid of dead skin cells. The antibacterial property of beeswax also helps to heal and soften skin. It can be used to treat different problems of the skin, such as stretch marks, eczema, dry skin, and acne. [17,18]



TULSI

Synonym:

Sacred basil and Holy basil.

Biological Source:

Tulsi consists of entire herb known as *Occimum sanctum* which belongs to the family Labiatae.

Chemical Constituent: The leaves of the Tulsi plant are characterized by the presence of a vibrant yellow volatile oil, which contributes to their pleasant aroma. The oil content typically ranges from 0.1% to 0.9%. The composition of the substance consists of roughly eugenol 70%, 3% carvacrol, and 20% eugenol-methyl ether. Additionally, it is comprised of caryophyllene.



Fig: Whole plant of Tulsi

Tulsi has a holy place in the Hindu religion and even worshipped as a goddess. Tulsi, also known as Holy Basil or *Ocimum sanctum* in botanical terms, belonging to the Labiatae family. Due to its numerous medical characteristics, it has contributed significantly to science both from ancient times and in modern studies. [19] Tulsi is a well-liked natural treatment for a wide range of conditions, including wounds, bronchitis, liver disorders, stomach disorders, skin illnesses, many types of poisoning, and psychological stress disorders. Cultivated for its volatile oil and for its use in traditional medicine and religious practices of Hindu religion. Tulsi is one of the major components of is a popular herbal tea that is frequently used in Ayurveda. [20]

Tulsi leaf powder's many advantages:

- Greatly beneficial for skin
- Prolongs aging process.
- Good glycemc control.
- Helps preventing the renal stone formation.
- Stress reduction.
- Keeps skin healthy.
- Useful in kidney stone
- Fights acne
- Helps well in ageing of skin.
- Helps treating eczema.
- Good for skin healing.
- Source of vitamin K [21]

Mentha:

Synonym:

Peppermint

Biological Origin:

It consists of fresh leaves of *Mentha piperata* belonging to the family Labiatae.

Phytochemicals:

Menthol, Menthone, Methyl Acetate, Volatile oil, Flavonoid, Tannin, Resin.



Fig: Whole plant of *Mentha piperata*

Mentha piperita, a member of the Labiatae family, is well recognized as a highly esteemed botanical specimen globally. Its extensive historical use in medicinal formulations has been consistently associated with a commendable safety profile.[22] The leaf of this plant is used for therapeutic purposes in many ailments such as the common cold, liver inflammation, inflammation of the mouth, throat, and gastrointestinal tract, as well as gastrointestinal issues including nausea, vomiting, diarrhea, cramps, flatulence, and dyspepsia. Antioxidant, antibacterial, antiviral, anti-inflammatory, and anti-carcinogenic are additional uses for it [23-24]. Plants are known to contain a variety of phytochemicals, such as polyphenols, which are less hazardous than manufactured antioxidants while still being very efficient. It contains salicylic acid and has potent antibacterial capabilities, both of which are good acne preventives. Additionally, it contains vitamin A, which regulates oil production in persons with oily skin and acne prone skin. Utilizing this chemical topically while cleaning your pores may aid in treating acne. [25,26]

Properties of *Mentha piperata*:

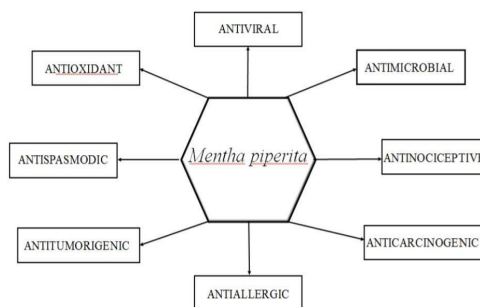


Figure 1: Properties of *M. piperita*.

Benefits of *Mentha piperata*:

- Demonstrates a high nutritional content.
- Exhibits potential therapeutic effects on irritable bowel syndrome.
- Facilitates digestive processes.
- Exhibits potential antiviral properties against the common cold.
- Enhances cognitive function.
- Alleviates symptoms of asthma and cough.
- Reinforces the immune system.
- Exhibits potential efficacy in managing various skin conditions.
- Cancer Symptom Prevention [27]

Tridax Procumbens Linn

Synonym:

Coat buttons, tridax daisy **Family:** Asteraceae

Chemical Constituent: Procumbenetin, a flavonoid compound, has been extracted from the above-ground components of *Tridax procumbens*. Additional chemical components that have been extracted from the plant consist of alkyl esters, sterols, pentacyclic triterpenes [28] [29], fatty acids [30], and polysaccharides.



Fig: Whole plant of *Tridax Procumbens Linn*
DOI: 10.48175/IJARSCT-13197

Procumbens Tridax Linn, a medicinal plant also known as coat button, kansari (Hindi), or ghamara (in local dialect), is a member of the Compositae family of plants together with Tridax procumbens and T. balbisioides. [31] a therapeutic plant The other species in the genus are Tridax procumbens, often known as Coat Button, Kansari (in Hindi), or trilobata. This herb is primarily utilized in Indian traditional medicine. The plant under consideration is a weed native to Central America, known for its annual or perennial growth habit. It has been seen in many regions throughout India, with a higher prevalence in the states of Maharashtra, Madhya Pradesh, and Chhattisgarh.[32]. The use of seeds is known to have hemostatic effects, whilst the leaves possess features such as antisecretory, insecticidal, wound-healing, and hypotensive activities [33].

III. METHODOLOGY

Chemical and glassware:

The Fabtech College of Pharmacy provided all the chemicals, materials, tools and reagents used in the formulation development.

Collection of plants:

The plants were collected from botanical garden of the college and were identified at Botany Department of the Sangola Science College, Sangola.

Preparation of Tulasi extract

The leaves of Ocimum sanctum Linn were harvested and subjected to a drying process at a temperature of 40°C (+/-) 1°C for a duration of two days. The leaves are then pulverised using grinders and thereafter kept in hermetically sealed bags until the extraction process. The user has provided a numerical reference. The dried powder is next subjected to extraction using 100% ethanol as the solvent. A quantity of 25 grammes of powdered drug is introduced into a solvent consisting of 150 millilitres of 100% ethanol. The mixture is then allowed to stand undisturbed for the duration of one night. The user did not provide any text. The extract should be filtered and allowed to undergo evaporation for a period of 24 hours at ambient temperature. The solid residue of Ocimum sanctum Linn is obtained as a result of evaporation.[36].



Preparation of Tulsi extract

Preparation of Tridax Procumbens linn extract:

The leaves of Tridax Procumbens Linn. were harvested and subjected to a drying process at a temperature of 40°C (+/-) 1°C for a duration of two days. The leaves are further pulverised using grinders and then placed in hermetically sealed bags to ensure air tightness, where they are kept until the extraction process [37]. The desiccated powder is next subjected to extraction using 100% ethanol as the solvent. A quantity of 25 grammes of powdered medication is introduced into a solution consisting of 150 millilitres of 100% ethanol solvent. The mixture is then allowed to stand undisturbed for the duration of one night. The next day, the extraction procedure is conducted, which is then done three times. Afterward, the solvent that has been filtered is removed, and the resulting extract is held at a temperature of 5-6°C until further processing.[38]



Preparation of Mentha extract:

Leaves of *Mentha piperata* were collected and dried at 40°C (+/-) 1°C for two days. Then leaves are grinded by grinders and kept in packet of the air tight bags till the process of extraction.

The dried powder is further taken and extracted with the absolute ethanol as solvent. In this 25 g of powdered drug is added into 150 milliliters of absolute ethanol and kept for 24 hrs. On the following day the process of extraction is carried out the process is repeated 3 times afterwards the filtered solvent was removed and the obtained extract is stored at 5-6°C till further processing.[39]

Formulation of anti-acne cream

Sr.no.	Ingredients	Quantity given for 100 gm.	Quantity taken for 50 gm	Uses
1	Bees wax	16 gm	8gm	Emollient
2	Liquid Paraffin	50ml	25ml	Emollient
3	Propyl Paraben	0.02ml	0.01ml	Preservative
4	Merhyl Paraben	0.18gm	0.09gm	Preservative
5	Borax	0.8gm	0.4gm	Emulsifying agent
6	Water	30ml	15ml	vehicle
7	Mentha piperata extract	1gm	0.5gm	Antibacterial and anti-inflammatory properties.
8	Ocimum Sanctum Linn Extract	3ml	1.5ml	Antibacterial properties
9	Tridax Procumbens linn extract	2ml	1ml	Antioxidant

IV. REVIEW OF LITERATURE

In a scholarly article authored by Prof. Hywel C. Williams and Robert P. Dellavalle MD, titled "A Comprehensive Overview of Acne Vulgaris," the authors discuss the pathophysiology of this dermatological condition. They highlight that acne vulgaris primarily affects the pilosebaceous unit of the skin, which comprises hair follicles interconnected with sebaceous glands. Acne is characterized by clinical manifestations such as seborrhea, which refers to an excessive production of grease on the skin. Furthermore, it is common to see noninflammatory cutaneous lesions, such as open and closed comedones, alongside inflammatory lesions such as papules and pustules. Furthermore, acne may result in varied degrees of scarring. The regions of the human body characterized by the highest concentration of pilosebaceous units include the facial area, neck, upper chest, shoulders, and back, which are also the primary sites where acne vulgaris tends to manifest. Severe nodulocystic acne is distinguished by the presence of nodules and cysts. This

article provides a summary of the clinical features associated with acne vulgaris, a prevalent form of acne. Various aspects of acne have been subject to scrutiny, including the classification of acne, the occurrence of scarring, the presence of acne rosacea, the manifestation of chloracne, the association between acne and polycystic ovarian syndrome, the occurrence of infantile acne, the occurrence of acne inversa, and development of drug-induced acne.

The writers Lizelle Fox, Candice Csongradi, Marique Aucamp, Jeanetta du Plessis, and Minja Gerber were examined in the national journal about the progression and pathophysiology of Acne, as well as the factors contributing to its occurrence. This article discusses the severity of acne as a dermatological condition. Acne, a common dermatological condition, is influenced by four widely acknowledged pathological variables that serve as the focal point for acne treatment interventions. The article is titled "Treatment Modalities for Acne." This study examines several therapy strategies, including both topical interventions such as retinoids and antibiotics, as well as systemic approaches including retinoids, antibiotics, and hormonal therapies.

Satpute KL and Dr. Kalyankar TM are two researchers who have made significant contributions in their respective fields. Acne is a dermatological condition that is distinguished by the presence of both inflammatory and non-inflammatory lesions. The etiology and development Acne lesions are influenced by a range of variables, including hormonal, bacterial, and immunological components. Propionibacterium acnes and Staphylococcus epidermidis have been identified as bacterial species that contribute to the formation of pus and the initiation of inflammatory responses in acne. The current study focuses on the development and assessment of a Herbal cream targeting the causative agent of acne vulgaris. The Boswellia oil was extracted and then processed into a topical cream formulation. The agar well diffusion technique was used to assess the in vitro antibacterial activity against P. Acnes, S. Epidermidis, and S. Aureus. The measured zones of inhibitions observed in the Prepared formulations were compared to those of a conventional antibiotic. (The study compared the efficacy of Clindamycin, a commonly prescribed antibiotic, with a commercially available topical herbal preparation. The creams that were made underwent evaluation for many parameters including pH, viscosity, spreadability, stability, drug content, and in vitro diffusion. The findings obtained from the agar well diffusion experiment indicate that the herbal formulations including Boswellia oil has inhibitory effects on the development of P. Acnes and S. Epidermidis, as well as creams. The antibacterial activity against these microorganisms shown significant relevance when compared to the standard.

The article titled "Acne Vulgaris – A Disease of Western Civilization" authored by Loren Cordain, PhD; Staffan Lindeberg, MD, PhD; and Magdalena Hurtado in December 2002, presents a comprehensive analysis highlighting the gravity of the Acne illness within Western society. The significant discrepancy in the occurrence rates of acne between non-Westernized and fully modernised nations cannot be only attributed to genetic variances across individuals. Instead, it is probable that several environmental factors contribute to this phenomenon. The discovery of these characteristics may be advantageous in the treatment of acne among Western populations.

The present study focuses on the development and subsequent assessment of a cosmetic product that incorporates antibacterial properties derived from herbal sources. Authored by Sonika Pandey, Akanksha Seth, Rajesh Tiwari, Sunita Singh, H. M. Behl, and Suman Singh. The author provides a comprehensive description of the evaluation tests for the cream in accordance with the pharmacopoeia. The paper outlines the specific procedures for conducting stability tests, spreadability tests, viscosity tests, pH testing, irritant tests, and other relevant assessments.

Tejswini Devidas Navgire, Madhuri Baburao Pawar, they mentioned all the formulation process and the evaluation tests that are required for the cream in their article with the name of "Formulation and Evaluation of Cold Cream"

The article titled "Chemical and biological investigations on Azadirachta indica (the neem tree)" authored by T. R. Govindachari on August 10, 1992, provides comprehensive information on the botanical aspects of Azadirachta indica, including its chemical constituents, synonyms, geographical sources, and other relevant details.

V. PROCEDURE

The experimental procedure involves the use of a borosilicate glass beaker to subject a mixture of liquid paraffin and beeswax to a temperature of 75 °C, which is thereafter maintained throughout the duration of the experiment. This portion of the experiment is referred to as the oil phase. To generate an aqueous phase (clear solution), it is recommended to dissolve borax and methylparaben in distilled water and thereafter subject the mixture to heating in a separate beaker, raising the temperature to 75°C. The heated oily phase will then gradually receive this watery phase.

After that, whisk vigorously while adding the appropriate amount of *Ocimum sanctum* Linn extract, *mentha piperata* extract, *Tridax Procumbens* Linn. to create a smooth cream. Next, include a little quantity of rose water to enhance the olfactory aspect. Apply the cream over the surface and, if deemed required, include a small quantity of distilled water. Subsequently, the creams should be arranged in a geometric configuration onto the slab, so imparting a refined texture to the cream and ensuring thorough amalgamation of all constituent elements. This particular procedure is sometimes referred to as the extemporaneous method of cream preparations or the slab technique.



Evaluation of cream:

Physical properties:

Color: Faint Green

Odor: Perfumed smell

Homogeneity:

The homogeneity of the formulations was evaluated through touch and visual appearance

Appearance:

The cream's color and roughness served as indicators of its appearance.

pH Evaluation:

The pH of the solution was determined by using a pH meter. Prior to use, the electrode undergoes calibration by using a neutral buffer standard with a pH value of 7.01, as well as an acidic buffer solution with a pH value of 4.01. The electrode is next. It is immersed in a nano emulsion preparation. The device logs the pH value that is specified there. The measurements were conducted at room temperature.



The pH range of a topical preparation should be between 4.5 and 6.5, which is also the pH range of the skin. Both an excessively alkaline and an excessively acidic pH might irritate your skin.

Determination of Viscosity:

The viscosity of the formula was assessed by means of a Brookfield viscometer at ambient temperature (28°C–20°C). The mixture was introduced into a glass beaker until it attained a capacity of 100ml. Subsequently, the spindle was lowered until the border of the spindle was fully immersed in the preparation. The third spindle is being used. The viscometer was activated by depressing the power button. The spindle speed is thereafter determined by selecting the appropriate revolutions per minute (30 rpm). Once the red needle has come to a rest, proceed to determine the measurement by observing the scale, also known as the dial reading. In order to determine the viscosity in centipoise (cps), it is necessary to multiply the reading on the dial by the correction factor. [40]

Spreadability test

The area to which a cream spread readily when applied to skin or an affected area is referred to as its spreadability. A cream's capacity to spread has an impact on both its bioavailability and effectiveness. How quickly two slides operating under a particular load separated from the cream positioned in between the slides served as a measure of spreadability. A more rapid separation of the two slides results in enhanced spreadability. Two sets of glass slides with uniform diameters were selected. The cream mixture was administered onto one of the slides. The additional slide was positioned over the layer of cream. The cream was placed on the slide, precisely 6.0 cm away from the starting point, and was positioned between the two slides.

By adding weight to the top slides, the cream between them was uniformly squeezed to create a fine layer. After the removal of the weight, any excess cream adhered to the slides was subsequently scraped off. The two slides were securely affixed to a platform, ensuring little movement. The weight attached to the top slide allowed for their controlled release. The top slide was securely affixed using a weight of 20 grammes. The vertical displacement of the top slide from the bottom slide, after the impact of the weight, was measured to be 6.0 cm.

The following formula was used to determine spreadability:

$$S = m \cdot l / t$$

Where,

S - Spreadability

m - A load attached to the top of the slide l - Glass's length (6 cm)

t - Time in seconds.

Feeling after application:

Emollience, slipperiness, and the quantity of deposit remaining after application of the predetermined quantity of cream were evaluated.

Smear type:

After the sample was applied to the skin, researchers looked at what kind of film or spread emerged.

Skin irritation test:

For the initial skin irritancy test, albino rats weighing between 150 and 200 grammes were employed. Water and common animal feed were employed to maintain the animals. Have free and unrestricted access to water. The animals were kept in standard lab settings. From the total mass, four batches of seven animals each were produced. Each of the test and control groups received two batches of each. The dorsal hairs on the backs of the rats were clipped by researchers one day before the trial began. Animals with normal skin texture were kept separately in cages with copography meshes to prevent contact with the bedding.

Observation:

Sr.No	Evaluation Parameters	Observation
1	Color	Faint green
2	Odor	Perfumed Odor
3	Homogeneity	Homogeneous
4	Appearance	Smooth
5	PH	Neutral
6	Skin Irritation	No Irritation
7	Spreadability	Spreadable

VI. DISCUSSION

Tulsi (*Ocimum sanctum*), Mentha (*Mentha spp.*), and *Tridax procumbens* are well recognized for their medicinal properties in ayurvedic formulations and traditional Indian medicine. The decision was made to extract and formulate a

natural facial cream for the present study. Due to the O/W (oil-in-water) emulsion nature of the herbal face cream, it has the advantageous characteristic of being easily rinsed off with plain water, hence enhancing customer adherence. Herbal cosmetics, which are derived from natural sources, are highly sought after in the international market due to their inherent value. Consequently, an endeavor was made to develop a botanical facial cream by using different amounts of extracts derived from *Symplocos racemosus*, Tulsi, Mentha, and *Tridax Procumbens*. Based on our study findings, it was established that the formulations exhibited enhanced stability. In terms of inducing cutaneous rashes and sensitization to allergies, the stable formulations shown a high level of safety. The intended purpose of the manufactured herbal face cream is for cosmeceutical use, rather than being utilised like other conventional cosmetics. The use of extracts derived from *Symplocos racemosus* has been shown to possess therapeutic properties for the treatment and alleviation of irritated skin, scar reduction, as well as the prevention of acne development in those with a predisposition to such conditions. The extract derived from Mentha has characteristics that exhibit antibacterial and anti-inflammatory effects. The extract derived from the Tulsi plant has antimicrobial properties. Therefore, these attributes provide benefits to the well-being of human keratinocytes, making the material both secure and enduring. Based on the findings of this study, the composition of the cream's extracts and base is designed to optimize stability and perhaps enhance synergistic effects.

VII. CONCLUSION

In this study, formulations were developed by incorporating plant extracts at different concentrations into various base materials. The good determination of viscosity and spreadability was observed in all conducted experiments. The formulated herbal cream exhibits superior characteristics and has significant nutritional value, hence minimizing the reliance on chemical compounds for safeguarding the skin against diverse dermatological issues. The affordability of the cream may be attributed to its production using rudimentary ingredients and a simplified manufacturing procedure. The use of the Herbal cosmetic Mixture may serve as a protective barrier for the skin, ensuring its safety during application. The findings of several cream experiments suggest that the composition has the potential to be administered externally for the purpose of protecting the skin from damage. The notion that natural medications provide a higher level of safety and a reduced incidence of adverse effects compared to synthetic counterparts makes them more widely embraced. Further study will be undertaken in order to validate the synergistic effects of Formulation Scientifically.

ACKNOWLEDGEMENT

The authors are grateful towards the whole heartedly co-operation of management of Fabtech Education Society, for their continuous motivation and cooperation.

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