

Formulation and Comparative Analysis of Cosmetic Products

Akanksha Sharad Wankhede, Sanskruti Yogesh Shahane, Pallavi B. More

Department of Biotechnology

Institute of Bioscience and Technology, MGM University, Chh. Sambhajinagar

Abstract: *Herbal cosmetics are natural cosmetics in which herbs are being used in crude or extract form. Herbal cosmetic products contain natural antioxidants like vitamin C and other minerals. Herbal ingredients are more effective than synthetic ones. There is an increasing demand for herbal beauty products, and herbal products. To treat skin, and hair issues. Herbal extracts are primarily incorporated into beauty products. Herbal ingredients that protect skin from UV rays and pollution include vitamins, witch hazel, willow herb, green tea extract, and botanical extracts. The study emphasizes the utilization of natural ingredients derived from medicinal herbs, and essential extracts. For the herbal lip balm, the focus was on providing natural healing for soft and healthy lips, while the herbal hair serum aimed at nourishing and revitalizing hair, and the moisturizer aimed at hydrating and rejuvenating the skin. The research involved rigorous formulation experiments, incorporating various botanical elements, and assessing their efficacy, sensory appeal, and environmental sustainability. Herbal Lip Balm. The herbal lip balm research emphasized the significance of natural ingredients in lip care. The study explored the healing properties of herbs and essential oils, creating a soothing and effective solution for chapped lips. The herbal hair serum research focused on revitalizing hair health. Strengthens hair follicles, and promotes hair growth. The study focused on the moisturizer's ability to maintain skin elasticity, improve texture, and promote a healthy complexion. Sustainable practices were integrated, ensuring the product's environmental impact was minimized in conclusion.*

Keywords: formulation, follicles, elasticity, revitalizing

I. INTRODUCTION

Cosmetics are pharmaceutical products that are used for improving skin appearance and body odor. These products are available in various forms, ranging from lotions, creams, powders, and so forth. Cosmetics are used for cleansing, protecting, and moisturizing the skin. Generally, consumers prefer to choose cosmetics that have less harmful effects on their skin. "Cosmeceutical" products have now been developed by many pharmaceutical industries. A cosmeceutical is the combination of a topical cosmetic and a pharmaceutical that is used for enhancing beauty through ingredients that have biological functions related to the skin. The topical cosmetic, which contains antioxidants, is used to protect human skin against the damage caused by ultraviolet radiation (UVR) and by free radicals. The word 'Cosmetic' derived from a Greek word – 'kosmesticos' that means to adorn. From that time any materials used to beautification or promoting appearance is known as cosmetic. The word "cosmetics" actually stems from its use in Ancient Rome. They were typically produced by female slaves known as "cosmetae" which is where the word "cosmetics" stemmed from. Cosmetics are used to enhance appearance. Makeup has been around for many centuries. The first known people who used cosmetics to enhance their beauty were the Egyptians. Makeup those days was just simple eye coloring or some material for the body. Now a day's makeup plays an important role for both men and women. The importance of cosmetics has increased as many people want to stay young and attractive. Cosmetics are readily available today in the form of creams, lipstick, perfumes, eyeshadows, nail polishes, hair sprays etc. Other cosmetics like face powder give glow to the skin after applying the base cream. Then we have lipsticks, which are applied by many women of all ages. They are made from wax and cocoa butter in the desired amount. Generally herbal cosmetics are also referred to as natural cosmetics. Herbal cosmetics are formulated, using different cosmetic ingredients to form the base in which one or more herbal ingredients are used to cure various skin ailments. Plants are highly used for development of new drug

products for cosmeceuticals and pharmaceutical applications. Herbal cosmetics are the products in which herbs are used in crude or extract form. Products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefits only, shall be called as “Herbal Cosmetics”. The best thing of the herbal cosmetics is that it is purely made by the herbs and shrubs and thus is side-effects free. The natural content in the herbs does not have any side effects on the human body; instead provide the body with nutrients and other useful minerals. Serum is one of the cosmetic products with very high concentration of active ingredient in their formula for providing intensive nutrition to the deeper skin layer and non-greasy finish product which suitable for skin. Herbal toilet article is more preferred and is employed within the repairmen of the many ailments of hair. They promote hair growth, improve elegance of hair and forestall hair fall. Moisturizers are topically applied products designed to increase the water content of the skin. Ingredients used in these products have a range of actions, including preventing transepidermal water loss and promotion of desquamation. Moisturizer application smooth’s skin surface by filling spaces between partially desquamated skin flakes and restores the ability of the intercellular lipid bilayers to absorb, retain and redistribute water. The primary purpose of lip balm is to provide an occlusive layer on the lip surface to seal moisture in lips and protect them from external exposure. Dry air, cold temperatures, and wind all have a drying effect on skin by drawing moisture away from the body. Lips are particularly vulnerable because the skin is so thin, and thus they are often the first to present signs of dryness.

II. METHODOLOGY

Procedure of Herbal Hair Serum Formulation: first we cleaned all the glasswares and dried them properly. Then measured the accurate quantity of aloe vera and transferred it into the beaker. Mixed the required quantity of vit E in aloe vera. Then mixed rose water to the mixture of aloe vera and vit E and stirred it for few min. After that heated the prepared solution for few minutes. Then added few drops of glycerine and stirred with the help of magnetic stirrer. After all this the prepared solution was transferred into the measuring cylinder for volume adjustment. Then stored the serum in an air tight container.

Procedure of Herbal Lip Balm: All the materials were weighed accurately on a digital balance. Preparation method opted for the preparation of herbal lip balm stick was of heating solid raw ingredients at consistent temperature with indirect flame bees wax was crude and grinded into small uniform size and was melted in 50 ml beaker in indirect flame with an highest temperature of 90°C . All other ingredients like vitamin E, Beetroot extracted powder (dry) , Rose essence , Aloe vera were mixed vigorously and added to the mixture and mixture was stirred continuously till homogenous mixture was obtained and was poured into balm stick moulds just before pouring glycerine was applied over the mould with cotton The moulds were kept in ice bath aside for about an hour in cool and dry place indirect to sunlight till it solidifies and was used after 48 hours after keeping at room temperature for stability and analytical testing.

Procedure of Herbal Moisturizer: First of all, for the formulation of herbal cream we have to collect different types of glassware like beaker, spatula, measuring cylinder, petri dish or different types of equipment like stirrer mixer etc. After that we have to extract pure Aloe vera gel from leaves of *Aloe barbadensis miller*. Then we have to make three different formulations in different batches F1, F2, F3. In F1 we will use Aloe vera gel (1gm), glycerine (2 drops), rose water (2 drops), vitamin E capsule (1 drops). In F2 we will use Aloe vera gel (4gm), glycerine (3drops), rose water (2drops), &vitamin E capsule (2 drops). In F3 we will use Aloe vera gel (7gm), glycerine (2drops), rosewater (3drops), &vitamin E capsule (3 drops). We mainly use glycerine because it acts as a moisturizing agent. Rose water work as a skin toner and gives a vital role as a fragrance. Vitamin E capsule prevents sunburns and improves skin growth.

Comparative Study of Synthetic and Herbal Cosmetic Products: Measurement of pH: The pH of Cosmetic products were determined in order to investigate the possibility of any side effects. The pH study was carried out by dissolving 1gm of sample into 100 ml water. The pH measurement was done using pH strip. pH of lip balm was near to neutral(6.5) pH of hair serum was near to neutral (7.5) pH of moisturizer was near to neutral (7.0)

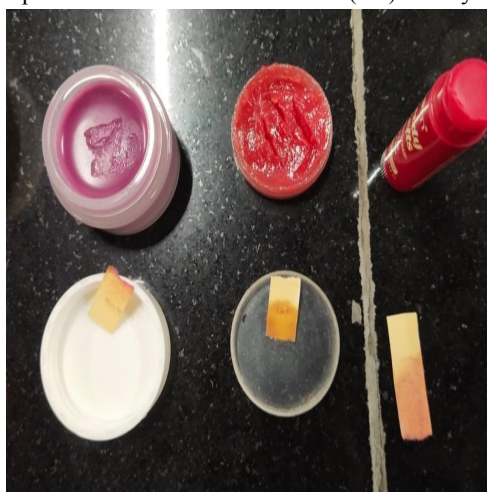
Skin Sensitivity - It was carried out by applying the product in the form of a patch on the skin for 30 min and observe the reaction as- No reaction Redness of the skin Itching, swelling inflammation.

III. RESULTS AND DISCUSSION

Formulation of herbal hair serum, herbal lip balm, herbal moisturizer.



Comparative pH analysis of herbal lip balm which was about neutral (6.5) was by done by pH paper.



Comparative pH analysis of herbal moisturizer which was about neutral (7.5) was by done by pH paper.



Comparative pH analysis of herbal hair serum which was neutral (7.0) was by done by pH paper.



Comparative analysis of lip balm used according to colour and texture



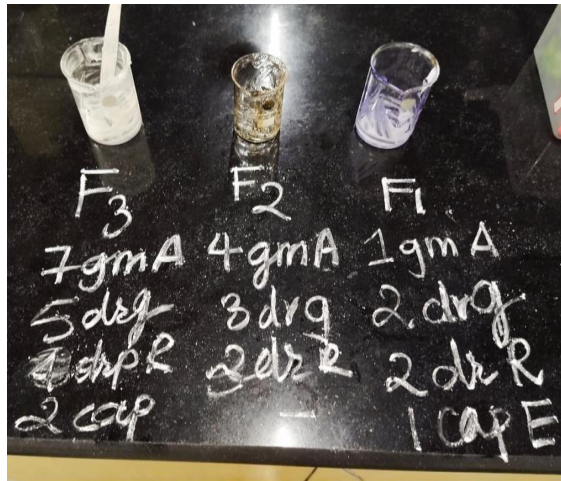
Comparative analysis of Hair serum used according to colour and texture.



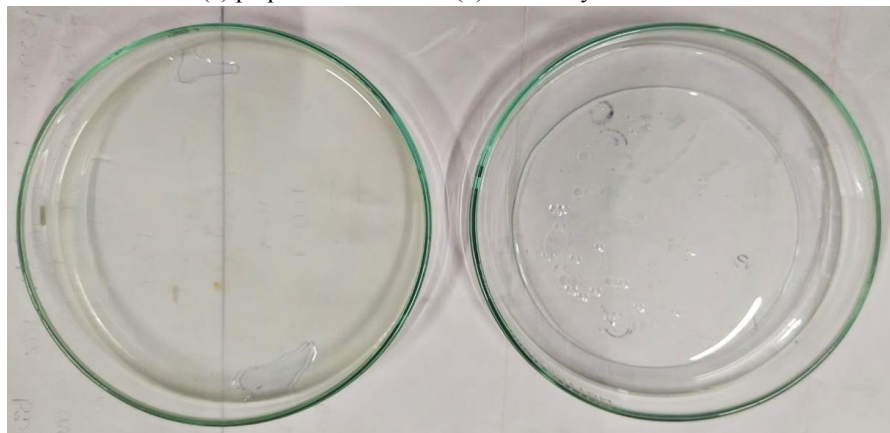
Comparative analysis of moisturizer used according to colour and texture



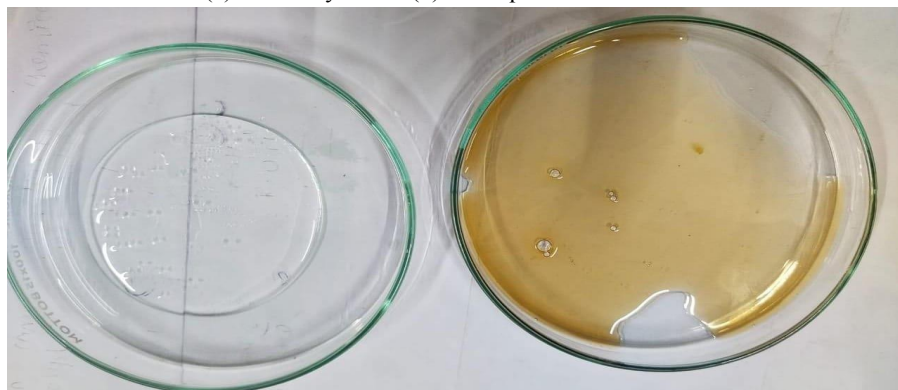
Optimization of perfect batch suitable for formulation of moisturizer



Comparative texture of hair serum (a) prepared formulation (b) Skin story hair serum.



Comparative texture of hair serum (a) skin story serum (b) Boutique hair serum



Certainly, the field of herbal cosmetics has seen significant advancements in recent years. Researchers have been focusing on harnessing the power of natural ingredients to create effective and sustainable cosmetic products. Recent Trends in Herbal Cosmetic Researchers are exploring novel herbal extracts and plant-based compounds with proven skincare benefits. Sustainable and eco-friendly packaging solutions are being integrated into herbal cosmetic products to reduce environmental impact.

"Innovations in Herbal Cosmetics: A Comprehensive Review" This paper provides a thorough analysis of the recent advancements in herbal cosmetics. It highlights the formulation techniques, efficacy studies, and market trends related to herbal cosmetic products. The paper discusses the integration of traditional herbal knowledge with modern scientific methods, emphasizing the synergy between nature and technology in cosmetic formulations.

"Herbal Cosmeceuticals: Recent Trends and Future Prospects" this paper delves into the concept of herbal cosmeceuticals, emphasizing their therapeutic properties along with cosmetic benefits. It explores the use of herbs like turmeric, neem, and aloe vera in skincare products, showcasing their antioxidant, anti-inflammatory, and antimicrobial properties. The paper discusses clinical trials and case studies validating the effectiveness of herbal cosmeceuticals in treating various skin conditions, contributing to evidence-based herbal skincare.

Recent Work: Green Extraction Techniques Researchers are focusing on eco-friendly extraction methods such as supercritical fluid extraction and microwave-assisted extraction to obtain bioactive compounds from herbs. These green techniques ensure higher yields of active ingredients while minimizing the use of solvents, aligning with the sustainable ethos of herbal cosmetics.

Herbal Nanotechnology: Nanotechnology is being employed to enhance the delivery of herbal extracts into the skin, ensuring better absorption and efficacy.

IV. CONCLUSION

In conclusion, the research underscores the potential of herbal cosmetics in promoting natural beauty and well-being. The formulations developed for herbal lip balm, hair serum, and moisturizer showcase the efficacy of herbal ingredients in addressing specific cosmetic needs. These products not only offer tangible benefits in terms of skin and hair health but also align with the increasing consumer demand for eco-conscious and chemical-free alternatives. The studies affirm that herbal cosmetics, when thoughtfully formulated, can outperform their synthetic counterparts while minimizing environmental harm. The research outcomes advocate for the wider adoption of herbal formulations in the cosmetics industry, emphasizing the importance of sustainability, efficacy, and user experience. As consumers continue to seek natural, holistic approaches to personal care, herbal lip balm, hair serum, and moisturizer stand out as compelling choices, embodying the synergy of nature and science in the realm of beauty and skincare.

ACKNOWLEDGMENT

The success of any project depends largely on the team work and also encouragement and guidelines of many others. We take this opportunity to express our gratitude to the people who have been instrumental in the successful completion of this project. We gratefully place on record our gratitude towards Dr. A. S. Khemnar, Director, Institute of bioscience

and technology MGM University for providing necessary infrastructure and resources to accomplish our research work. We are thankful to Dr. S. N. Harke, HOI for supporting us during the whole curriculum. We would also like to Thank to the other members of Team IBT, who inspired us during this unforgettable journey.

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