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Review on Multipurpose Cream

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Abstract: ***They may treat several skin issues with a single recipe, multipurpose creams have become a lucrative market niche in the pharmaceutical and cosmetic sectors. These creams offer a practical skincare solution by combining moisturizing, anti-inflammatory, antibacterial, and other therapeutic properties. With careful consideration for stability, consistency, and dermatological safety, multifunctional cream formulations combine an oil phase, an aqueous phase, emulsifiers, preservatives, and active components. Recent developments in emulsification methods, such liposomal delivery systems and Nano emulsions, have improved the effectiveness and skin penetration of active substances. Additionally, the incorporation of botanicals like neem, turmeric, and aloe vera into formulations has increased their popularity due to the rising consumer desire for natural and herbal components. For product quality assurance, evaluation tests such as pH, spreadability, viscosity, and stability studies are essential. The safety and compliance of multifunctional creams are guaranteed by regulatory guidelines issued by organizations such as the FDA and EMA. The main ingredients, formulation techniques, assessment techniques, and market trends related to multifunctional creams are highlighted in this study, along with the difficulties and potential future developments in this expanding industry. The ongoing development of these formulas is expected to satisfy the growing need for skincare products that are efficient, eco-friendly, and customized.***

Keywords: ***Multipurpose cream, formulation, herbal ingredients, emulsion systems, skin care, evaluation, Nano emulsion, stability, regulatory considerations, market trends.***

I. INTRODUCTION

The biggest organ in the human body, the skin serves as the body's main defence against physical harm, microbial invasions, and environmental assaults. As a result, topical formulations have been increasingly popular over the past few decades, and skincare has become an essential component of human health and wellness. Because to their simplicity of use, attractive appearance, and efficient delivery of active substances, creams have become one of the most popular dosage forms among these topical treatments. Because of its multifunctionality and ability to combine many medicinal and cosmetic effects into a single formulation, multipurpose creams in particular have grown in popularity[1-2].

Semi-solid emulsions known as multipurpose creams serve several purposes, most typically moisturizing, protecting against the sun, whitening the skin, preventing ageing, having antibacterial properties, and treating small wounds or inflammations. Usually made comprised of a blend of water and oil phases, these formulations are stabilized by emulsifiers and enhanced with functional excipients, thickeners, preservatives, and active medicinal or cosmetic ingredients. They are perfect for both routine skincare and dermal treatment because of their capacity to deliver active chemicals topically while preserving the integrity and health of the skin[3-4].

A multifunctional cream's formulation is a complicated procedure that calls for careful evaluation of a number of variables, including as the stability of the emulsion system, the physicochemical characteristics of the active ingredients, and the choice of suitable excipients. A suitable consistency, ease of application to the skin, efficient absorption, and stability under a range of storage circumstances are all requirements for the cream. It must also adhere to dermatological and regulatory safety requirements and be non-greasy and non-irritating. The ultimate properties and use of the product are determined by the base type—oil-in-water (O/W) or water-in-oil (W/O). W/O emulsions are employed for their occlusive, longer-lasting properties, whereas O/W emulsions are usually used for water-washable, non-greasy creams[5-6].

II. TYPES OF CREAMS & EMULSION SYSTEMS

Oil-in-water (O/W) and water-in-oil (W/O) are the two main emulsion systems used to classify creams, which are semi-solid emulsions. O/W creams are non-greasy, readily washable, and appropriate for both cosmetic and everyday usage since they are made up of oil droplets scattered over a continuous water phase. W/O creams, on the other hand, are perfect for dry or sensitive skin since they include water droplets mixed with oil, which improves Moisturization and occlusive properties.

The texture, velocity of absorption, and intended use of the cream are all greatly impacted by the emulsion system selection. For better distribution and stability, advanced formulations may also include lipid-based systems, multiple emulsions, or Nano emulsions[7-8].

III. COMMONLY USED INGREDIENTS

A combination of active substances, bases, and functional excipients make up multipurpose creams. Common active ingredients include synthetic agents like niacinamide or allantoin, which have antibacterial, anti-inflammatory, and skin-repair properties, as well as botanical extracts like neem, aloe vera, and turmeric. Emollients (such stearic acid and cetyl alcohol), humectants (like glycerin and propylene glycol), oils (like coconut and almond), and water are examples of base ingredients. For stability and consumer appeal, preservatives (such parabens and phenoxyethanol), emulsifiers (like polysorbates), and perfumes are added. Due to customer desire for natural skincare products and their safety and effectiveness, herbal and organic components are becoming more and more popular[8-10]

IV. FORMULATION STRATEGIES

Depending on the intended skin advantages, choosing the right active ingredients, base ingredients, and emulsion system (O/W or W/O) is necessary when creating a multifunctional cream. To guarantee stability, the aqueous and oil phases are heated independently before being emulsified using homogenization procedures. For the proper consistency and spreadability, thickeners, humectants, and emulsifiers are added. Selecting the right preservative and extract compatibility are essential for herbal creams. While antioxidant addition extends shelf life, pH correction guarantees skin friendliness. Advanced techniques for enhancing component stability, skin penetration, and therapeutic efficacy in multipurpose topical formulations include encapsulation, Nano emulsions, and liposome delivery systems[11-12].

V. FORMULATION

In order to formulate a multifunctional cream, an oil phase (such as stearic acid, coconut oil, or cetyl alcohol) and an aqueous phase (such as distilled water, glycerin, or herbal extracts) are combined to create a stable emulsion. To create a homogenous emulsion, the two phases are heated independently to 70–75°C and then combined while being constantly stirred. As it cools, emulsifiers (like polysorbates 60), preservatives (like phenoxyethanol or parabens), and active ingredients (including niacinamide, aloe vera, and turmeric) are added. The resulting cream's stability, spreadability, texture, and pH are assessed. For multipurpose topical usage, proper homogenization guarantees a constant texture, improved absorption, and extended shelf life[13-14].

FIG.1: ALOE & TURMERIC

VI. EVALUATION TEST

To guarantee quality, safety, and effectiveness, multipurpose creams go through a number of assessment tests. Color, texture, and odour are examples of organoleptic qualities that are visually examined. To guarantee skin compatibility, pH is tested. While viscosity shows consistency and flow behaviours, spreadability is evaluated to determine ease of application. Phase separation and shelf life are checked by stability experiments conducted at various temperatures and humidity levels.

Dermatological safety is confirmed by patch testing for skin irritation. Product cleanliness is ensured by microbial load testing. To assess user acceptability, further tests are conducted, such as wash ability, greasiness, and homogeneity. All of these tests confirm the cream's efficacy and suitability for the market[15-16]

VII.REGULATORY CONSIDERATIONS

For multipurpose creams to be safe, effective, and of high quality, they must adhere to national and international regulatory criteria. The 1940 Drugs and Cosmetics Act governs these kinds of goods in India. Guidelines for cosmetic and medicinal creams are provided by the FDA (USA) and EMA (Europe) worldwide. A list of components, batch number, production and expiration dates, usage guidelines, and cautions must all be included on the label. Approval requires microbiological limits, stability tests, and preservative effectiveness. Additional documentation, such as toxicological data and clinical safety, can be needed if active pharmaceutical components or herbal remedies are employed. Good Manufacturing Practices (GMP) must be followed[17-18]

VIII. RECENT ADVANCES AND MARKETED PRODUCTS

Innovative formulations that include multifunctional advantages are the focus of recent developments in multipurpose creams. A lotion containing Moringa oil was created by Patel et al. (2024) and showed significant antibacterial and anti-inflammatory qualities. Commercially, goods like Egyptian Magic are multipurpose; they may be used as hair treatments, lip balms, and moisturizers. Likewise, Olay Super Cream offers several skincare advantages in a single product. In order to satisfy a range of consumer demands, these innovations combine hydration, protection, and medicinal benefits, reflecting a tendency towards multifunctionality[19-20].

IX. FUTURE SCOPE OF STUDY

The creation of clever formulas that adjust to the specific requirements of each skin type—such as pH-responsive and temperature-sensitive creams—is the key to the future of multifunctional creams. The bioavailability and targeted delivery of active components will be enhanced by developments in liposomal and Nano emulsion delivery methods. Demand for environmentally friendly, sustainable formulations that include herbal components supplied ethically, biodegradable packaging, and natural preservatives is also rising. With the use of AI and customer data, personalized skincare has the potential to produce creams that are suited to certain skin types and issues. Enhancing clinical trials, guaranteeing long-term safety, and increasing commercial potential could be the main topics of future study[20].

X. CONCLUSION

A major breakthrough in skincare, multipurpose creams provide users with a single remedy for a range of skin issues, from healing to anti-aging and moisturizing. The emulsion system, stability, and dermatological safety must all be carefully considered throughout the formulation process, which blends excipients and active components. By increasing ingredient penetration and stability, recent developments like liposomal delivery and Nano emulsion have increased the efficacy of these creams. The future of multifunctional creams will continue to be shaped by the use of botanicals and sustainable techniques as customer desire for natural and herbal goods increases. Although there are still issues with product stability, long-term safety, and regulatory compliance, these multipurpose skincare compositions have a bright future thanks to further research and technical developments.

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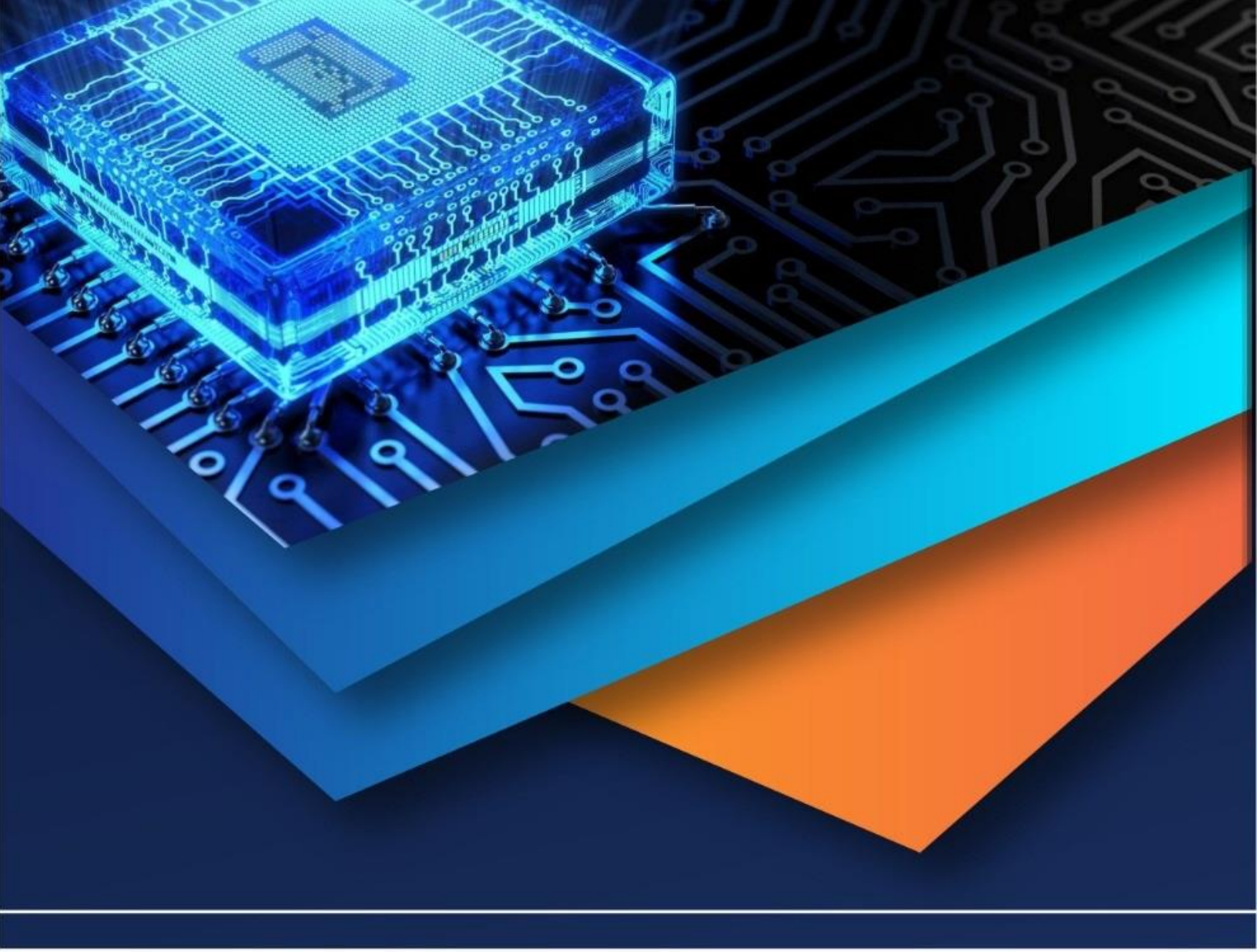

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