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Review Article

A Review on Formulation and Evaluation of Turmeric Herbal Cream

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ABSTRACT

Turmeric (*Curcuma longa*) is a widely used medicinal herb known for its powerful anti-inflammatory, antioxidant, and antimicrobial properties. The formulation of a turmeric-based herbal cream offers a promising approach for topical therapy against various skin conditions. This review discusses the formulation methods, evaluation parameters, and therapeutic potential of turmeric creams, citing recent research studies.

INTRODUCTION

Natural products have long been used in skincare formulations due to their therapeutic benefits and fewer side effects compared to synthetic compounds. Among them, turmeric has attracted significant attention owing to its main bioactive component, curcumin, which exhibits wound healing, anti-aging, and anti-inflammatory effects (Gupta et al., 2013 [1]). The preparation of a turmeric herbal cream aims to deliver these benefits directly to the skin in a stable, acceptable, and effective form.

Properties of Turmeric

Turmeric contains curcumin, demethoxycurcumin, and bisdemethoxycurcumin, compounds responsible for its medicinal properties. Curcumin, in particular, shows notable anti-inflammatory (Chainani-Wu, 2003 [2]), antioxidant (Menon and Sudheer, 2007 [3]), and antimicrobial activities (Rai et al., 2008 [4]). However, curcumin is poorly soluble in water, which poses challenges for topical formulations.

Formulation of Turmeric Herbal Cream

- The basic steps involved in the formulation of a herbal cream include:
- Selection of cream base: Common bases include oil-in-water (O/W) emulsions, as they

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are non-greasy and more acceptable cosmetically (Maheshwari et al., 2012 [5]).

- Incorporation of turmeric extract or powder: Alcoholic or hydroalcoholic extracts of turmeric are often used for better solubility and bioavailability.
- Use of natural oils and preservatives: Ingredients like aloe vera, coconut oil, beeswax, and natural preservatives such as vitamin E are often added to enhance stability and skin benefits (Sharma et al., 2014 [6]).

Typical formulation example:

- Turmeric extract: 5%
- Cream base (e.g., cetostearyl alcohol, mineral oil, water): 90%
- Preservatives and essential oils: 5%

Evaluation of Herbal Creams

- The quality and effectiveness of turmeric creams are evaluated through several parameters:
- Physical appearance: Colour, texture, and homogeneity (Patel et al., 2011 [7]).
- pH measurement: Should be compatible with skin pH (4.5–6.5).
- Spreadability: Indicates ease of application.
- Viscosity: Affects the stability and release of active ingredients.
- Microbial studies: Ensures the cream is free from contamination (Kumar et al., 2013 [8]).
- In vitro antimicrobial tests: Turmeric creams are tested against bacteria such as *Staphylococcus aureus* and *Escherichia coli* to evaluate antimicrobial efficiency (Rai et al., 2008 [4]).

Therapeutic Applications

Turmeric creams have shown promising results in treating:

- **Wound healing:** Accelerates the process by modulating collagen deposition and reducing inflammation (Sidhu et al., 1998 [9]).
- **Acne and blemishes:** Due to antimicrobial and anti-inflammatory properties.
- **Skin aging:** Antioxidants in turmeric reduce oxidative stress on the skin.
- **Hyperpigmentation:** Curcumin inhibits melanin production (Pawar and Gavvas, 2016 [10]).

Challenges and Future Prospects

Despite its benefits, turmeric's poor stability, susceptibility to photodegradation, and low skin penetration are major challenges. Techniques such as nanoemulsions and liposomal formulations are being explored to enhance the delivery and effectiveness of curcumin (Patel et al., 2009 [11]). Future studies should focus on developing more stable and targeted delivery systems, conducting large-scale clinical trials, and standardizing formulations to ensure consistent therapeutic outcomes.

CONCLUSION

Turmeric herbal cream represents a safe and effective natural therapy for a variety of skin ailments. With advancements in formulation techniques and standardization, turmeric creams could become mainstream therapeutic skincare products.

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