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MARIGOLD (CALENDULA) COLD CREAM - PHARMACEUTICAL FORMULATION, SKIN HEALING PROPERTIES, AND SAFETY

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Abstract

This review presents a comprehensive analysis of the formulation and evaluation of a cold cream containing Tagetes erecta (marigold) extract. Marigold is known for its anti-inflammatory, antioxidant, and wound-healing properties, making it a valuable herbal ingredient in topical formulations. The cold cream was prepared using the fusion method with excipients like beeswax, liquid paraffin, borax, and rose water. Evaluation parameters included pH, spreadability, stability, and skin irritancy. The results confirmed the cream's suitability for cosmetic use, with no adverse effects observed. This review integrates findings from over 70 authentic sources in pharmacology, dermatology, herbal medicine, and cosmetic science to validate the efficacy and safety of marigold-based cold cream

Introduction

Cold creams are traditional water-in-oil emulsions used for moisturizing, cleansing, and protecting the skin. Originating from Galen's formula in ancient Rome, cold creams have evolved into versatile cosmetic products. The increasing demand for herbal cosmetics stems from concerns about synthetic chemicals and consumer preference for natural remedies.

Marigold (Tagetes erecta), commonly known as African marigold, is widely cultivated and valued in ethnomedicine. Its flowers contain bioactive compounds such as flavonoids, carotenoids (notably lutein), triterpenoids, and essential oils, which contribute to its pharmacological activities. These properties make marigold an ideal candidate for incorporation into topical formulations aimed at soothing, healing, and rejuvenating the skin.

Literature Review

Herbal Cold Creams: Aloe vera, neem, turmeric, and rose oil have been incorporated into cold creams, showing enhanced moisturizing and therapeutic effects.

Marigold Extract: Previous studies highlight marigold's wound-healing, antimicrobial, and anti-inflammatory potential. It has been used in burns, dermatitis, and microbial infections.

Gap in Research: Despite its pharmacological richness, marigold remains underutilized in cosmetic formulations. Few studies have systematically evaluated marigold-based cold creams.

Methodology

Preparation of Marigold Extract

Fresh marigold flowers were dried and extracted using ethanol via maceration. The extract was filtered and concentrated to obtain a phytochemical-rich solution.

Formulation of Cold Cream

Oil Phase: Beeswax and liquid paraffin heated to 75°C.

Aqueous Phase: Borax, methyl paraben, and distilled water heated separately.

Fusion Method: Aqueous phase added to oil phase with continuous stirring until uniform cream formed.

Additives: Marigold extract incorporated; rose water added for fragrance.

Evaluation Parameters

Organoleptic properties: Color, odor, texture.

Spreadability: Measured by glass slide method.

Washability: Ease of removal with water.

Stability: Observed under varying storage conditions.

Viscosity: Determined using viscometer.
pH: Measured with pH meter (target 4.6–6.0).

Skin Irritancy: Patch test on volunteers.

Phytochemical Screening: Tests confirmed presence of tannins, saponins, alkaloids, terpenoids, flavonoids.

Results

Appearance: Faint yellow, smooth texture, pleasant odor.

Spreadability: Uniform, easy application.

Washability: Easily washable with water.

Stability: No phase separation, odor change, or discoloration.

Viscosity: Adequate for topical application. pH: Within skin-

friendly range.

Skin Irritancy: No redness or irritation observed.

Phytochemical Screening: Positive for bioactive compounds, confirming therapeutic potential.

Conclusion

The preparation and evaluation of marigold cold cream confirm its potential as a safe, effective, and natural skincare formulation. Its stability, non-irritant nature, and therapeutic properties validate its use in modern cosmetic science. This study reinforces the importance of integrating herbal extracts into topical formulations to enhance efficacy and consumer satisfaction.

Future Perspectives

Clinical Trials: Large-scale studies to validate efficacy and safety.

Advanced Delivery Systems: Nanoemulsions, liposomes, or transfersomes for deeper penetration.
Comparative Studies: Benchmarking against synthetic and other herbal creams.

Commercial Development: Scaling production with sustainable practices.

Combination Formulations: Exploring synergistic effects with other herbal extracts (e.g., aloe vera, turmeric).

Reference

Herbal Cold Creams & Cosmetics

1. Singh, M., Rani, M., & Thakur, V. (2025). Formulation and Evaluation of Herbal Cold Cream: A Review. International Journal of Pharmaceutical Sciences, 3(5), 351–354. ijpsjournal.com
2. Chaubey, A., Ahmad, F., Sahu, S., & Verma, S. (2024). Preparation and Assessment of Herbal Cold Cream. IJCRT. IJCRT
3. Korade, V. N. (2025). Formulation and Evaluation of an Emollient Cream Developed from Marigold Extract. World Journal of Research and Review, 1(1), 1–7. worldreviewjournal.com
4. Tosti, A., et al. (2010). Keratolytic topical agents for acne treatment. Dermatology, 220(3), 226–234.
5. Werschler, W. P., & Shamban, A. (2017). Chemical peels: A review of the literature. Journal of Clinical and Aesthetic Dermatology, 10(11), 30–36.

Marigold Phytochemistry & Pharmacology

1. Preethi, K. C., & Kuttan, R. (2009). Wound healing activity of flower extract of Tagetes erecta. Journal of Basic and Clinical Physiology and Pharmacology, 20(1), 73–79.
2. Della Loggia, R., et al. (1994). The role of triterpenoids in the topical antiinflammatory activity of Calendula officinalis. Planta Medica, 60(6), 516–520.
3. Arora, D., & Sharma, A. (2010). Phytochemical and pharmacological evaluation of Tagetes erecta. International Journal of Pharmaceutical Sciences Review and Research, 3(2), 45–50.
4. Singh, R., et al. (2011). Antimicrobial activity of marigold extracts. Indian Journal of Natural Products and Resources, 2(3), 315–318.
5. Gupta, A., & Jain, A. (2015). Antioxidant properties of marigold flower extract.
Journal of Pharmacognosy and Phytochemistry, 4(2), 92–96.

Dermatology & Cosmetic Science

1. Sterling, J. C., Handfield-Jones, S. E., & Norah, R. G. (2001). Guidelines for the management of cutaneous warts. British Journal of Dermatology, 144(1), 4–13.
2. Loo, S. K., & Tang, W. Y. (2014). Warts (Non-genital). BMJ Clinical Evidence.
3. Vlahovic, T. C., & Schleicher, S. M. (2013). Warts: Treatment of Choice. Clinics in Podiatric Medicine and Surgery, 30(3), 437–446.
4. Bhat, R. M., et al. (2018). Cutaneous Warts: An Overview of Treatment Options.
Indian Dermatology Online Journal, 9(5), 332–340.
5. Proksch, E. (2018). pH in Nature, Humans, and Skin. Dermatology, 234(1), 1– 10.

Formulation & Evaluation Methods

1. Allen, L. V. (2013). Remington: The Science and Practice of Pharmacy. Pharmaceutical Press.
2. Martin, A. (2011). Physical Pharmacy and Pharmaceutical Sciences. Lippincott Williams & Wilkins.
3. Lachman, L., Lieberman, H. A., & Kanig, J. L. (2009). The Theory and Practice of Industrial Pharmacy. CBS Publishers.
4. OECD Guidelines for Testing of Chemicals (2004). Skin irritation/corrosion.
5. Indian Pharmacopoeia Commission (2018). Evaluation methods for topical formulations.

Herbal Cosmetics & Consumer Trends

1. Mukherjee, P. K., et al. (2011). Herbal cosmetics: Trends and prospects. Natural Product Radiance, 10(1), 12–18.
2. Sharma, P., & Garg, V. (2014). Herbal cosmetics: A review. International Journal of Pharmacy and Pharmaceutical Sciences, 6(1), 1–5.
3. Kaur, H., & Arora, S. (2015). Consumer preference for herbal cosmetics. Journal of Cosmetic Science, 66(2), 89–97.
4. Kokate, C. K., Purohit, A. P., & Gokhale, S. B. (2010). Pharmacognosy. Nirali Prakashan.
5. Trease, G. E., & Evans, W. C. (2009). Pharmacognosy. Elsevier. Marigold / Calendula

Pharmacology & Phytochemistry

1. Parente, L. M. L., et al. (2012). Wound healing and anti-inflammatory effect ofCalendula officinalis. Journal of Ethnopharmacology, 142(3), 873–878.
2. Zitterl-Eglseer, K., et al. (1997). Anti-inflammatory activity of triterpenoids fromCalendula. Planta Medica, 63(5), 487–489.
3. Muley, B. P., et al. (2009). Phytochemical constituents and pharmacologicalactivities of Calendula officinalis. Pharmacognosy Reviews, 3(5), 162–167.

4. Dinda, K., et al. (2016). Therapeutic potentials of Calendula officinalis. Journal of Traditional and Complementary Medicine, 6(3), 206–210.
5. Hamburger, M., et al. (2003). Biological activity of marigold extracts. Fitoterapia, 74(4), 328–338.

Dermatology & Skin Science

1. Baumann, L. (2009). Skin Type Solutions. Bantam Books.
2. Barel, A. O., et al. (2014). Handbook of Cosmetic Science and Technology. CRC Press.
3. Draelos, Z. D. (2012). Cosmetic Dermatology: Products and Procedures. WileyBlackwell.
4. Rawlings, A. V., & Harding, C. R. (2004). Moisturization and skin barrier function. Dermatologic Therapy, 17, 43–48.
5. Elias, P. M. (2005). Stratum corneum defensive functions. Journal of Investigative Dermatology, 125(2), 183–200.

Herbal Cosmetics & Natural Products

1. Pandey, M. M., et al. (2013). Medicinal plants in cosmetics. Pharmacognosy Reviews, 7(14), 79–89.
2. Kapoor, V. P. (2005). Herbal cosmetics for skin care. Indian Journal of Natural Products, 21(3), 3–7.
3. Chanchal, D., & Swarnlata, S. (2008). Herbal photoprotective formulations.Pharmacognosy Reviews, 2(3), 201–207.
4. Kumar, S., et al. (2012). Herbal cosmetics: An overview. Asian Journal of Pharmaceutical and Clinical Research, 5(4), 1–7.
5. Joshi, L. S., & Pawar, H. A. (2015). Herbal cosmetics review. International Journal of Green Pharmacy, 9(3), 152–156.

Pharmaceutical Formulation & Evaluation

1. Aulton, M. E. (2018). Aulton's Pharmaceutics: The Design and Manufacture of Medicines. Elsevier.
2. Sinko, P. J. (2011). Martin's Physical Pharmacy. Lippincott Williams.
3. Banker, G. S., & Rhodes, C. T. (2002). Modern Pharmaceutics. CRC Press.
4. Ansel, H. C. (2013). Pharmaceutical Calculations. Lippincott Williams.
5. Carter, S. J. (2005). Cooper and Gunn's Dispensing for Pharmaceutical Students. CBS Publishers.

Skin Irritation & Safety Studies

1. Basketter, D. A., et al. (2004). Skin irritation testing methods. Food and Chemical Toxicology, 42(5), 679–693.
2. Draize, J. H. (1959). Dermal toxicity testing methods. Appraisal of Safety of Chemicals in Foods.
3. OECD (2015). In vitro skin irritation test guidelines.
4. EC Scientific Committee (2006). Safety evaluation of cosmetic ingredients.
5. Basketter, D., et al. (2012). Predictive toxicology for skin irritation.

Antimicrobial & Antioxidant Studies

1. Cushnie, T. P. T., & Lamb, A. J. (2005). Antimicrobial activity of flavonoids.International Journal of Antimicrobial Agents, 26(5), 343–356.
2. Rice-Evans, C. (1997). Antioxidant properties of phenolic compounds. Free Radical Biology & Medicine, 20(7), 933–956.

3. Halliwell, B. (2007). Oxidative stress and antioxidants. The Lancet, 370(9602), 1635–1644.
4. Prior, R. L., et al. (2005). Standardized antioxidant capacity methods. Journal of Agricultural and Food Chemistry, 53(10), 4290–4302.
5. Pietta, P. G. (2000). Flavonoids as antioxidants. Journal of Natural Products, 63(7), 1035–1042.

Additional Supporting References

1. WHO (2013). Guidelines on good agricultural practices for medicinal plants.
2. WHO (2007). Evaluation of herbal medicines.
3. Indian Council of Medical Research (ICMR) guidelines for herbal studies.
4. European Medicines Agency (EMA) herbal monographs.
5. US FDA (2020). Cosmetic safety guidelines.
6. ISO 22716 (2007). Good Manufacturing Practices for cosmetics.
7. Kapoor, L. D. (2001). Handbook of Ayurvedic Medicinal Plants.
8. Nadkarni, K. M. (2009). Indian Materia Medica.
9. Khandelwal, K. R. (2008). Practical Pharmacognosy.
10. Evans, W. C. (2009). Trease and Evans Pharmacognosy.
11. Harborne, J. B. (1998). Phytochemical Methods.
12. Sofowora, A. (1993). Medicinal Plants and Traditional Medicine in Africa.
13. Kokate, C. K. (2010). Pharmacognosy.
14. Wallis, T. E. (2005). Textbook of Pharmacognosy.
15. Bentley, R., & Driver, T. (2008). Medicinal plant chemistry.

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