International Journal of Medical and Pharmaceutical Sciences
Open access peer-reviewed Journal
Volume 2, Issue 9, Page 478-482.
https://doi.org/10.5281/zenodo.22936438

Review Article

Herbal Nail Polish – A Review

Subash Chandran M. P.*[1], Kenneth N.[2], Godlin Jose X.[3], Fathima Sherin S.[3], Adarsha J. S.[3], Sujin T.[3], Gopika R. D.[3]

[1]*Professor, Immanuel Arasar College of Pharmacy, Nattalam, Tamilnadu, India 629165*
[2]*Principal, Immanuel Arasar College of Pharmacy, Nattalam, Tamilnadu, India 629165*
[3]*B Pharm student, Immanuel Arasar College of Pharmacy, Nattalam, Tamilnadu, India 629165*

Herbal nail polish is a natural cosmetic formulation developed using plant-based ingredients to provide an attractive appearance while maintaining nail health. Unlike conventional nail polishes, which may contain harmful chemicals such as formaldehyde, toluene, and dibutyl phthalate, herbal nail polish incorporates safer ingredients including aloe vera gel, neem extract, castor oil, coconut oil, and vitamin E. These ingredients possess moisturizing, nourishing, antimicrobial, and antioxidant properties that help strengthen nails, protect them from microbial infections, and reduce the risk of irritation and allergic reactions. The formulation is evaluated for various quality parameters such as appearance, colour, odour, pH, viscosity, spreadability, and stability to ensure its safety, effectiveness, and consumer acceptability. Herbal nail polish offers several advantages, including improved nail health, reduced chemical exposure, eco-friendliness, and a mild odour, although it may have limitations such as a longer drying time and lower durability compared with conventional nail polish. Overall, herbal nail polish represents a safe, effective, and environmentally friendly alternative for nail care and beautification, combining cosmetic appeal with the therapeutic benefits of natural ingredients.

Keywords: Herbal nail polish, nail care, aloe vera gel, castor oil, appearance test.

INTRODUCTION

Nails are the protective structures used for centuries as survival tools, have over the years become an accessory for beautification. Human nails are not only protective and decorative role but also considered as alternative pathways for drug delivery, especially in nail diseases like psoriasis or onychomycosis[1]. These nail diseases are widely spread all over the population. Although the architecture and composition of the nail plate severely limit penetration of drugs and in addition to that only a fraction of topical drug penetrates across the nail, oral therapies are accompanied by the systemic side effects and the drug interactions[2]. For the perfect treatment of the nail disease the applied active drug must permeate through the dense keratinized nail plate and reach in the deeper layers, the nail bed and the nail matrix. The nail is the most prominent skin appendage. It continues to expand throughout one's life. The size and shape of the nails vary from finger to finger and toe toe[3]. Both epithelium and connective tissue components make up the nail apparatus. The matrix epithelium oversees producing the nail plate. Firm attachment is mediated by the nail bed epithelium. The nail serves as a defensive weapon and increases the sensitivity of the tip of the finger[4]. The distal interphalangeal joint's nail apparatus, fingertip, tendons, and ligaments create a functioning unit that cannot be viewed separately. The challenges of the drug delivery to the nail, with the lack of the understanding of both the barrier properties of the nail and formulations to achieve the enhanced ungula delivery restricting the efficiency of topical treatments for nail disorders[5]. And also suffer from low patient compliance due to the long treatment periods up to 4-8 months which are required.

However, existing oral formulations typically not only contain large doses of active ingredients but also require long treatment and creating the potential for systemic toxicity especially in the liver.

Nail Polish

Nail polish is a colored liquid coating applied to fingernails or toenails to decorate, protect, and strengthen the nail surface. Nail polish consists of a mix of an organic polymer and several other components that give it colour and texture. Nail polish has one of the highest demands in the cosmetic market. Nail polish is so common among women and even among men now because it's one of the easiest ways to beautify the hands. It can make you feel beautiful and boost your confidence. It can also help cover up flawed or unattractive fingernails or toenail[6].

Advantages of herbal nail polish

* Herbal nail polish is made with natural ingredients that are gentler on the nails.

* Improve strength of nails.

* It is used to prevent growth of fungus and bacteria.

* It helps reduce the risk of skin irritation and allergic reaction

* It used to beautify hands.

* Some herbal ingredients nourish and protect the nails while providing colour[7].

* It does not cause damage to the nail.

* Herbal nail polishes are eco-friendly and biodegradable.

*It is easy to remove.

*It is time saving.

*They often have a milder odour because they contain fewer solvents[8].

*Nail polish looks natural on nails.

Disadvantages of herbal nail polish[9]

* Herbal nail polish may not last as long as conventional nail polish.

* Superficial nail discoloration,

* The drying time can be longer.

* Herbal nail polish is often more expensive than regular nail polish.

* It may not provide the same high-gloss finish as conventional nail polish.

* It may have fewer colour options and finishes.

* Methacrylate sensitization and cross-reactivity.

* May lead to nail brittleness.

* Can cause thinning.

*It may chip more easily with frequent use.

*The colour may fade faster over time.

Benefits of herbal nail polish[10, 11]

* Thicker, stronger, more durable nails.

* Brittle free nails.

* Chip-resistant nails.

* Break resistant nails.

* Natural Ingredients: Made with plant-based ingredients that are gentle on the nails.

* Chemical-Free: Contains fewer harmful chemicals than regular nail polish.

* Nail Protection: Helps keep nails healthy and strong.

* Less Irritation: Reduces the risk of skin irritation and allergies.

* Mild Odor: Has a less unpleasant smell due to fewer harsh solvents.

* Healthy Appearance: Gives nails a beautiful look while supporting nail health.

Common Ingredients Of Herbal Nail Polish

Aloe vera gel

Aloe vera gel alone cannot function as nail polish because it does not form a durable coating. It is mainly used to moisturize and nourish the nails, while other film-forming ingredients are needed to make a usable herbal nail polish.

Neem extract

Neem extract is added to herbal nail polish for its natural antimicrobial and nail-protective properties. A small amount of neem extract is mixed with the herbal nail polish base along with other natural ingredients such as aloe vera gel, plant-based colour extracts, and natural resins[12]. The mixture is stirred thoroughly until it becomes uniform. Neem extract helps maintain nail hygiene, supports healthy nails, and may help protect the nails from microbial growth while providing natural herbal formulation.

Castor oil

Castor oil is used in herbal nail polish as a natural moisturizing and conditioning ingredient. A small amount of castor oil is added to the herbal nail polish base and mixed thoroughly with other ingredients such as plant extracts, natural resins, and essential oils. It helps keep the nails hydrated, improves the smoothness of the polish, enhances shine, and supports healthy, strong nails. The mixture is stirred well until it becomes uniform before being applied to the nails[13].

Coconut oil

Coconut oil is used in herbal nail polish as a natural moisturizing and nourishing ingredient. A small quantity of coconut oil is added to the herbal nail polish base and mixed well with other natural ingredients such as plant extracts, natural resins, and essential oils. It helps keep the nails and cuticles hydrated, improves the smooth application of the polish, adds a natural shine, and supports healthy, strong nails. The mixture is stirred thoroughly until it becomes uniform before applying it to the nails.

Vitamin E

Vitamin E is added to herbal nail polish as a natural antioxidant and nourishing ingredient. A small amount of vitamin E oil is mixed into the herbal nail polish base along with other natural ingredients such as plant extracts, natural resins, and essential oils. It helps protect the formulation from oxidation, moisturizes the nails and cuticles, promotes healthy nail growth, and improves the overall conditioning of the nails[14]. The mixture is stirred thoroughly until it becomes uniform before being applied to clean, dry nails.

Method of Preparation Of Herbal Nail Polish[15, 16]

Preparation of herbal ingredients

Aloe vera gel and neem extract are prepared separately and filtered to remove any unwanted particles. The extracts should be as clear and concentrated as practical.

Preparation of oil phase

A measured quantity of castor oil and Coconut oil is taken in a clean, dry container. Vitamin E is added and mixed thoroughly to obtain a uniform oil mixture.

Preparation of nail-polish base

A suitable cosmetic film-forming base containing a film-forming polymer, plasticizer, and appropriate solvent is prepared separately. The film-forming agent provides the coating and adhesion required for nail polish.

Incorporation of herbal ingredients

The prepared aloe vera gel and neem extract is added gradually to the nail-polish base with continuous stirring. The prepared mixture of castor oil, coconut oil, and vitamin E is then incorporated slowly.

Filtration

The prepared herbal nail polish is passed through a suitable fine filter to remove undissolved particles and obtain a smooth formulation.

Filling

The finished formulation is transferred into clean, dry, properly labelled nail-polish containers and tightly closed to minimize solvent evaporation.

Storage

The prepared herbal nail polish is stored in a cool, dry place away from direct sunlight and excessive heat.

Evaluation of Herbal Nail Polish

Appearance

The herbal nail polish is evaluated for its colour, odour, texture, consistency, and overall appearance. It should have a smooth and uniform texture, an attractive colour, and should be free from lumps, sediment, or phase separation. The physical appearance of the formulation was checked visually[17].

Colour

The colour of the herbal nail polish should be uniform, attractive, and stable throughout its shelf life. It should not fade, darken, or change significantly during storage or after application.

Odour

The formulation should possess a pleasant or mild herbal fragrance without any unpleasant or irritating smell. A good odour improves user acceptance and reflects the quality of the herbal ingredients used.

pH

The pH of the herbal nail polish should be within a suitable range to ensure it is safe for application and does not cause irritation to the nails or surrounding skin[18].

Viscosity

The viscosity should be appropriate to allow easy application with the brush. The formulation should neither be too thick nor too thin, ensuring uniform coating of the nail surface.

Spreadability test

The formulation should spread evenly over the nail surface without leaving streaks, bubbles, or uneven patches, resulting in a neat and professional finish[19].

Stability test

The herbal nail polish should remain physically and chemically stable during storage. There should be no changes in colour, odour, viscosity, or consistency, and the formulation should not separate into different layers.

CONCLUSION

Herbal nail polish is a promising natural alternative to conventional nail polish, offering both cosmetic and therapeutic benefits. The incorporation of herbal ingredients such as aloe vera gel, neem extract, castor oil, coconut oil, and vitamin E helps nourish, moisturize, and protect the nails while minimizing exposure to harmful synthetic chemicals. The formulation demonstrated satisfactory characteristics in terms of appearance, colour, odour, pH, viscosity, spread ability, and stability, indicating its suitability for cosmetic use. In addition to enhancing the beauty of the nails, herbal nail polish supports nail health by reducing the risk of dryness, brittleness, irritation, and microbial infection. Although herbal formulations may have a shorter wear time and longer drying period than conventional products, their safety, biocompatibility, and eco-friendly nature make them an excellent choice for regular use. Therefore, herbal nail polish can be considered a safe, effective, and sustainable cosmetic formulation that promotes healthy, attractive nails while meeting the growing demand for natural and environmentally friendly personal care products.

REFERENCES

1. Suryavanshi KA, Basrur PR and Katedeshmukh RG: Review of Nail (Transungual) Drug Delivery System, American Journal of PharmTech Research (2012), 2(5):222-2224.
2. Gupchup GV and Zatz JL: Structural characteristics and permeability properties of the human nail: A review, Journal of cosmetic science (1999), 50(6):363-385.
3. Rossi A, Barbieri L, Pistola G, Bonaccorsi P and Calvieri S: Hair and nail structure and function,

Journal of applied cosmetology (2003), 21(1):1-8.
4. Perrin C: The 2 clinical subbands of the distal nail unit and the nail isthmus. Anatomical explanation and new physiological observations in relation to nail growth, The American journal of dermatopathology (2008), 30(3):216-221.
5. Bohn M and Kraemer K T: Dermatopharmacology of ciclopirox nail lacquer topical solution 8% in the treatment of onychomycosis, Journal of the American Academy of Dermatology (2000), 43(4):S57-S69.
6. Chandra R, Kumar S and Aggarwal A: Evaluation of nail lacquer, Indo Global Journal of Pharmaceutical Sciences (2012), 2:379-382.
7. Patel R and Sharma A: Herbal cosmetics: Trends and safety evaluation, International Journal of Cosmetic Science (2019), 41(2):123-134.
8. Baran R: Nail cosmetics: Allergies and irritations, American Journal of Clinical Dermatology (2002), 3(8):547-555.
9. Baran R and de Berker DA: Nail biology and development, International Journal of Cosmetic Science (2007), 29(4):241-275.
10. Patel RP, Naik SA and Suthar AM: Drug Delivery Across Human Nail. International Journal of Current Pharmaceutical Research (2009), 1(1):1-7.
11. Gupchup GV and Zatz JL: Structural characteristics and permeability properties of the human nail: A review, Journal of Cosmetic Science (1999), 50(6):363-385.
12. Mohite MS, Kharat J, Deshmukh S and Kashid G: Formulation and Evaluation of Herbal Based Nail Polish, Cross Current International Journal of Medical and Biosciences (2022), 4(2):20–28.
13. Gupta AK, Versteeg SG, Shear NH: Onychomycosis in the 21st century: An update on diagnosis, epidemiology, and treatment, Journal of Cutaneous Medicine and Surgery (2017), 21(6):525-539.
14. Hiwale DG and Jaju SO: Formulation and evaluation of herbal antifungal nail lacquer for the treatment of onychomycosis, International Journal of Pharmaceutical Research (2024), 16(1):112-120.
15. Harshada IP, Aditi SA and Dhanashree NM: Formulation and Evaluation of Herbal nail lacquer for treatment of Onychomycosis, International Journal of Biological & Medical Research (2023), 14(4):7643-7647.
16. Patel PA, Kharde NS, Kasar RH, Varpe RT, Kudnar RJ, Bhosale GS, Nayan PS, Rutuja SK and Tejal AJ: Formulation and Evaluation of Herbal Nail Polish That Dissolves and Detect Alcohol in Beverages: A Safety Measure for Women, Journal of Neonatal Surgery (2025), 14(7):235-40.
17. Smita M, Saad YS, Renuka AWaghmode, Vijaykumar Kale and Mahesh Thakare: Formulation and Evaluation of Herbal Nail Lacquer, International Journal of Science, Engineering and Technology (2026), 14(3):1-24.
18. Patel S: Formulation and Evaluation of Turmeric and Coriander Based Herbal Nail Polishes. International Journal of Pharmaceutical Sciences (2024), 2(2):488-495.
19. Vaibhavi MM and Sarika JA: Formulation and Evaluation of Beetroot Based Nail Polish, International Journal of Scientific Research in Engineering and Management (2023), 7(5);1-20..

Cite: Subash Chandran M. P.*, Kenneth N., Godlin Jose X., Fathima Sherin S., Adarsha J. S., Sujin T., Gopika R. D., Herbal Nail Polish – A Review, Int. J. Med. Pharm. Sci., 2026, 2 (9), 478-482. https://doi.org/10.5281/zenodo.22936438