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Formulation and Evaluation of Antifungal Cream Using Neem and Tulsi

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Abstract: *Fungi become a significant health issue. Fungal disease is difficult to manage because they tend to be chronic, hard to diagnosis. Fungi are the common cause of the fungal infection. The herbal antifungal cream was formulated by using various herbs such as neem and aloe Vera. Herbal medicine is one of the oldest and most universal system of health care system. The herbal antifungal cream is very helpful and it is fewer side effects. The market has easy access to all herbal ingredients. The herbal antifungal cream is used to treat fungal infection which most commonly affect our skin, hair and nails. Herbal antifungal cream is used to treat fungal skin infection such as athletes' foot, ringworm and jock itch. This herbal antifungal cream represents a natural and safe to use, and this herbal antifungal cream is beneficial in reduction of fungal infection*

Keywords: Herbal antifungal cream, fungal disease, herbs, herbal ingredients, skin infection

I. INTRODUCTION

Fungal infections are common in humans, especially among those with weakened immune systems or underlying conditions like diabetes or cancer. These infections can usually be managed with the right treatment, but it can be hard to control them. Azadirachta indica (neem) plant known for their antifungal properties. Due to its wide range of medicinal properties, including antifungal, antibacterial, and antioxidant effects, neem, which can be found abundantly in tropical and subtropical regions, is utilized in a variety of traditional medicines. antifungal compound is also noted for its therapeutic uses, including antimicrobial and anticancer activities. Using extracts from plant the goal of this study is to create a natural, safe antifungal cream with the potential to treat fungal infection. [1], [2], [3]

Antifungal Cream

Antifungal creams are topical medications used to treat fungal infections of the skin, such as athlete's foot, ringworm, and jock itch. These creams typically contain active ingredients like clotrimazole, miconazole, terbinafine, or ketoconazole, which work by inhibiting the growth of fungi and eliminating the infection. Antifungal creams are applied directly to the affected area and are usually used for a specified duration as directed by a healthcare professional. They provide relief from symptoms such as itching, redness, and irritation, and can effectively clear up fungal infections when used consistently and as prescribed. It's essential to follow the instructions on the packaging or provided by a healthcare provider for safe and effective use[1], [4]

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II. MATERIAL AND METHOD

Sr No.	Ingredients	Quantity	Roles
1	Neem	20 ml	Antifungal Agent
2	Tulsi	20 ml	Antifungal [API]
3	Aloe vera gel	2gm	Moisturising
4	Beeswax	1.5 gm	Emulsifying Agent
5	Borax	0.2 gm	Buffering Agent
6	Liquid Paraffin	0.2 gm	Emollient
7	Methyl Paraben	0.2 gm	Preservative
8	Glycerine	10 ml	Lubricant
9	Silica Gel	0.1 gm	Adsorbent
10	Bentonite	4 gm	Thickening Agent
11	Rose Oil	Q.S	Perfume
12	Distilled Water	Q.S	Solvent

Materials

NEEM

Botanical name- Azadiracta indica.

Family: Meliaceae typically used- Leave.

Color- Green.

Description: Compound alternate, rachis 15-25cm long, 0.1cm thick, leaflet with oblique, serrate, 7-8.5 cm long and 1-1.7 cm wide slightly yellowish green in color.

Constituents- flavonoids, Alkaloids, Azadirone, nimbin, nimbidin, terpenoid, steroids,tannic acid andsaponinsursertin are present in Neem Leaf. [5]

Uses

Neem has an anti-inflammatory property which helps reduces acne.

* Treats Fungal Infections.
* Useful in Detoxification.
* Increases Immunity.
* Insect & Mosquito Repellent.
* Treats Wounds.
* Neem leaves are used to treat head lice, skin diseases, wounds or skin ulcers.

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Properties:

* It can have anti-allergenic pastime.
* It may have antipyretic activity (fever-reducing).[2], [5], [6], [7]

TULSI

Kingdom: Plantae
Family: Mints
Synonyms: Gauri, Bahumanjari, Pavani, Gramya, Surasa.
Botanical name: ocimumtenuiflorum
Common name: holy basil
Part of typical used: leaves
Colour: Green
Chemical constituents: eugenol, terpens, germacrene
Description: Holy basil is an erect, many branched subshrub, 30–60 cm (12–24 in) tall with hairy stems. Leaves are green or purple; they are simple, petioles with an ovate blade up to 5 cm (2 in) long, which usually has a slightly toothed margin. [8]

Uses

* Reduces bloodless, Cough & different respiratory problems
* Reduces strain & Blood stress
* Anti-most cancers residences.

OTHER EXCIPIENT

ALOE VERA GEL

Aloe vera is a succulent plant known for its medicinal properties, particularly for skin conditions and wound healing. The clear gel inside its leaves is rich in vitamins, minerals, and antioxidants, making it a popular ingredient in skincare

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and some traditional remedies. [9]
Kingdom: Plantae
Family: Asphodelaceae
Synonyms: Aloe barbadensis Mill
Botanical name: Aloe vera (L.) Burm
Common name: Aloe, Indian Aloe
Type: Succulent medicinal plant
Colour: Green fleshy leaves
Chemical constituents: Aloin, emodin, polysaccharides, saponins
Medicinal Uses: The gel from its leaves has been used for centuries to treat burns, cuts, and other skin issues.
Gel Composition: The gel is rich in vitamins, minerals, and amino acids. Skin Conditions: It's often used to soothe sunburn, acne, and dandruff.

BEES WAX

Beeswax, a natural substance secreted by honeybees, plays a vital role in the hive's construction and maintenance. It is primarily made up of esters, fatty acids, and hydrocarbons, making it a complicated mixture that can be used for a variety of things. Beeswax is valuable in a variety of industries due to its unique combination of properties. Palmitic, oleic, and linoleic acids, in addition to various alcohols like triacontanol and alcohol, are its primary components. These compounds give beeswax its characteristic odour and consistency.[10]

BORAX

Borax, also known as sodium borate, is a versatile compound with various applications across industries and households. Its chemical formula is $Na_2B_4O_7 \cdot 10H_2O$. Borax is primarily mined from natural deposits in countries like Turkey, the United States,and Chile. In terms of its properties, borax is a white, odourless powder that dissolves easily in water. One of its most notable characteristics is its ability to act as a buffering agent, helping to stabilize pH levels in solutions. This property makes it valuable in cleaning products, cosmetics, and even as a food additive.[11]

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LIQUID PARAFFIN

Liquid paraffin, also known as paraffin liquid, paraffin oil, liquid paraffin oil or Russian mineral oil, is a very highly refined mineral oil used in cosmetics and medicine. Cosmetic or medicinal liquid paraffin should not be confused with the paraffin (i.e. Kerosene is a fuel that is used. Regional differences in the meanings of paraffin and paraffin oil resulted from the generic meaning of paraffin, which meant alkane. Saturated hydrocarbons derived from petroleum make up this oily, transparent, colourless, and nearly odourless liquid.[12]

METHYL PARABEN

Methyl paraben is a commonly used preservative in cosmetics, pharmaceuticals, and food products due to its ability to inhibit microbial growth and extend product shelf life. Chemically, it belongs to the paraben family, which are esters of parahydroxybenzoicacid. Methyl paraben is typically synthesized from para-hydroxy-benzoic acid and methanol.Its antimicrobial properties make it effective against a wide range of bacteria and fungi, enhancing product stability and safety. However, there has been some controversy surrounding its safety, particularly its potential to disrupt endocrine function as it can mimic estrogen, though scientific consensus suggests that at typical exposure levels, it poses minimal risk to human health.[13], [14]

GLYCERIN

Glycerine, also known as glycerol, is a colourless, odourless, vis-cous liquid that is sweet-tasting. It's commonly used in pharmaceuticals, cosmetics, food, and even explosives. Studies on glycerine cover its various applications, including its use as a moisturizer, its role in pharmaceutical formulations, and its potential health effects when ingested or applied topically. Because it is a trihydroxy sugar alcohol, which means it has three hydroxyl groups, it can be dissolved in water or alcohol.[15]

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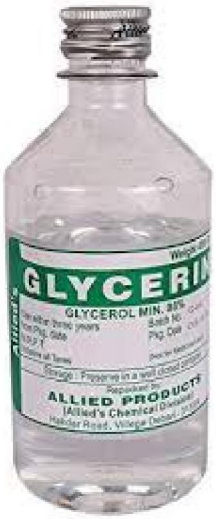

SILICA GEL

A synthetic product made from sodium silicate, silica gel is a porous form of silica dioxide. It appears as small, translucent beads or granules and is known for its high adsorption capacity. Silica gel has a wide range of applications due to its ability to absorb and hold moisture, odour, and other substances without reacting chemically with them.[16]

BENTONITE

Bentonite is a versatile clay mineral renowned for its unique properties and wide-ranging applications across various industries. It is primarily composed of montmorillonite, a swelling clay mineral, along with other minerals such as quartz, feldspar, and gypsum. Bentonite has remarkable properties like plasticity, thixotropy, and a high capacity to absorb water thanks to this composition.[17]

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ROSE OIL

Rose oil, also known as rose Otto or rose essential oil, is extracted from the petals of various types of roses, primarily Rosa damascene or Rosa centifolia. The extraction process typically involves steam distillation or solvent extraction, yielding a concentrated oil with a strong, floral scent. Rose oil is often used in aromatherapy for its calming and mood-enhancing effects. Some studies suggest that inhaling the scent of rose oil may reduce anxiety and promote relaxation.[18]

DISTILLED WATER

Distilled water is water that has been boiled into vapor and condensed back into liquid in a separate container. The original container still contains the original water's impurities if they do not boil below or near the boiling point. Thus, distilled water is a type of purified water. In chemical and biological laboratories, as well as in industry, in some appliances, deionized water or reverse osmosis water can be used instead of distilled water as a cheaper alternative. If exceptionally high-purity water is required, double distilled water is used. In general, after boiling, unpurified water can cause or impede chemical reactions and leave mineral deposits behind. One method of removing impurities from water and other fluids is distillation. For example, ions commonly found in tap water would drastically reduce lifespans of lead–acid batteries used in cars and trucks. These ions are not acceptable in automotive cooling systems because they corrode internal engine components and deplete typical antifreeze anti-corrosion additives.

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III. METHODOLOGY

Methods of extraction:[19]

1] Neemextract

Mixed with 500 ml of distilled water
↓
Boiled for 30 minutes
↓
Take 50 gm of dried Neem leaf powder
↓
Boiled solution were filtered using filter paper
↓
Clear aqueous leaf extract was obtained

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2] Tulsi Extract

Selection & Collection of 0. Americanum

↓

washed the leaf& dried at R.M.

↓

Dried leaves are crush in grinder & made powder

↓

Triturate the powder with the help of mortar &pestle .

↓

Add 80% methanol into the triurated powder & keep for 24 hrs

↓

Concentrate the extract & use it as ÁPI in cream.

Procedure for formulation:

- Take two beaker A &B
- Wash and clean
- In Breaker A Take aloe vera
- Boil on water bath.

❖ **In beaker A-**

- Take aloe vera gel and boil on water bath
- Add neem powder and Tulsi powder extract with continuous stirring.

❖ **In Breaker B-**

- Take glycerine and boil.
- Add bees wax and tween 20 with continuous stirring.
- Add borax and silica gel with continuous stirring
- Then add methyl paraben
- Mix beaker A and B together with constant mechanical stirring.
- Add bentonite with continuous stirring
- Then formulation cool in room temperature for 5 min.
- Then add rose oil for fragrance.

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Cream formulation

Ingredients	Tulsi formulation F1	Neem formulation F2
Neem	0.20gm	0.26gm
Tulsi	0.26gm	0.20gm
Aloe vera gel	20ml	20ml
Beeswax	1.5gm	1.5gm
Borax	0.2gm	0.2gm
Liquid Paraffin	0.2ml	0.2ml
Methyl Paraben	0.2gm	0.2gm
Glycerin	10ml	10ml
Silica Gel	0.1gm	0.1gm
Bentonite	4gm	4gm
Rose Oil	Q.S	Q.S
Distilled Water	Q.S	Q.S

Formulation	Texture quality	Effectiveness	remark	Result
Tulsi formulation F1	Poor	Low	Texture was not good	Failed
Neem formulation F2	Moderate	Moderate	Slight improvement in texture	Better but not optimal
Neem and tulsi formulation F3	Good	High	effectivness	successful

Evaluation Parameter

1] Physical Evaluation:

Sr.no	Properties	Observation
1	Colour	Yellowish green
2	Odour	Pleasant
3	Appearance	Semi solid
4	Texture	smooth

2] Ph determination:

The pH of various semi-solid (cream) formulation were determined by using digital pH meter. Weight 2.5g of cream and dispersed in 25ml of distilled water and stored for 2 hours. Then measurement of pH by using digital pH meter[20], [21]

3] Spreadiability test

The spreadability test for a herbal antifungal cream assesses its ability to evenly distribute and cover a given surface area upon application. This test typically involves placing a fixed quantity of the cream onto a standardized surface, such as glass or a skin mimic substrate, and measuring the diameter of the spread after a specified time period. Factors like viscosity, texture, and formulation components influence the cream's spreadability. A cream with good spreadiability ensures uniform coverage, easy application, and enhanced efficacy. This test helps in optimizing formulation param ester to achieve desired spreading characteristics for better consumer experience and therapeutic outcomes[22], [23]

4] Homogencity

The homogeneity of herbal antifungal cream is crucial for consistent effectiveness and application. Ensuring uniform distribution of active ingredients throughout the product is essential to guarantee each application delivers the intended benefits. Achieving homogeneity involves meticulous formulation and manufacturing processes, including thorough

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mixing of ingredients and quality control measures. Manufacturers utilize techniques like blending,emulsification, and particle size reduction to achieve desired consistency. Additionally, analytical methods such as visual inspection, microscopy, and spectroscopy are employed to assess homogeneity. By maintaining homogeneity[14], [24], [25]

5] Washability

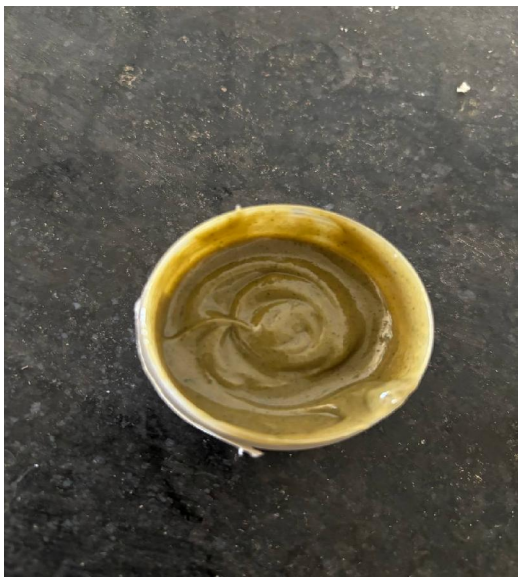
0.5 gm of prepared formulation was applied on the skin. And it was washed with warm water. The time taken for removal of preparation was noted. Mark an area of Isqem on the left had dorsal surface. The cream was applied to the specified area and time was noted. Irritancy erythema. Edema was checked if any for regular intervals upto 24 hrs and reported.[26], [27], [28]

6] Test for microbial growth in formulated creams

For this test, prepare culture media by using nutrient agar. Nutrient agar media was used for study of microbial growth. In this take nutrient agar and placed for 24 hrs, then the microbial growth was observed. Then apply the cream on the surface area of the petriplate then observed.[29], [30]

IV. RESULT

Sr.no	Test	Result
1	Physical Evaluation Colour Odour Appearance Texture	 Yellowish green Pleasant Semi solid Smooth
2	Ph determination	6.3
3	Spreadiability test	Easy application
4	Homogencity	Homogeneous
5	Washability	Good
6	Test for microbial growth in formulated creams	No sign of microbial growth



V. CONCLUSION

The increasing global awareness of the environmental impact of pharmaceuticals and a growing desire for sustainable, natural solutions have propelled herbal remedies into the spotlight. Herb- al antifungal creams, harnessing the power of

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plant extract, represent a compelling alternative to synthetic medications, offering a balance between efficacy and safety.one of the key strengths lies in the generally well-tolerated nature of herbal formulation, often associated with synthetic counterparts.[31] Scientific advancements in herbal medicine research further substantiate the efficacy of spe cific plant compounds against fungal pathogens. This intersection of traditional herbal knowledge and modern scientific validation enhances the credibility of herbal antifungal remedies, paving the way for great integration into mainstream health care practices.[32]

The future trajectory of herbal antifungal creams is marked by sustainability, safety and efficacy making them a compelling choice in the evolving landscape of antifungal treatments.

REFERENCES

[1] A. Premkumar, T. Muthukumaran, and V. Ganesan, "Formulation and Evaluation of Cream Containing Antifungal Agents, Antibacterial Agents and Corticosteroids," Journal for Drugs and Medicines, vol. 6, no. 2, 2015.

[2] P. de Castro e Silva et al., "Physical-Mechanical and Antifungal Properties of Pectin Nanocomposites / Neem Oil Nanoemulsion for Seed Coating," Food Biophys, vol. 14, no. 4, 2019, doi: 10.1007/s11483-019-09592-0.

[3] M. F. Mustaffa et al., "In-situ film-forming solution for topical application of terbinafine hcl: Biopharmaceutical evaluation and in vivo antifungal performance using animal model," International Journal of Applied Pharmaceutics, vol. 13, no. 6, 2021, doi: 10.22159/ijap.2021v13i6.42589.

[4] S. M. 1□, V. Iyyappan, and P. G. Bhavishi, "Evaluation of an Antifungal Luliconazole Gel Formulation Using Semi-Automatic Diffusion Cell Apparatus and Application of Mathematical Models in Drug Release Kinetics," European Journal of Molecular& Clinical Medicine, vol. 4, no. September, 2021.

[5] S. Gunasekaran and B. Anita, "Analysis of phytochemical variability in Neem formulations," Indian J Nat Prod Resour, vol. 1, no. 3, 2010.

[6] R. Subapriya and S. Nagini, "Medicinal properties of neem leaves: A review," 2005. doi: 10.2174/1568011053174828.

[7] I. E. Sampson, "Physico-Chemical Properties of Neem Seed Kernel Extract," International Journal of Advanced Academic Research | Sciences, Technology & Engineering, vol. Vol. 4, no. October, 2018.

[8] A. Sundriyal, J. Syan, B. Bhatt, Y. Bahuguna, and ..., "Herbal Cosmetics: A Review on Herbal Face Pack," 2022.

[9] L. Kaur, A. P. Singh, A. P. Singh, and T. Kaur, "A review on herbal cosmetics," International Journal of Pharmaceutics and Drug Analysis, 2021, doi: 10.47957/ijpda.v9i3.483.

[10] A. A. Shimpi and A. S. Pawara, "A Review on Herbal Face Pack," Research Journal of Pharmacology and Pharmacodynamics, 2022, doi: 10.52711/2321-5836.2022.00024.

[11] A. A. Shimpi and A. S. Pawara, "A Review on Herbal Face Pack," Research Journal of Pharmacology and Pharmacodynamics, 2022, doi: 10.52711/2321-5836.2022.00024.

[12] D. K. S. and R. Tiwle, "Formulation and characterization of herbal face wash/scruber," European Journal of Pharmaceutical and Medical Research, vol. 3, no. 11, 2016.

[13] S. Gokhale, R. M. Pitambare, P. S. Pawar, A. H. Pawshe, and S. P. Patil, "Formulation Development and Evaluation of Herbal Mouthwash," American Journal of PharmTech Research, vol. 10, no. 4, 2020, doi: 10.46624/ajptr.2020.v10.i4.007.

[14] P. S. H.A., "FORMULATION AND EVALUATION OF HERBAL ANTIBACTERIAL, ANTIFUNGAL CREAM.," World J Pharm Res, 2017, doi: 10.20959/wjpr20176-8530.

[15] K. S. sawant, M. prasad sunil, M. L. R. Z. A. A. S. A. Pawar jagrutiprakash, "Formulation And Evaluation Of Herbal Anti-Fungal cream," International Journal of Pharmaceutical Sciences, vol. 2, pp. 809–815, 2024, doi: 10.5281/ZENODO.12736870.

[16] "Formulation And Evaluation Of Herbal Anti-Fungal cream." Accessed: Mar. 28, 2025. [Online]. Available: https://www.ijpsjournal.com/article/Formulation+And+Evaluation+Of+Herbal+AntiFungal+cream+

[17] P. Aher, R. Mokate, and J. Kokat, "Formulation and evaluation of papaya herbal face pack for glowing skin," J PharmacognPhytochem, vol. 13, no. 4, 2024, doi: 10.22271/phyto.2024.v13.i4e.15037.

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Impact Factor: 7.67

[18] S. Chatterjee, A. Kataruka, S. Mukherjee, A. Adhikari, and A. Bhattacharjee, "A Review on Medicinal Benefits and Applicability of Herbal Ingredients in Cosmeceuticals," International Journal of Pharmaceutical Science Invention ISSN, vol. 11, no. 3, 2022.
[19] "EXTRACTION, FORMULATION AND EVALUATION OF ARGMONE MEXICANA LINN LEAVES AS ANTIFUNGAL CREAM," International Research Journal of Modernization in Engineering Technology and Science, 2023, doi: 10.56726/irjmets42774.
[20] G. V Khandve, A. V Kamthe, B. Vaibhav, and K. R. Y. Patil, "Formulation and Evaluation of Herbal Emulgel from CoccinaGrandis Linn Fruit Extract for Fungal Dermatological Infection," International Journal of Pharmaceutical Research and Applications, vol. 8, no. 2, 2023.
[21] F. Grace, J. Vijetha, S. Shanmuganathan, and D. Chamundeeswari, "Preparation and Evaluation of Herbal Face Pack," Adv J Pharm Life sci Res, vol. 3, 2014.
[22] S. A. Avhadet al., "Formulation and Evaluation of Polyherbal Face Pack," Journal of Drug Delivery and Therapeutics, vol. 12, no. 5, 2022, doi: 10.22270/jddt.v12i5.5597.
[23] M. S. Bhavani, CH. Naveena, P. Nagamani, and B. Sowmya, "Formulation and Evaluation of Herbal Face Cream," Int. J Pharm Sci Rev Res, vol. 83, no. 2, 2023, doi: 10.47583/ijpsrr.2023.v83i02.011.
[24] P. S. H.A., "FORMULATION AND EVALUATION OF HERBAL ANTIBACTERIAL, ANTIFUNGAL CREAM.," World J Pharm Res, 2017, doi: 10.20959/wjpr20176-8530.
[25] K. S. sawant, M. prasad sunil, M. L. R. Z. A. A. S. A. Pawar jagrutiprakash, "Formulation And Evaluation Of Herbal Anti-Fungal cream," International Journal of Pharmaceutical Sciences, vol. 2, pp. 809–815, 2024, doi: 10.5281/ZENODO.12736870.
[26] P. K. Khule, R. M. Gilhotra, M. M. Nitalikar, and V. V More, "Formulation and Evaluation of Itraconazole Emulgel for Various Fungal Infections," Asian J Pharm, vol. 13, no. 1, 2019.
[27] "A REVIEW ON FORMULATION AND EVALUATION OF HERBAL FACE PACK," International Research Journal of Modernization in Engineering Technology and Science, 2023, doi: 10.56726/irjmets36190.
[28] "A review paper on formulation and evaluation of herbal face pack," International Research Journal of Modernization in Engineering Technology and Science, 2023, doi: 10.56726/irjmets40363.
[29] M. U. Mishra et al., "Preparation and Evaluation of Herbal Cream containing Anethum sowa and Aloe barbadensis," Research Journal of Topical and Cosmetic Sciences, 2023, doi: 10.52711/2321-5844.2023.00011.
[30] S. Bhagat, S. K. Sinha, and J. K. Tiwari, "Identification and Evaluation of Morpho-Physiological Variation in Spine Gourd (Momordica dioica Roxb.)," Int J Curr Microbiol Appl Sci, vol. 6, no. 11, 2017, doi: 10.20546/ijcmas.2017.611.064.
[31] J. B. Patel et al., "Formulation and Evaluation of Herbal Excipients-Based Ketoconazole Cream for Fungal Infection," Journal of Natural Remedies, vol. 23, no. 2, 2023, doi: 10.18311/jnr/2023/32329.
[32] S. H. Chermahini, F. Adibah, A. Majid, and M. R. Sarmidi, "Cosmeceutical value of herbal extracts as natural ingredients and novel technologies in anti-aging," Journal of Medicinal Plants Research, vol. 5, no. 14, 2011.