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Role of Plants Against Human Skin Diseases: A Comprehensive Study

Maneesha Singh[1,*], Neha Kumari[2], Suman Khanduri[3]

Abstract

Humans are infected by different types of skin diseases caused by Bacteria, Viruses and Fungi. Abscess caused by Staphylococcus bacteria, Genital herpes, resulting from the herpes simplex virus (HSV), is among the prevalent skin conditions affecting individuals worldwide, irrespective of their country's level of development. Skin diseases should be prevented by the allopathy, homeopathy and ayurvedic methods. Ayurvedic methods are based on application of natural resources are preferred over allopathy treatment due to its some side effects. The previous literature and survey in this direction has revealed that there are sufficient number of plants available used to treat human diseases. Through a combination of literature review and fieldwork conducted across different regions of the states, a comprehensive inventory of 31 medicinal plant species was compiled and documented. These listed medicinal plants are used in curing 135 ailments, with the highest numbers of species being used for cuts, wounds, followed by fever and diarrhea. The majority of life forms consisted of herbs (64%), with shrubs comprising 20% and tree species making up the remaining 16%.The subsequent segments delineate 31 medicinal plant species spanning diverse families, scrutinized for their efficacy in treating skin ailments. Additionally, the study underscores the inadvertent exploitation of certain medicinal plant species by individuals unaware of their ecological significance. Consequently, there's a pressing need for advancing agricultural technology to cultivate highly sought-after medicinal plants on a large scale. Furthermore, regions abundant in medicinal flora ought to be safeguarded as natural reserves to conserve their biodiversity. In school & colleges nurseries rich in medicinal plants should be made and protected.

Key words: Skin diseases, Leprosy, Medicinal plants, Biodiversity, Environmental factors

INTRODUCTION:

The skin, the body's largest and essential organ, serves as a crucial barrier between the body and the external environment, making it susceptible to various environmental factors. It plays pivotal roles in sensory perception, disease prevention, protection, fluid balance, absorption of substances through the skin, and regulation of body temperature. Additionally, the skin contributes to insulation, sensation, synthesis of vitamin D, and safeguarding vitamin B folates. In cases of severe damage, the skin undergoes a healing process often resulting in the formation of scar tissue, which may appear discolored and depigmented (Asong *et al*., 2019, Alexiades-Armenakas *et al.*, 2008; Proksch *et al.*, 2008).

Various types of skin diseases in humans stem from bacterial, viral, and fungal infections, as well as direct contact with contaminated surfaces. Skin ailments pose a prevalent health challenge in both developed and developing nations (Grice *et al*., 2009). Skin diseases should be prevented by the allopathy, homeopathy and ayurvedic methods. Ayurvedic methods are mostly preferred as compared with other methods as they cause allergy, Itching, swellings and wounds in the body (Abbasi *et al.*, 2010; Muthu *et al.*, 2006). To overcome these side effects, generally Ayurvedic methods are preferred to cure skin diseases. There are several medicinal plants used to cure skin diseases because these plants contain several antiskin diseases agents which are used in clinical or preclinical development.

India is the birthplace of ayurvedic medicine, the oldest medicinal system known to man. Even in contemporary times, there's a continued adoption of

*Author for Correspondence
Maneesha Singh
E-mail: singhmaneesha2@gmail.com

[1]Professor, Department of Botany, Shri Guru Ram Rai University, Patel Nagar Campus, Dehradun, Uttarakhand, India
[2-3]Research Scholar, Department of Botany, Shri Guru Ram Rai University, Patel Nagar, Dehradun, Uttarakhand, India

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holistic approaches to health, viewing wellness in a comprehensive manner. Herbal treatments remain pivotal within this framework. In India, the utilization of various parts of medicinal plants for addressing skin conditions dates back to ancient eras. The indigenous medical system, notably Ayurveda, has been practiced for numerous centuries, showcasing a longstanding tradition of utilizing herbal remedies for treating skin diseases. The raw materials of antiskin diseases medicinal plants are in demand by the modern pharmaceutical industries. Use of plants for treating skin diseases are not confined to doctors only but it is known to several household as well. There is need for conservation, maintenance and assessment of germplasm for future use (Ayyanar *et al*., 2005, Ganesan *et al.,* 2004).

The survey and available literature has revealed that there has sufficient number of medicinal plants used to treat a wide spectrum of human diseases. Through a combination of literature review and fieldwork conducted across different regions within the states, a total of 31 species of medicinal plants were recorded and documented. These listed medicinal plants were used in curing 135 ailments, with the highest numbers of species being used for cuts, wounds (Kala, 2010). The subsequent sections outline 31 medicinal plant species from diverse families, examined for their efficacy in treating skin conditions. Furthermore, we elaborate on species utilized in traditional therapies for skin diseases together with their parts used as follows:

Allium Sativum

- *Common Name:* Garlic
- *Family:* Alliaceae
- *Part Used:* Flower, seed and root
- *Medicinal Uses:* The juice is used as lubrifaction in skin diseases. Garlic oil inhibits excessive fibroblast proliferation as it can lead to the formation of Keloid scars (Dosanih *et al*., 2005).

Acorus Calamus

- Common Name: sweet flag
- *Family:* Araceae
- *Part Used:* Rhizomes
- *Medicinal Uses:* Twice daily, a mixture of powdered rhizomes, Curcuma aromatic rhizomes, and *Azadiracta indica* leaves is applied following bathing and before bedtime for a week to address psoriasis and eczema, and it can serve as a skin exfoliant. This aromatic herb promotes skin health and rejuvenation

Aegle Marmelos

- *Common Name*: Beal tree
- *Family:* Rutaceae
- *Part Used:* Fruit
- *Medicinal Uses***:** Fruits crushed with seeds of *Strychnous nuxvomica* and *Pongamia pinnata* and boiled with coconut oil and then applied on the affected part of Psoriasis, scabies etc. Bael juice can reduce the skin rashes and their symptoms, such as light red, raised, itching lumps.

Aloe Vera

- *Common Name:* Ghritkumari, aloe
- *Family:* Liliaceae
- *Part Used:* leaf, pulp and seed.
- *Medicinal Uses:* Leaf pulp and seeds used in various skin diseases. A compound called “aloe emodin ” is used to cure psoriasis, leprosy, acne, pimples etc (Harsha *et al.,* 2003).

Argemone Mexicana

- *Common Name:* Mexican pickly poppy
- *Family:* Papaveraceae
- *Part Used:* Seeds & rhizome
- *Medicinal Uses:* Paste prepared with seed powder, rhizome of *Curcuma aromatica* and *Acorus calamus* can be applied on infected parts twice a day till recovery (Informaticsnopr.niscair.res.in).

Asparagus Racemosus

- *Common Name:* Shatavari

- *Family:* Asparagaceae
- *Part Used:* tuber.
- *Medicinal Uses:* Paste oftuber of satavari and leaves of *Plumbago indica* is applied on skin diseases once a day till cure.

Azadirachta Indica
- *Common Name:* Neem, Margosa Tree
- *Family:* Meliaceae
- *Part Used:* all parts of the plant.
- *Medicinal Uses***:** Flowers and leaves boiled in gingili oil is applied on the affected area of the Skin (Abbasi *et al.*, 2010).

Balanites Aegyptica
- *Common Name:* Desert date
- *Family:* Balanitaceae
- *Part Used:* bark, leaf, fruit and seeds.
- *Medicinal Uses:* It has many medicinal properties. Its fruit by boiling used in psoriasis and leucoderma and other skin diseases.

Bauhinia Variegata
- *Common Name:* Kachanar, Orchid tree
- *Family:* Fabaceae
- *Plant Used:* Bark
- *Medicinal Uses:* The usage of extract at doses of 500 and 1000 mg/kg body weight resulted in an increase in life expectancy and tumour size.

Beta Vulgaris
- *Common Name:* Beetroot
- *Family:* Brassicaceae
- *Plant Used:* Root
- *Medicinal Uses:* Excess melanin causes hyperpigmentation, which is treated by vitamin C found in beetroot.

Brassica Oleraceae
- *Common Name:* Red cabbage
- *Family:* Brassicaceae
- *Plant Uses:* Leaf
- Medicinal Uses: It is applied to maintain healthy, toned, blemish-free, and radiant skin as It's high in antioxidants (including vitamin C and beta-carotene) (Sati *et al.*, 2022).

Cassia Auriculata
- *Common Name:* Avaram Senna
- *Family: Ceresalpiniaceae.*
- **Part Used:** Leaf
- *Medicinal Uses:* Dried leaf paste mixed with vinegar is applied on skin diseases once a day till cure.

Calendula Officinalis
- *Common Name:* Marigold
- *Family:* Asteraceae
- *Part Used:* Petals and leaves
- *Medicinal Uses:* It is used to treat a variety of skin disorders, including contusions, bruises, and varicose veins. Minor skin abrasions and inflammation can also be treated successfully.

Camellia Sinensis
- *Common Name:* Green tea, Chaay
- *Family:* Theaceae

Part Used: Leaves
Medicinal Uses: Its beneficial role in treatment of skin tumors and cancer.

Cannabis Sativus
- *Common Name:* Charas, Ganja
- *Family:* Cannabinaceae
- *Part Used:* Leaves
- *Medicinal Uses*: Leaves powder used for dressing and externally applied to relieve pain in itchy skin diseases.

Crocus Sativus
- *Common Name:* Saffron
- *Family:* Iridaceae
- *Part Used:* Flower (Stigma)
- *Medicinal Uses:* It has anti-bacterial and anti- inflammatory qualities, It's becomes a perfect treatment for acne and breakouts and helps clear up the acne-prone skin.

Clerodendron Inerme
- *Common Name:* Wild jasmine
- *Family:* Verbenaceae
- *Part Used:* leaves.
- *Medicinal Uses:* Leaf juice mixed with bee wax resin of *Vateria indica* and seeds of *Nigella sativa* made into a paste is kept into a hot water bath and cooled before use It is applied once a day before bed time till the recovery to cure various skin diseases.

Cynodon Dactylon
- *Common Name:* Burmuda grass
- *Family:* Poaceae
- *Part Used:* leaves
- *Medicinal Uses:* Pounded leaves boiled in coconut oil is recommended to cure various kind of skin diseases.

Curcuma Longa
- *Common Name:* turmeric
- *Family:* Zingiberaceae
- *Part used:* Rhizome
- *Medicinal Uses:* Effective against bacterial infection, skin diseases, intestinal worms, wounds etc. Chah *et al*., 2006).

Datura Stramonium
- *Common Name: Datura*
- *Family:* Solanaceae
- *Part Used:* Leaf, root and seeds.
- *Medicinal Uses:* It is used as antiseptic in various skin diseases, like psoriasis scabies,eczema etc.

Eclipta Alba
- *Common Name:* False daisy
- *Family:* Asteraceae
- *Part Used:* Leaf, steam and root.
- *Medicinal Uses:* It is herb used in various skin diseases.

Embelia Ribes Burm
- *Common Name:* Vidanga
- *Family:* Yrsinaceae
- *Part Used:* Leaf, seed& fruit
- *Medicinal Uses:* Garhwali and Tribes of North-East India used the seed in various skin diseases.

Emblica Officinalis
- *Common Name:* Aamla, Indian gooseberry
- *Family:* Euphorbiaceae
- *Part Used:* Leaf, stem and fruit
- *Medicinal Uses:* Use to cure many skin diseases.

Ficus Racemosa
- *Common Name:* Country fig
- *Family:* Moraceae
- *Part Used:* Root extract, latex
- *Medicinal Uses:* Useful in skin diseases like leprosy, edema, psoriasis etc.

Gmelina Arbores
- *Common Name:* White teak, cashmere tree**.**
- *Family:* Verbenaceae
- *Part Used:* Flower
- *Medicinal Uses:* Used in the treatment of psoriasis and other skin diseases.

Gloriosa Superba
- *Common Name:* Glory lily, climbing lily
- *Family:* Liliaceae
- *Part Used:* Tuberous roots
- *Medicinal Uses:* Used in itching in various skin diseases.

Glycyorrhiza Glabra
- *Plant Name: Glycyorhiza glabra*
- *Common Name:* Mulethi
- *Family:* Fabaceae
- *Part Used:* Stem
- *Medicinal Uses:* Paste prepared from powder stem and *Withania somnifera* roots is applied on the affected parts once a day for one year to cure psoriasis Leucoderma other skin diseases.

Holarrhena Pubescence
- *Common Name:* Easter tree, I vary tree
- *Family:* Apocynaceae
- *Part Used:* Latex, seed and Bark
- *Medicinal Uses: It* is beneficial in all skin diseases**.**

Hygrophila Auriculata
- *Common Name:* Kokilaksha or, Gokulakanta
- *Family:* Acanthaceae
- *Part Used:* Leaf
- *Medicinal Uses:* Dried leaf powder mixed with castor oil is applied twice a day till the recovery on the affected parts to cure skin diseases.

Madhuca Longifolia
- *Common Name:* Madhu
- *Family:* Sapotaceae
- *Part Used:* Seeds
- *Medicinal Uses:* Pounded seeds mixed with leaf extract of *Ocimum tenuiflorum* and applied on The affected parts twice a day to cure various skin diseases.

Wrightia Tinctoria
- *Common Name:* Indrajav tree

- *Family:* Apocynaceae
- *Part Used:* Leaves
- *Medicinal Uses:* Powdered leaves mixed with coconut oil and are applied twice a day against psoriasis.

DISCUSSION AND CONCLUSION:

Previous research on traditional medicinal plants employed in treating skin ailments indicates that economically disadvantaged local and tribal communities across various regions of India favor folk remedies due to their affordability and cultural significance (Maruthi *et al*., 2000; Ignacimuthu *et al.,* 2006). Interviews conducted in rural villages highlight that knowledge of medicinal plants is predominantly confined to traditional healers, herbalists, and elderly individuals. Among different life forms, herbs constitute the majority (64%), followed by shrubs (20%) and trees (16%). Additionally, the study underscores the inadvertent exploitation of certain medicinal plant species by local residents unaware of their ecological importance. Therefore, there is a crucial need to advance the agricultural technology for cultivating highly demanded medicinal plants on a large scale, while also safeguarding areas abundant in medicinal flora as natural reserves.

REFERENCES

1. Abbasi A.M. , Khan M.A. , Ahmad M. , Zafar M. , Jahan S. , Sultana S. (2010).Ethnopharmacological application of medicinal plants to cure skin diseases and in folk cosmetics among the tribal communities of North-West Frontier Province, Pakistan. J. Ethnopharmacol., 128: 322-335
2. Alexiades-Armenakas M. R., *et al.*(2008).The spectrum of laser skin resurfacing: nonablative, fractional, and ablative laser resurfacing. J Am Acad. Dermatol.58 (5):719-37.
3. Asong J.A., Ndhlovu P.T., Khosana N.S., Aremu A.O., Otang-Mbeng W.,(2019). Medicinal plants used for skin-related diseases among the Batswanas in Ngaka Modiri Molema District Municipality, South Africa, South African Journal of Botany, 126, 11-20.
4. Ayyanar M., Ignacimuthu S. (2005). Ethnomedicinal plants used by the tribals of Tirunelveli hills to treat poisonous bites and skin diseases. Indian Journal of Traditional Knowledge. 4: 229- 236255.
5. Chah K.F., Eze C. A., Emuelosi C.E., Esimone C.O. (2006). Antibacterial and wound healing properties of methane extracts of some Nigerian medicinal plants. Journal of Ethnopharmacology, 104:164-167
6. Ganesan S., Suresh N., Kesavan L.(2004). Ethnomedicinal survey of lower Palni Hills of Tamil Nadu. Indian Journal of Traditional Knowledge, 3:299-304
7. Grice E. A., Kong H. H., Conlan S., Deming C. B., Davis J., Young A. C., Bouffard G. G., Blakesley R. W.(2009). Topographical and Temporal Diversity of the Human Skin Microbiome. Science, 324: 1190–2.
8. Harsha V.H., Hebbar S.S., Shripathi V., Hegde G.R. (2003). Ethnomedicobotany of Uttara Kannada District in Karnataka, India plants in treatment of skin diseases. Journal of Ethnopharmacology, 84:37-40.
9. Ignacimuthu S., Ayyanar M., Sankarasivaraman K. (2006). Ethnobotanical investigations among tribes in Madurai district of Tamil Nadu, India. Journal of Ethnobiology and Ethnomedicine, 2:25**:** -119.
10. Informaticsnopr.niscair.res.in.
11. Kala C. P. (2010).Medicinal plants: Potential for economic development in the state of Uttaranchal, India. International Journal of Sustainable Development and world ecology. 13(6). 492-498.
12. Maruthi K.R., Krishna V., Manjunatha B.K., Nagaraja V.P. (2000). Traditional medicinal plants of Davanagere district, Karnataka with reference to cure skin diseases. Environment and Ecology, 18:441-446
13. Proksch E., Brandner J.M., Jensen J.M. (2008). The skin an indispensable barrier. Experimental dermatology, 17: 1063–72.
14. Sati D., Pande V., Pandey S. C., Samant M. (2022). Recent advances in PGPR and molecular mechanisms involved in drought stress resistance. J. Soil Sci. Plant Nutr. 10.1007/s42729-021-00724-5

