

# Traditional Knowledge on Medicinal Plants Used for the Treatment of Skin Diseases in Ranchi District of Jharkhand, India

**<sup>1</sup>Vikram Kumar Sharma and <sup>2</sup>Dr. Rashmi Mishra**

<sup>1</sup>Research Scholar, Department of Botany, Dr. Shyama Prasad Mukherjee University Ranchi (Jharkhand)

<sup>2</sup>Assistant Professor, Department of Botany, Dr. Shyama Prasad Mukherjee University Ranchi (Jharkhand)

**ABSTRACT :** The study thus underlines the potentials of the ethno-botanical research and the need for the documentation of traditional ecological knowledge pertaining. Skin diseases are most common, numerous and a frequently form of infections occurring in people of all ages. This paper documents the knowledge of medicinal plants used for the treatment of skin diseases in Ranchi District of Jharkhand, India. The current investigation aims to identify, collect and document the existing folk knowledge related to the utilization of medicinal flora for healing of skin ailments among the local inhabitants. The study was done through structured questionnaires in consultation with the tribal ethno-medical practitioners and has resulted in the documentation of 75 medicinal plant species belonging to 42 families. Ethnic people and tribals of India are endowed with a deep knowledge concerning the utilization of medicinal plants to cure various diseases. However research on the local knowledge related to plant species utilization for skin ailments still lacks adequate attention. In most of the skin treatments with medicinal plants, the herbal preparations are administered topically. Further scientific research is required to evaluate biochemical constituent as well as the pharmacologically useful alkaloids, tannins, resins and any other beneficial plant product available from the local flora for the enhanced posterity of mankind.

**Keywords :** Medicinal plants, skin diseases, ethnomedicinal, herbs, tribes, indigenous traditionally, nature.

## I. Introduction

World Health Organization estimate over 80% of the people in developing countries depend on traditional medicines for their primary health needs<sup>[1]</sup>. There are estimated to be around 25,000 effective plant-based formulations, used in folk medicine and known to rural communities in India<sup>[2]</sup>. It is suggested that many conventional drugs prescribed worldwide are exclusively of plant based<sup>[3,4]</sup>.

Jharkhand is a treasure of medicinal plants. People of Jharkhand literally (bushland) and symbolically are associated with forests. Various ethnic groups like Munda, Oraon, Ho, Santhal, Paharia etc. have symbiotic relations with forests.

Jharkhand, the 28th state of the country. This area is a rich in medicinal plant diversity. The tribal people mostly depend of forests for their live hood like- foods, fibers, woods etc., and up to 50% of the ruler population still depends on traditional medicine as primary near there source. Ranchi is the capital of Jharkhand and located in Central Jharkhand. Ranchi lies at 23°22'N 85°20'E near to the Tropic of Cancer. The city covers an area of 175 km<sup>2</sup> (68 sq mi) and its average elevation is 651 m above sea level. Ranchi is located in the southern part of the Chota Nagpur plateau, which is the eastern section of the Deccan plateau.

Medicinal plants are the backbone of traditional medicine, which means more than 3.3 billion people in the less developed countries utilize medicinal plants on a regular basis<sup>[5]</sup>. Plants have been an obligatory source of innate products for their relief from illness for many years. The forest is referred to as God's own pharmacy<sup>[6]</sup>: The World Health Organization<sup>[7]</sup>. Skin diseases are numerous and a frequently occurring health problem affecting all ages from the neonates to the elderly and cause harm in number of ways. Maintaining healthy skin is important for a healthy body. Many people may develop skin diseases that affect the skin, including herpes, cellulitis, leprosy, eczema, leucoderma, acne ,scabies, etc. Some wild plants and their parts are frequently used to treat these diseases. The use of plants is as old as the mankind. Natural treatment is cheap and claimed to be safe. It is also suitable raw material for production of new synthetic agents. The therapeutic properties of medicinal plants are conditioned by the presence in their organs of active substances, such as alkaloids, flavonoides, glycosides, vitamins, tannins and coumarin compounds, which physiologically affect the bodies of humans and are biologically active in relation to the causative agents of various diseases.

## II. Material and Method

Periodic field trips were undertaken to different villages of Ranchi District in 5 different blocks namely, Kanke, Ratu, Mander, Bero and Lapung. The data were collected considering two different types of observation viz., ethnobotanical, household survey and through direct interview related to quantification of plant gathered. The first way of data collection was by ‘interview’ involving question about local name, part used to treat diseases and method of administration. The second method includes collection of plants specimen and then interviewing the informants for names and uses. Both the types of observation were repeated with the knowledgeable people, elders, traditional healers, vaidhyas, etc. The plant specimens were dried using the standard herbarium techniques. The specimen were identified using Kirtikar and Basu<sup>[8]</sup>, Babu<sup>[9]</sup>, Chopra et al<sup>[10]</sup>, Haines<sup>[11]</sup>, Hooker<sup>[12]</sup>, Kanjilal<sup>[13]</sup>, Jain<sup>[14,15]</sup>, Maheshwari<sup>[16]</sup> as the standard references. A total number of 27 plant species are recorded during the survey and these were enumerated and listed below in table1, arranged alphabetically by botanical name followed. The requisite ethnomedicinal properties of different plants were recorded through direct interview with the local people and practitioners on the basis of their traditional knowledge and the folklore formulation, which they were prescribed to their patients. After documentation, use of formulation was cross checked and confirmed. Our work confirms earlier findings<sup>[17,18]</sup>. People of different area use different plants for skin diseases. Ammannia baccifera Linn of family Lythraceae has been used against skin diseases in Chotanagpur<sup>[19]</sup>.

### Study of Medicinal Plants :

Study of medicinal plants used by tribal people of Ranchi district of Jharkhand are as follows

**Table 01**

S.N	Botanical Name	Family	Local Name	Habit	Part used
1.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Apamarg	Herb	Leaf
2.	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bel	Tree	Leaf
3.	<i>Aloe barbadensis</i> Mill.	Asphodelaceae	Ghritkumari	Herb	Leaf
4.	<i>Albizia lebbeck</i> (L.) Benth	Fabaceae	Siris	Tree	Bark
5.	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Shataavari	Climber	Tubero-us root
6.	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Khapra saag	Herb	Leaf
7.	<i>Capparis zeylanica</i> L.	Cappariadaceae	Hainsa	Climber shrub	Leaf
8.	<i>Cassia alata</i> L.	Caesalpiniaceae	Daadmaari	Herb	Leaf
9.	<i>Chenopodium album</i> L.	Amaranthaceae	Bathuaa	Herb	leaf
10.	<i>Clerodendrum infortunatum</i> L.	Verbenaceae	Bhaandi,Kaari	Shrub	Leaf
11.	<i>Clitoria ternatea</i> L.	Fabaceae	Aprajita	Herb	Leaf
12.	<i>Costus speciosus</i> (Koenig) Sm.	Zingiberaceae	Kebu	Herb	Rhizome
13.	<i>Curcuma longa</i> L.	Zingiberaceae	Haldi	Herb	Rhizome
14.	<i>Heliotropium indicum</i> L.	Boraginaceae	Haanthisuda	Herb	Leaf
15.	<i>Kigeliaafricana</i> (Lam.) Benth.	Bignoniaceae	Balam khira	Tree	Fruit
16.	<i>Lawsonia inermis</i> L.	Lytraceae	Mehendi	Shrub	Leaf
17.	<i>Leucas aspera</i> Spreng.	Lamiaceae	Goma	Herb	Leaf
18.	<i>Mimosa pudica</i> L.	Mimosaceae	Laajwanti	Herb	Leaf
19.	<i>Mangifera indica</i> L.	Anacardiaceae	Aam	Tree	Fruit
20.	<i>Pongamia pinnata</i> (L.) Pierre.	Fabaceae	Karanj	Tree	Seed
21.	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amla	Tree	Bark
22.	<i>Phyllanthus niruri</i> L.	Euphorbiaceae	Bhumiamla	Herb	Leaf
23.	<i>Ricinus communis</i> L.	Euphorbiaceae	Erandi	Shrub	Seed
24.	<i>Rumex maritimus</i> L.	Polygonaceae	Jangali Palal	Herb	Leaf
25.	<i>Schleichera oleosa</i> (Lour.) Merr.	Sapindaceae	Kusum	Tree	Seed
26.	<i>Sida rhombifolia</i> L.	Malvaceae	Mahaabalaa	Herb	Whole plant
27.	<i>Terminalia arjuna</i> (Roxb.) W.&A.	Combretaceae	Arjun	Tree	Bark

## Use of the plants in various diseases

1. *Achyranthes aspera L.* - Leaf juice is applied in fungal infections.
2. *Aegle marmelos* (L.) Corr. Paste of leaves and crushed seeds are applied on the affected part to cure scabies. Bel sharbat is used in curing skin rashes, vitiligo (white patches on the skin), redness, itching and other skin problems.
3. *Aloe barbadensis* Mill.- Leaf pulp is applied on burns, wounds and cuts, Eczema..
4. *Albizia lebbeck* (L.)Benth- Bark is soaked in water overnight, mashed bark in water is filtered and taken ext morning for cure of skin problems.
5. *Asparagus racemosus* Willd. - Tuberous root paste is useful in bacterial and fungal infection.
6. *Boerhaavia diffusa* L. - Leaf is boiled in coconut oil and applied locally twice a day until cure to treat scabies and ringworm infection. Root paste with milk is applied topically in case of blisters and ulcer.
7. *Capparis zeylanica* L.- The leaves paste is applied in boils.
8. *Cassia alata* L. - Leaf paste is applied externally in eczema and ringworm.
9. *Chenopodium album* L. - Juice of the leaves are applied on the white patches on the skin (Vitiligo). Leaf paste is also applied over burns.
10. *Clerodendrum infortunatum* L. - Leaf paste is used in itching, scabies and other skin infections is applied in various *Clitoria ternatea* L. - Fresh leaf paste skin problems.
11. *Costus speciosus* (Koenig) Sm. - The paste of the leaves and rhizome is made into paste and applied locally over the skin affected with discoloration, black spots and itching due to ringworm infection.
12. *Curcuma longa* L. - Rhizome paste is applied externally in wounds.
13. *Heliotropium indicum* L.- Leaf paste is used on wounds, scabies, eczema and other skin problems.
14. *Kigelia Africana* (Lam.) Benth.- Paste prepared from dried fruit is useful in wounds, acne, abscess and ulcers.
15. *Lawsonia inermis* L. - Paste prepared from leaf is applied on cuts, wounds and burning sensation on the feet.
16. *Leucas aspera* Spreng. The juice of the leaf is used externally for the treatment of psoriasis and chronic skin eruptions.
17. *Mimosa pudica* L. – Paste of whole plant is applied on eczema, cuts and wounds.
18. *Mangifera indica* L.- Raw fruit is roasted or boiled and the pulp is applied in sunstroke or sun burn.
19. *Pongamia pinnata* (L.) Pierre.- Application of seed oil is useful in scabies, leprosy, minor cuts and other skin infection.
20. *Phyllanthus emblica* L. -Dried bark powder is boiled with coconut oil and applied externally on scabies.
21. *Phyllanthus niruri* L.- Paste of the leaf is applied over the skin to treat skin infection.
22. *Ricinus communis* L. - Seed oil is applied in eczema and other skin ailments.
23. *Rumex maritimus* L. - Leaf paste is applied on burns, itching and wounds.
24. *Schleichera oleosa* (Lour.) Merr.- Seed paste is slightly warmed and applied over the cuts to prevent pain and to cure white patches on the skin. Seed oil is applied externally on scabies.
25. *Sida rhombifolia* L. - The poultice of the whole plant is applied externally on ulcers, boils, cuts and any inflammatory virus disease of the skin.
26. *Terminalia arjuna* (Roxb.) W.&A.– Bark paste is applied on burns, acne and wounds.



*Achyranthes aspera* L.

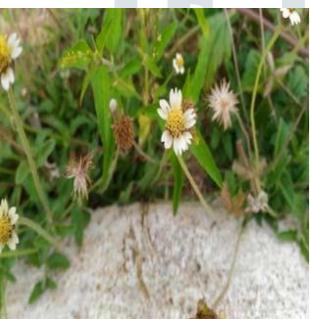


*Aegle marmelos* (L.) Corr.



*Aloe barbadensis* Mill

*Albizia lebbeck (L.)**Asparagus racemosus Willd.**Boerhaavia diffusa L.**Capparis zeylanica L.**Cassia alata L.**Chenopodium album L.**Clerodendrum infortunatum**Clitoria ternatea L.**Costus speciosus (Koenig) Sm.**Curcuma longa L.**Heliotropium indicum L.**Kigelia Africana (Lam.) Benth.**Lawsonia inermis L.**Leucas aspera Spreng.**Mimosa pudica L.*

*Mangifera indica L.**Pongamia pinnata Pierre.**Phyllanthus emblica L**Phyllanthus niruri L.**Ricinus communis L.**Rumex maritimus L**Tinospora cordifolia (Wild).**Tridax procumbens L.**Vitex negundo L.*

### III. Result

The study of 27 species belonging to 21 families were identified. In table the plant species were verified and authenticated as 12 herbs, 7 trees, 4 shrubs and 4 climbers. It was observed that leaves were the most widely used plant part accounting for 14 plant species in a total of 27 recorded plants. This was followed by barks (3 species), fruits (2 species), seeds (2 species), fruits (2 species), rhizome (2 species), tuberous root (1 species), and whole plant (1 species). For each of the plant species mentioned above, the botanical name, family, vernacular name in hindi, habit, plant part used and mode of administration were recorded. The result of the present study provide evidence that medicinal plants still play a vital role in primary health care of the folk community.

### IV. Discussion

Skin health is fundamental to total health. The skin, along with the hair, glands and nails is the part of the integumentary system, the largest and most versatile organ system in the body<sup>[20]</sup>. Generally fresh part of the plant used to preparation of medicine. When fresh plant part are not available dried parts also used. This study revealed that traditional wisdom about medicinal plants still play a vital role in primary health care of people. During the survey it was that there must need to protect this knowledge forever. Similar plant use is recorded earlier in different parts of India<sup>[21-27]</sup>.

### V. Conclusion

The biochemical analysis and pharmacological studies of those plant species may bring some new scientific information of immense ethno pharmacological interest. That's why these medicines should be cultivated and traditional healer should get economic support from government. Hence the benefit of this knowledge may be useful to coming generation. The results suggest that the people of Ranchi district possessed quite extensive knowledge of

the medicinal properties of plants that they used for treatment of skin ailments. The emergences of increasingly pathogenic and resistant microbes have stimulated a search for safer and more natural alternatives to the current conventional treatment methods. Thus the wealth of medicinal plants points to a great potential for research and the discovery of new drugs to fight skin diseases.

## VI. Acknowledge

The authors are thankful to the local people and tribal of Ranchi district for sharing their traditional knowledge. The author is thankful to Baidh, Pahan and local people inhabiting localities because of their kind support and thankful to the division forest officer and range officer of the district Ranchi, Jharkhand.

## References

- [1] Shankar D and Majumdar B. Beyond the biodiversity convention: The challenges facing the biocultural heritage of India's medicinal plants. Medicinal plants for forest conservation and health care, (Non-wood forest products Services).1993; 11:163
- [2] Ramakrishnappa K. Impact of cultivation and gathering of medicinal plants on Biodiversity: Case studies from India .In: Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries [online], 2000, FAO.
- [3] Harvey AL. Medicines from nature: are natural products still relevant to drug discovery. Trends Pharmacol Sci.1999; 20: 196-198.
- [4] Rates SM Plants as source of drugs. Toxicon.2001; 39: 603-613
- [5] Davidson-Hunt I. Ecological Ethnobotany: stumbling toward new practices and paradigms. MASA J. 2000; 16:1-13.
- [6] Nanadini N. Nagababu P, Umamaheswara Rao, Venugopal N. International Journal of Phytomedicine. 2014; 6(2):286-292
- [7] World Health Organization-WHO. General guidelines for methodologies on research and evaluation of traditional medicine. 2000, 74. HO/EDM/TRM/2000.1Geneva
- [8] Kirtikar KK, Basu BD. Indian Medicinal Plants. Allahabad,1935.
- [9] Babu CR. Herbaceous flora of Dehradun. CSIR,New Delhi, 1977.
- [10] Chopra RN, Nayar SL, Chopra IC. Glossary of Indian Medicinal Plants. CSIR New Delhi, 1996
- [11] Haines HH.The Botany of Bihar and Orissa.6 parts. London, reprinted 1961, Botanical Survey of India, Calcutta. 1921-1924, 1-3.
- [12] Hooker JD. The Flora of British India. London, 1872- 1897, 1-7.
- [13] Kanjilal,et.al. Flora of Assam. Government of Assam. 1940; 1.
- [14] Jain SK. (edited.) Glimpse of Indian Ethnobotany. New Delhi: Oxford and I.B.H Pub, 1981.
- [15] Jain SK. Dictionary of Indian Folk Medicines and Ethnobotany. Journal of Pharmacognosy and Phytochemistry, New Delhi, 1991; 343- 376.
- [16] Maheshwari JK. Tribal development in tropical forest areas, tropical ecosystem and management, wilex eastern Hd, New Delhi, 1992.
- [17] Kumar, Jyoti. Herbal paste for Eczema. Natural Product Radiance.2004; Vol. 3.
- [18] Singh, C. T. N. and Jyoti Kumar. Allamania nodiflora (L.) R. BR., A less known medicinal plant of Hazaribagh, Jharkhand. Ad. Plant Sci.2003;16 (ii): 403–404.
- [19] Bondya Sutanu Lal, H. P. Sharma, Jyoti Kumar and H.B. Sahu. Medicinal value of weeds growing in Chtanagpur (Ranchi district). Int. J. Mendel.2003; 20 (1): 27–28
- [20] Wardlaw P, Gordon M, Kessel M.Perspectives in nutrition.2002; 5: 85-86.
- [21] Saikia AP, Ryakala VK, Sharma P, Goswami P, Bora U.Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics. J Ethnopharmacol.2006;106: 149-157.

- [22] Kumar P, Vidyasagar GM .Traditional knowledge on medicinal plants used for the treatment of skin diseases in Bidar district, Karnataka. Indian Journal of Traditional Knowledge .2008;7: 273-276.
- [23] Sharma L, Gaurav A, Ashwini K ,Medicinal plants for skin and hair care. Indian Journal of Traditional Knowledge.2003; 2: 62-68.
- [24] Jeeva GM, Jeeva S, Kingston C.Traditional treatment of skin diseases in South Travancore, southern peninsular India. Indian Journal of Traditional Knowledge.2007; 6: 498-501.
- [25] Kingston C, Jeeva S, Jeeva GM, Kirub S, Mishra BP, et al.Indigenous knowledge of using medicinal plants in treating skin diseases in Kanyakumari district, Southern India. Indian Journal of Traditional Knowledge.2009; 8: 196-200
- [26] Wardlaw P, Gordon M, Kessel M.Perspectives in nutrition.2002; 5: 85-86.
- [27] Chopda MZ, Mahajan RT.Wound healing plants of Jalgaon district of Maharashtra State, India. Ethno botanical Leaflets.2009; 13: 1-32

