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Journal of Advanced Scientific Research

Available online through http://www.sciensage.info/jasr

ISSN
0976-9595
Short Communication

TRADITIONAL KNOWLEDGE ABOUT THE APPLICATION OF PHYTOREMEDIES BY TEA TRIBE AND KARBI TRIBE OF ASSAM, INDIA AGAINST CERTAIN COMMON AND FREQUENTLY OCCURRING SKIN DISEASES

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ABSTRACT

An Ethnobotanical study was carried out in order to document the traditional knowledge about the application of phytoremedies by two ethnic tribes of Assam, the Tea tribe; a tribe from plains and Karbi tribes; a hill tribe of Assam. Present study documented 19 plants of 13 families are used in different skin diseases by Tea tribes of Jorhat district of Assam, of which nine of the recorded plants were herbs, three shrubs and seven trees. 20 plants of 16 families were recorded which are used in different skin diseases by Karbi tribes of KarbiAnglong, Assam, eleven number of the recorded plants were herbs, six shrubs two trees and one climber shrubs. Biological activities of the recorded plants were also reported from available literature. Biological and phytochemical screening of these plants convincingly demonstrated their medicinal properties which validates the traditional knowledge of the ethnic communities regarding the application of these plants as phytoremedies in skin diseases.

Keywords: *Phytoremedies, Traditional Knowledge, Assam*

1. INTRODUCTION

Skin is considered as the largest organ in the body. It contributes to the first line of defenses. It is made of specialized cells and structures and consist of three types of layers, the outermost epidermis, middle dermis and inner hypodermis,each one having different types of functions. Skin diseases are considered as one of the frequently occurring health problem in human being as well as animals. Skin diseases occur worldwide and amount to approximately 34% of all occupational diseases encountered [1]. It occurs in all ages right from the birth. There are various types of skin infection and is classified into nine common types like Rashes, Viral infections, Bacterial infection, Parasitic infection, Pigment disorder. Tumor and Cancer, Trauma and several other conditions. Ethnobotanical aspect plays very important role in treatment of certain diseases. Natural drugs from the plants are gaining popularity because of several advantages such as often having fewer side-effects, better patient tolerance, being relatively less expensive and acceptable due to a long history of use [2]. Indigenous herbal treatment is a part of the culture and dominant mode of therapy in most of the developing countries [3].

The World Health Organization (WHO) has estimated that as many as 80% of the world population is dependent on the traditional medicine for their health needs [4] and about 65% of Indians are dependent on the traditional system of medicine [5].

Peoples of the rural areas of Assam, North East India possessed remarkably accurate knowledge about the medicinal use of the plants around them. The rural population has tremendous faith, belief and empathy for traditional herbs. Biological screening of few such plants has convincingly demonstrated their role in the treatment of diseases. Each and every community of this region has accurate Indigenous Traditional Knowledge about the application of medicinal plants around them to cure various illnesses [6]. The present study deals with the documentation of traditional knowledge about the application of Phytoremedies in the treatment of skin diseases by Karbi tribes of Sarihajan area of Karbianglong and Tea tribes of Mariani, Jorhat, Assam.The *Karbis*, earlier known as the as the Mikir, one of the ethnic groups of northeast east India inhabiting in the hills of Assam. As they are the hilly dwellers, they mostly depend on the forest resources for food, housing, medicines etc. Tea-tribes of Assam is a term used to

denote those active tea garden workers and their dependents. They were originally coming from Orissa, Madhya Pradesh, Bihar, Andhra Pradesh and West Bengal have engaged themselves with tea cultivation and harvesting and subsequently settled in Assam permanently. They are known as Tea and Ex-Tea Garden Tribes, who are recognized as Other Backward Classes by the Government. Peoples of both these tribes "Karbis" one of the hill tribe and "Tea tribes" one ethnic plain tribe of Assam possess remarkable accurate knowledge about application of Phyto remedies against different commonly occurring ailments.

2. MATERIAL AND METHOD

2.1. About the study site

The KarbiAnglong district is one of the two hills districts of Assam. The district is located between 25° 33′ and 26° 35′ North latitude and from 92° 10′ to 93° 50′ East longitude. The area Sarihajan is situated on the eastern part of Karbianglong district of Assam which is 58km away from the main town Diphu. The topography of the area includes rivers, land, stream, slopes etc. The soil pattern found in the area is red loam to alluvial soil. The temperature averages are 22°C. and average annual rainfall is 1980 mm annually.

Mariani is located at 26.67° North latitude and 94.33° East longitude. It has an average elevation of 155 meters. Soil is alluvial soil comprising of clay, silt, sand gravel and pebbles. The temperature averages are 24°C with about 2324 mm of precipitation falls annually.

2.2. Methodology

Documentation about the application of Phyto remedies against frequently occurring skin diseases by Karbi tribes of KarbiAnglong and Tea tribes of Jorhat district of Assam was the chief objective of the present study. In order tocollect direct information about the application of Phyto-remedy against skin diseases by the aforesaid communities' ethnobotanical study was carried out in Sarihajan area of karbiAnglong district of Assam and four Tea tribe inhabiting villages Mariani Town of Jorhat district, Assam during January, 2018 to August, 2018.The information on plants use for the treatments of skin diseases was gathered by interacting and discussing with the local medical practitioners and with the respondents of the target groups with a structured questionnaire. The plant species used were collected from the field and preserved in the form of herbarium sheets. The herbarium sheets were identified following Flora of Assam [7, 8] and authenticated comparing them with the herbarium of in the department of Botany, J.B. College (Autonomous), Jorhat, Assam, India. All total 64 respondents of Karbi communities and 117 respondents of Tea tribe communities of 30-70 years old were interviewed, which has experience of use ethnomedicinal plants against skin diseases. Biological activities of these plants have been recorded by consultation with the Phytochemical, pharmaceutical, pharmacological literature available for the plants recorded adopting the methods of Das and Duarah, 2014 [6].

3. RESULT AND DISCUSSION

Present study documented 19 plants of 13 families which were used in different skin diseases by Tea tribes of Jorhat district of Assam, of which nine of the recorded plants were herbs, three shrubs and seven trees. The plants were enumerated and arranged in an order having botanical name, local name, family name, habitat of the plant, method of preparation of medicines and experimental data available on Biological activity of the plants.

1. *Azadirachta indica*, Neem, Meliaceae, Trees, Leaf paste mixed with turmeric powder and applied externally on the infected areas of Acne, Ringworm, Chicken pox, Psoriasis and Pimple: Antiviral [9], Antifungal [10].
2. *Pongamia pinnata*, Karanj, Fabaceae, Trees, Oily seed extracts are applied in the skin against Chicken pox, Acne, Eczema and Ringworm: Antiviral [11], Seed oil is used in skin disease [12].
3. *Curcuma longa*, Haldi, Zingerbiraceae, Shrub, Dried rhizome are grinded and powdered and is applied in Wound and Acne: Antimicrobial [13].
4. *Aloe vera*, Chalknowar, Asphodelaceae, Herb, the gel of leaf is being used in Acne and Pimple: Antimicrobial [14].
5. *Nicotiana tobeccum,* Dhopat, Solanaceae, Herb, the leaves are grounded and mixed with salt and is applied on the infection skin in Athletes foot: They are used externally in the treatment of rheumatic swelling, skin diseases [15].
6. *Cassia alata*, Chakunda, Fabaceae, Tree, Fresh leaf paste are mixed with turmeric powder and is use in the infected part in Ringworm, Eczema: Antimicrobial [16].
7. *Ocimum sanctum*, Tulsi, Lamiaceae, Shrub, Leaf and stem decoction is taken in empty stomach in Pimple, Acne, and Psoriasis: Antibacterial [17], wound healing capacity [18].

8. *Allium sativum*, Nohoru, Amaryllidaceae, Herb, Onion is ground and is applied in Acne. Antibacterial [19], Antifungal [20].
9. *Bambusa tulda,* Banh, Poaceae, Tree, Bamboo leaves along with neem leaves is boiled in water and this water is use for bathing for nearly a week during Chickenpox, Acne: Bamboo shoot has healing capacity [21].
10. *Vitex negundo*, Sindhur pat, Lamiaceae, Tree, The leaf of this plant is boiled with the neem leaf in water and is used for washing in Chicken pox, Acne: antimicrobial [22].
11. *Leucas linifloria*, Goma sag, Lamiaceae, Herb, The leaf of this plant is grounded with turmeric and is applied for a week in Ringworm and Skin rashes: Antimicrobial [23].
12. *Centella asiatica,* Mani-muni sag, Apiaceae, Herb, The leaf of this plant is ground and is applied in Psoriasis: Antibacterial [24].
13. *Psidium guajava*, Modhori, Myrtaceae, Tree, the leaves are boiled with water and is used while washing in Skin rashes: antimicrobial [25]
14. *Phyllanthus niruri*, Mati ammla, Fabaceae, Herbs, Leaf paste mixed with the leaf paste of *Leucas linifolia* and a pinch of salt and then apply to the infected part of Acne: Antimicrobial [26].
15. *Swertia chirata* Chirata, Gentnanaceae, Herb, leaves are boiled with water and taken in empty stomach in Acne, Pimples, Eczema: plant has medicinal value [27].
16. *Cocos nucifera*, Coconut, Aceraceae, Tree, Fruit oil is extracted and used for rashes and other skin problems like Acne, Ringworm, Seborrheic, Dermatitis etc.: High medicinal value [28].
17. *Solanum xanthocarpum,* Wild eggplant, Solanaceae, Herb, the leaf is boiled along with bamboo and neem leaf and the decoction is applied for daily wash in Chicken pox, Acne: Anti-inflammatory, Anti-tumor activity [29].
18. *Flemingia strobilifera,* Digloti ,Fabaceae, Shrub, plant extract is applied over the infected area three times daily until cure in ringworm infection: Antimicrobial [30].
19. *Drymaria cordata*, Laijabori, Caryophyllaceae, Herb, whole plants paste applied on the affected areas of ringworm: Antibacterial [31].

All total 20 plants of 16 families were recorded which were used in different skin diseases by Karbi tribes of KarbiAnglong district of Assam, eleven number of the recorded plants were herbs, six shrubs two trees and one climber shrubs. The plants were enumerated and arranged in an order having botanical name, local name in Assamese language, Local name in Karbi, family name, habitat of the plant, method of preparation of medicines and experimental data available on Biological activity of the plants.

1. *Tinospora cordifolia,* Gilloi Amar lata, Rikangphurui, Menispermaceae, Climber shrub, Thestem pasteis applied on acne of face and on itching part of the skin: Antimicrobial [32].
2. *Kaempferia galanga* , Chandramula Gathion, Bithiphaknur, Zingiberaceae, Herb, The rhizome paste are applied on the skin in Allergy, sting of caterpillar's: wound healing properties [33], non-irritant to the skin of rats [34].
3. *Hydnocarpus pentandra,* Lamtani, Flacourtiaceae, Shrub, The paste of the seed are applied on the itching area: ethnomedicinal, antimicrobial [35].
4. *Zingiber cassumunar,* Bon ada, Vorek-hanso, Zingiberaceae, Herb, Juice from the bulbs are applied on the skin in Itching: antifungal [36].
5. *Cassia alata,*Khorpat, Cher abap, Fabaceae, Shrub, Paste of the leaves are applied on the infected area of ringworms, itching: antimicrobial [16].
6. *Curcuma domestica*, Halodhi Tharmitkeme, Zingiberaceae, Herb, Therhizomes paste are applied on the skin in cut, pimples, acne: antimicrobial [13].
7. *Abutilon indicum,*Country mallow Jhapa, Malvaceae, Herb, leaf pasteis applied on the wounded skin: antifungal [37], wound healing capacity [38].
8. *Amaranthus bicolor* Bishohari Mired Leaves, Amaranthaceae, Herb, The leaves are applied on the skin to stop bleeding when cut: High medicinal value [39].
9. *Eupatorium odoratum,* Germany bon , Bap bong-nai, Asteraceae, Shrub, the leaves are crushed and applied directly on the cutting area to stop bleeding: wound healing property [40].
10. *Grewia microcos* ,Pisa, Theng-pranke, Tiliaceae, Shrub, Barks, roots, The leaf juice are taken for treatment of small pox: Antiviral [41].
11. *Kalanchoe pinnata,* Pate -goja, Me abap, Crassulaceae, Herb, Leaves paste are applied on the wounded skin: Wound healing property [42].
12. *Oryza sativa*, Saul, Sang, Poaceae, Herb, The rice seed with the help of ginger is applied on the

affected areacaterpillars sting: Anti-Inflammatory activity [43].

13. *Plumbago indica,* Plumbago, Sam-ang, Plumbaginaceae, Herb, Root paste are applied locally on the skin caused by ringworms, and also on the wounded skin: Antifungal [44].
14. *Euphorbia hirta,* Gakhiroti bon, Hairypurge, Euphorbiaceae, Herb, Leaf paste is applied in sting of caterpillar and on the allergic skin: Anti-anaphylactic [45].
15. *Ocimum killimandscharium* Lamiaceae, Lopong, Herb, The leaf paste is applied locally in itching: antimicrobial [46]
16. *Colocasia esculenta,* Kola kosu, Cocoyam Henru, Araceae, Herb, The stem are made hot on fire and then applied on the ringworm affected area: Antifunga l[47] , Antibacterial [48].
17. *Elaeocarpus robustus*, Titajalphai, Thengprangbolong, Elaeocarpaceae, Tree, The leaves paste are applied on boils: Antimicrobial [49].
18. *Azadirachta indica,* Neem, Neem, Meliaceae, Shrub, The leaf paste applied on small pox: Antiviral [9], antifungal [10].
19. *Hibiscus sabdariffa,* Rosalle, Hanserong, Malvaceae, Shrub, Leaves are crushed and applied on the affected areas of injury, insect sting etc. for immediate result: Antimirobial [50].
20. *Cassia tora*, Bon medelwa, Hadidiga, Fabaceae, Herb, Leaves paste is used on the affected areas of ringworm and eczema: Antibacterial [51].

It was observed that, the plants used for skin diseases are very easily found almost in every season. The leaves are frequently used. The stem which has been used are mostly in premature stage so that secondary metabolites having medicinal properties like alkaloid can be extracted properly. Along with this the seeds are also used in order to extracted the oil which fight against the diseases. Method to preparation of medicine by both the communities is almost very simple. They do not require any machinery frame to prepare it, they mostly used traditional system of grinding. Sometime they used dry leaf powder or fresh leaf paste in the infected parts of skin.

4. CONCLUSION:

Phytoremedies and associated Traditional knowledge plays an important role in the treatment of different commonly occurring ailments amongst almost all the ethnic tribes of Assam. Ethnic communities have tremendous faith and belief on traditional medicines or phytoremedies. The people of the Tea tribes of Assam, one of the ethnic plain tribe and Karbitribe, one of the hills tribe of Assam also possess remarkable accurate knowledge about the application of indigenous plants around them against different common ailments including skin diseases. In the present study all total 19 indigenous medicinal plants were recorded and documented which are used against various skin diseases by Tea tribe community and 20 indigenous medicinal plants were recorded and documented which are used against various skin diseases by Karbi tribe of Assam. Biological and phytochemical screening of these plants convincingly demonstrated their medicinal properties which validates the traditional knowledge of various ethnic communities regarding the application of these plants as phytoremedies.

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