Journal of Medicinal Plants Studies
www.PlantsJournal.com

ISSN (E): 2320-3862
ISSN (P): 2394-0530
NAAS Rating: 3.53
JMPS 2018; 6(3): 38-42

Received: 17-03-2018
Accepted: 20-04-2018

Rasmita Nath
Department of Botany,
Kuchinda College, Kuchinda,
Odisha, India

Lalit Mohan Behera
Ex-Reader in Botany,
Modipara (Near Water Tank)
Sambalpur, Odisha, India

Correspondence
Rasmita Nath
Department of Botany,
Kuchinda College, Kuchinda,
Odisha, India

Ethnomedicinal plants used against skin diseases by the tribals of Kuchinda sub-division of Sambalpur district in western Odisha

Rasmita Nath and Lalit Mohan Behera

Abstract
Medicinal plants have been used since time immemorial and play an important role in life of human being. It has also been accepted by the people of developing countries. The art of herbal treatment has very deep root in Indian culture; people use the plants not only for curing diseases but also during various ceremonies. The present paper highlights on the study of ethnomedicinal plants used to treat skin problems by the people and tribals of Kuchinda sub-division of Sambalpur district in western Odisha. The study was focused on identifying medicinal plants, parts used, methods of preparation, and process of administration. The data was collected using interview and questionnaires by selecting different groups of people. A total of 28 medicinal plant species are described from the study area used for treating various skin diseases.

Keywords: Ethnomedicinal plants, Skin diseases, Tribals, Kuchinda sub-division

Introduction
Medicinal plants have been widely used in traditional herbal medicines by the people from time immemorial for the treatment of various diseases and ailments. There is an increasing demand for the utilization of medicinal plants for providing primary health care, as they are extensively available and cheap. Medicinal plants had been used by all cultures through The World Health Organization (WHO) has estimated that as many as 80% of the world population is dependent on traditional medicine for their primary health needs [1]. The use of plants as medicine is as old as the history of mankind [2]. Traditional medicinal plants used in India are about 4000 years old [3]. Hundreds of medicinal plants are used worldwide for skin diseases caused by bacteria, fungi and viruses [4]. The art of herbal treatment has very deep root in Indian culture and people used the plants not only for curing diseases but also during several ceremonies. India is a repository of medicinal plants and at present about 65% of Indians dependent on the traditional system of medicine [5, 6].

Odisha State is situated in the eastern part of India having 30 districts. Sambalpur is one among them and is situated in the western part of the State. Kuchinda is a sub-division under Sambalpur district and Bamra forest division. Kuchinda has a wildlife forest range covering an area of 46,891.530 hectares. Kuchinda town is a notified area council in Sambalpur district. This is located between 84° 15’ E longitude and 21° 39’ N latitude. It is situated about 80 Kms from the district headquarters Sambalpur and 48 Kms from Jharsuguda railway junction.

Skin problem which affects all groups from infants to elderly people and causes harm in number of ways. Maintaining healthy skin is important for a healthy body. Skin disease is an allergy, a fungal or bacterial infection or due to stress. An important group of these skin pathogens are the fungi, among which dermatophytes and Candida species are mainly responsible for causing severe and irritating skin disorders, although certain pathogenic bacteria are also the most common [7].

There are many of skin diseases that affect humans and animals. The most have common conditions and can have common symptoms. Therefore it is important to understand the difference between them. Some skin diseases are temporary and some are permanent. It is important to diagnose any skin disease correctly, so that its treatment can be easier.

Traditionally the plants are used as medicine by the tribals and rural people and some urban people, because these are easily available in their vicinity, and some are more effective as compared to other medicines.

The tribals prefer to use herbs with a greater confidence as they cure diseases without or with less side effects. Many herbs which are rich in minerals, antioxidants, and bioflavonoids are of great importance for the skin. Herbs can cleanse, hydrate, heal, and balance the skin [8]. An attempt has been made in this paper to highlight on the use of ethnomedicinal plants against some common skin diseases in Kuchinda sub-division.

Materials and Methods

Ethnobotanical surveys have been carried out during 2016-17 in various tribal pockets of Kuchinda sub-division. Information on ethnomedicinal uses of plants were collected in the field and confirmed through personal interviews with the tribal healers, experience old men and women of different forest patches. The information gathered from one place was crosschecked with information from other places and followed by relevant scientific literatures [9-16]. The collected plants were identified with the flora books [17, 18] and the voucher specimens have been deposited in the herbarium of Departments of Botany of Kuchinda College, Kuchinda.

Enumeration

The plants are arranged alphabetically as per their correct botanical names followed by family name within parenthesis, local names in inverted comma along with voucher number at the end and ethnomedicinal uses.

Achyranthes aspera L. (Amaranthaceae), 'Apamaranga', Bankey-14

Leaf extract with a pinch salt is applied on the affected area twice daily to cure tinea and ringworm. Root of the plant and seeds of *Raphanus sativus* are crushed to paste and applied externally on the affected area to cure leucoderma.

Albizia lebbeck Benth. (Mimosaceae) 'Sirisa', Ardabahal-41

Leaf powder along with cow ghee is applied on the affected area once daily to cure psoriasis and eczema. Bark (10g) is soaked overnight in water (250ml) and is crushed in the morning and filtered. The filtrate (1-2 teaspoon) is taken once daily to cure itching and scabies.

Anacardium occidentale L. (Anacardiaceae), 'Lanka –amb', Kuchinda-82

Bark powder (half teaspoon) along with honey is taken once daily in empty stomach in the morning for six months to cure leprosy.

*Andrographis paniculata (*Burn.f.) Wall. ex Nees (Acanthaceae), 'Bhuien neem', Kaputikira- 23

Leaf extract (one teaspoon) is taken once daily in empty stomach for one week and then discontinued for a period of three days. Again continue for one week if required to cure itching, scabies and ringworm. Leaf (4-5 numbers) and a piece of turmeric are crushed together. The paste is applied over the affected area to get relief from itch.

Argemone mexicana L. (Papaveraceae) 'Dengvegiri', Ghosa-37

Leaf paste is applied externally over the affected area twice daily to cure eczema. Root paste is mixed with sugar (4:1) and taken with water to cure skin disease mainly fungal infection. Seeds paste is mixed with turmeric powder and is applied on the affected part at least for one week to cure scabies.

Averrhoa carambola L. (Oxalidaceae), 'Karamanga', Sinkolposi-46

Fruit of the plant and *Tamarindus indica* seeds (after removing the seed coat) are crushed together. The paste obtained is applied 2-3 times a day over the affected part to cure psoriasis and *tinea versicolor*. The affected part is washed with warm leaf decoction twice daily to cure scabies.

Azadirachta indica A. Juss (Meliaceae), 'Neem', Sardhapali-80

Leaf (10 gm) and fruit of *Piper nigrum* (7 numbers) are crushed together and boiled. The
decoction is taken twice daily to cure scabies. Leaf paste along with turmeric powder is applied over the affected part to get relief from chicken pox and small pox.

Boerhaavia diffusa L. (Nyctaginaceae), 'Godhapuruni', Saida-21

Leaves are crushed and boiled in coconut oil. It is applied locally two times daily to treat ringworm.

Bombax ceiba L. (Malvaceae), 'Simili', Matrimunda-76

The thorn of the plant is rubbed on a piece of sandal wood with a little cow milk and the paste obtain is applied externally to cure pimples and unwanted spot.

Butea monosperma (Lam.) Taub. (Fabaceae), 'Palash', Saida-49

Seed powder along with own saliva is applied externally to cure ringworm. Seed powder and lemon juice are mixed together and applied over the affected part to cure scabies. Leaf paste is applied externally to cure pimples.

Calotropis gigantea (L.) W. T. Aiton (Apocynaceae), 'Arakha', Mundalai-28

Latex of the plant, *Zingiber officinale* rhizome powder and coconut oil is heated gently and applied on the affected area to cure eczema. Equal amount of root bark paste and date palm sugar are mixed together. About 2 gm of it is taken with warm milk after dinner to cure leprosy.

Ficus benghalensis L. (Moraceae), 'Bara', Kuchinda-54

Latex of the plant is applied on the affected area to cure heal crack. A poultice prepared from the fresh leaves extract is applied over the affected part to treat unhealthy skin.

Ficus racemosa L. (Moraceae), 'Dimir', Sadhapali-55

Bark is rubbed on a piece of *Santalum album* wood with a little water to obtain a paste. The paste is applied on dry and cracked skin at regular interval for 3 – 5 days to get normal skin.

F icus religiosa L. (Moraceae), 'Ashwatth', Baksma-59

Leaves (21 numbers) are crushed properly and mixed with molasses (20gm). 7 tablets are prepared from it. One tablet is taken with milk twice daily in empty stomach to cure psoriasis. Bark of the plant, bark of *Andrographis paniculata*, and *Lawsonia inermis* (100gm each) are crushed together and boiled in water (2 litres) to reduce it to half a litre. The decoction (5ml) is taken with water (half a cup) twice daily in early morning and evening for three weeks regularly to cure eczema.

Justicia adhatoda L. (Acanthaceae), 'Basang', Laidaguna31

Leaf paste is applied on the affected part 2 times daily to cure scabies and ringworm.

Lantana camara L. (Verbenaceae), 'Putush', Kusumi-29

Fresh leaf paste is applied topically to treat skin eruptions and itch.

Lawsonia inermis L. (Lythraceae), 'Benjati', Patrapali-53

Leaf paste mixed with seed oil of *Brassica campestris* is applied externally to cure heal crack. Leaves (5 gm) are soaked overnight in a glass of water and crushed in the morning and filtered. The filtrate is taken once in empty stomach to cure cracking of nails.

Leucas aspera (Willd.) Link (Lamiaceae), 'Gayash', Lade-11

Leaf juice of the plant with a pinch of salt is applied locally to cure ringworm and skin eruption. Whole plant is sun-dried and powdered. The powder (5 gm) and *Azadirachta indica* leaf powder (3 gm) are boiled in 2 glasses of water and reduced to $1/4^{th}$. It is filtered and the filtrate is taken 2 times daily to cure acne, pimples, itching and scabies.

Mimosa pudica L. (Mimosaceae), 'Lajkuli', Kuchinda-6

Leaf extract is rubbed on the affected part to prevent itching.

Neolamarckia cadamba (Roxb.) Bosser (Rubiaceae), 'Kadamba', Kuchinda- 33

Equal amount of leaf and bark are crushed together and the paste obtained is applied externally on the affected part to cure redness of skin and itching. Bark paste is applied over the affected part to cure black spot and pimples.

Nyctanthes arbor-tristis L. (Oleaceae) 'Gangaseuli', Bandubas-18

Stem paste mixed with seed oil of *Schleichera oleosa* is applied on the affected part to cure leucoderma.

*Pongamia pinnata (*L.) Pierre (Fabaceae) 'Karanja', Chakdhar-66

Seeds of the plant ground with goat milk is allowed to sun-dried till it turns blue in a bronze container. The paste is applied regularly for at least for one month to cure eczema. Seeds are properly ground and the paste is applied over the affected area to cure tinea infection.

Pterocarpus marsupium Roxb. (Fabaceae), 'Pia-sal', Gudguda-60

Fresh leaf paste is applied on affected area to cure leucoderma and tinea infection.

Shorea robusta Roth. (Dipterocarpaceae), 'Sal', Sinkolposi-64

Resin is crushed with a little water and applied on the affected area for 10 to 15 days to cure for skin eruption. Latex is mixed with turmeric powder and cooked in mustard oil. The paste obtained is applied on the affected part to cure infection of skin between the toes locally known as 'Keintra'.

Schleichera oleosa (Lour.) Oken. (Sapindaceae), 'Kusum', Saida-57

Seed oil applied locally to cure scabies. Bark paste is applied externally to cure itching.

Terminalia arjuna (Roxb.) Wight & Arn. (Combretaceae), 'Kaha', Chakdhar-71

Equal amount of bark of the plant, *Azadirachta indica* leaf and cow's urine are crushed together and the paste obtained is applied locally at least for a period of 3-6 months to cure leucoderma.

Tamarindus indica L. (Caesalpiniaceae), 'Tentuli', Kuchinda-43

Equal amount of seeds of the plant and *Psoralia* seeds are soaked in water for four days and after that the seeds rind are peeled off and dried in a cool place. The seeds are ground with water. The paste obtain is applied on the affected area of leucoderma until it appeared red colour from white colour. Fruit pulp of the plant and turmeric powder are mixed together and applied on the affected part to cure skin irritation.

Vitex negundo L. (Verbenaceae), 'Begunia', Thianal-35

Leaves are boiled in a earthen pot and person suffering from ringworm is allowed to take bath in this water for a period of 21 days.

Results and Discussion

The study revealed that 28 ethnomedicinal plant species belonging to 26 genera and 19 families are frequently used for the treatment of various skin diseases by the people of Kuchinda sub-division. The herbal traditional healers have been using several plants and plant parts to cure various skin related diseases/ problems such as itch, scabies, ringworm, eczema, pimple, leucoderma, psoriasis, leprosy, heal crack, dry and crack skin, unhealthy skin, chicken pox, small pox, tinea infection, fungal infection, redness, unwanted spots in skin, skin infection, skin eruption and black spots (Fig. 1 and Fig. 2).

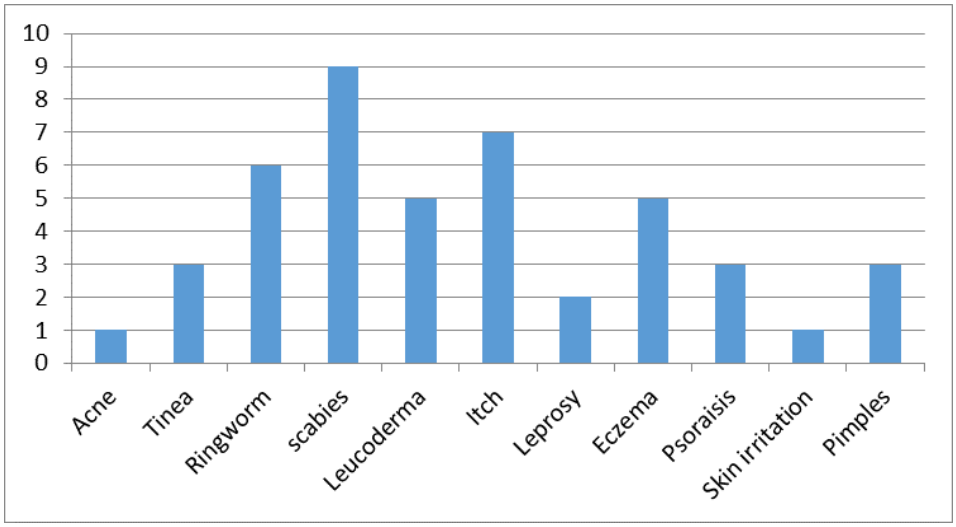

Fig 1: Number of remedies for various skin diseases

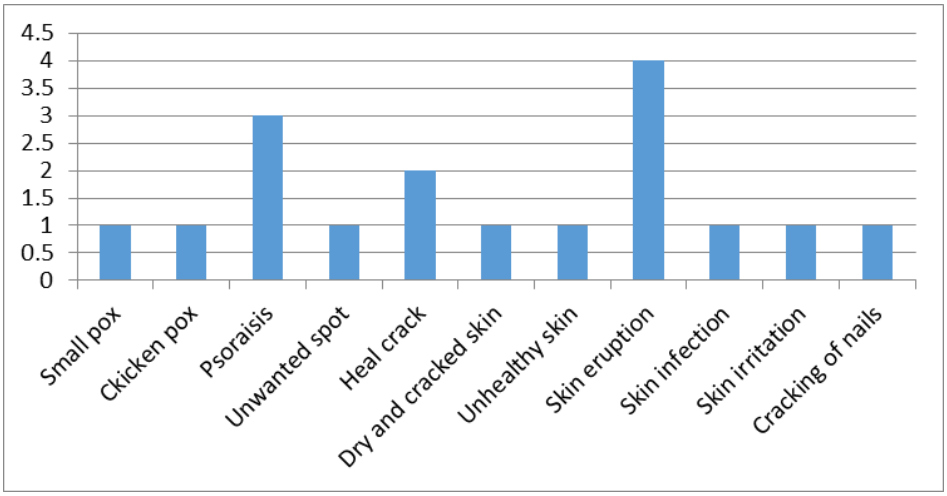

Fig 2: Number of remedies for various skin diseases

Seventeen tree species are the most commonly used plants followed by 6 herbs species and 5 shrub species (Fig.3). In this study it is found that, members of the family fabaceae and moraceae with 3 species each are most commonly used plants for the treatment of skin diseases. Other families includes verbenaceae, mimosaceae and acanthaceae with two species each.

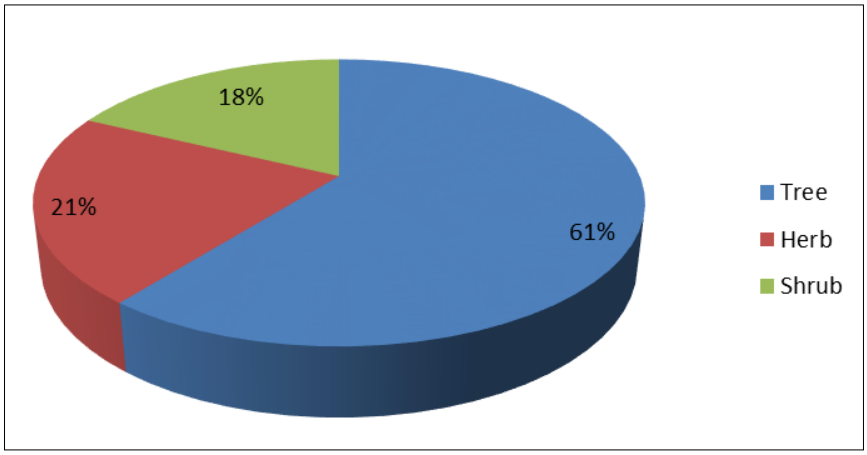

Fig 3: Percentage of habit of ethnomedicinal plants

The present study has revealed 60 prescriptions from 28 ethnomedicinal plants. Different plant parts are used as medicine by the local traditional healers. Among the different plant parts, the leaves are the most frequently used for the treatment of skin diseases followed by stem bark, seed, fruit, latex, root, stem, whole plant, thorn, root bark, gum and mixture of leaf and bark. The methods of preparation (fig.4) fall into five categories viz. Plant parts applied locally or taken orally as paste (57%), powder, decoction and extract (11% each), infusion (6%) and oil and latex (2% each). Out of these 56 prescriptions 49 prescriptions are used externally whereas only 7 prescriptions are consumed orally.

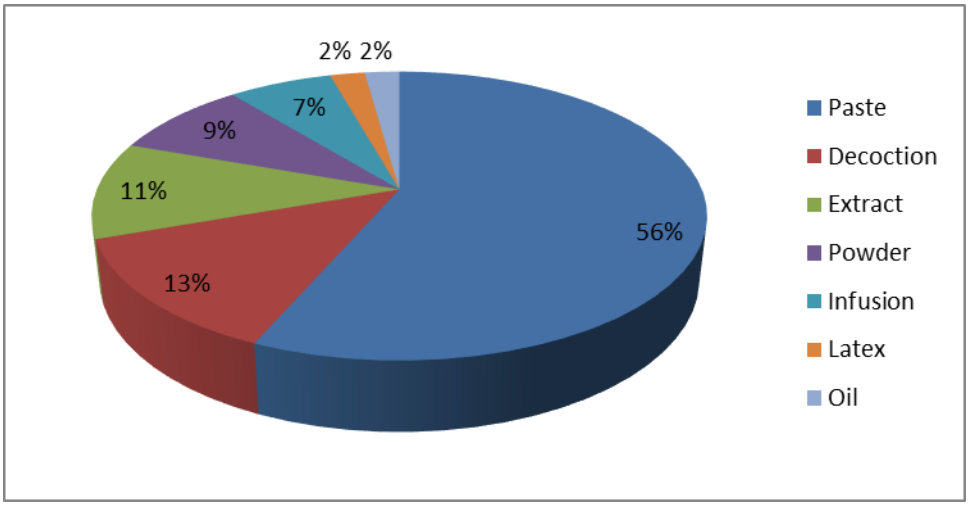

Fig 4: Method of preparation

Conclusion

Herbs have great potential to cure different kinds of skin diseases. More than 80% of people in India depend on traditional health care and use different plant based products for curing skin related problems like itch, ringworm, scabies, eczema, leucoderma, leprosy, pimple, psoriasis, heal crack, dry and cracky skin, unhealthy skin, chicken pox, small pox, tinea infection, fungal infection, redness of skin, unwanted spots, skin eruption and black spots. Most of the people of the world live in villages and also most of them suffer from various skin diseases. There are a number of medicinal plants which are used traditionally by the tribals and rural people in skin problems. Herbs are rich source of active ingredients and can be safe and cost effective for treatment of skin diseases. The present paper highlights on identification and use of herbal medicines to cure dermatological disorders by the people of Kuchinda sub-division.

Further it has been suggested by old informants that the population of several plants are disappearing day by day due to various human activities in and around the forests. That is why it is high time to take utmost care of the plant life of this locality through cultivation, protection and *in-situ* and *ex-situ* conservation. Besides, it is proposed for extensive and detailed pharmacological study which may lead to the development of more effective medicines from medicinal plants for skin care and cure.

Acknowledgement

The authors are thankful to Dr. S. K. Sen, Department of Botany, Panchayat College, Bargarh for his help to prepare this paper. The authors show their sense of gratitude to the herbal practitioners and other informants of Kuchinda sub-division for providing their valuable knowledge on medicinal plants.

References

1. Bannerman RH. Traditional medicine in modern health care. World Health Forum. 1982; 3(1):8-13.
2. Al-Douri NA, Al-Essa L. A survey of plants used in Iraq traditional medicine. Jordan J Pharmaceutical Sci., 2010; 3(2):100-110.
3. Dolatkhai M, Dolatkhai A, Nejad JB. Ethnobotanical study of medicinal plants used in Arjan-Parishan projected area infers Province of Iran. Avicenna J Phytomed. 2014; 4:402-412.
4. Prashantkumar P, Vidyasagar GM. Traditional knowledge on medicinal plants used for the treatment of skin diseases in Bidar district, Karnataka. Indian J Trad Know. 2008; 7(2):273-276.
5. Bhatt DC, Mitaliya KD, Patel NK, Ant HM. Herbal remedies for renal calculi. Adv Plant Sci. 2002; 15(1):1-3.
6. Policepatel Dhivkumar, Manikrao Vidyasagar Gunagambhire. Ethnpmedicinal plants used in skin diseases in Hyderabad, Karnataka region, Karnataka, India. Asian Pac J Trop Biomed. 2013; 3(11):882-886.
7. Desta B, Ethiopian traditional herbs (Part II) Antimicrobial activity of 63 medicinal plants, Journal of Ethnopharmacology. 1993; 39:263-276.
8. Saikia AP, Ryakala VK, Sharma P, Goswami P, Bora U. Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics, Journal of Ethnopharmacology. 2006; 106:149-157.
9. Jain SK. Dictionary of Indian Folk Medicine and Ethnobotany. Deep Publications, New Delhi. 1991, 1-311.
10. Kirtikar KR, Basu BD. Indian Medicinal Plants. (Reprint edn.), Allahabad; Lalit Mohan Basu. Allahabad, 1991, 44
11. Ambasta SP, Ram Chandran K, Kashyappa K, Chand R. The Useful Plants of India. Publication and Information Directorate, CSIR, New Delhi, 1992, 1-918.
12. Chopra RN, Nayar SL, Chopra IR. Glossary of Indian Medicinal Plants. Reprint edn., National Institute of Science Communication, CSIR, new Delhi, 1996, 1-330.
13. Warrier PK, Nambir VPK, Ramamurthy G. Indian Medicinal Plants. New Delhi; Orient Logman., 1996, 5.
14. Pal DC, Jain SK. Tribal Medicine. Naya Prakash. Calcutta, 1998, 1-317.
15. Joshi SG. Medicinal Plants. Oxford and IBH Co. Pvt. Ltd., New Delhi, 2006, 491.
16. Sahoo AK. Glossary on Useful Plants of Odisha. The Odisha State Bureau of textbook preparation and production, Pustak Bhavan, Bhubaneswar, Odisha, 2014, 1-407.
17. Haines HH. 1921-25. The Botany of Bihar and Orissa. Arnold & Son & West Nirman Ltd., London. 1921-25, 1-1348.
18. Saxena HO, Brahmam M. The Flora of Orissa. Regional Research Laboratory, Orissa and Orissa Forest Development Corporation Ltd., Orissa. 1994-96, 1-2918.