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Study of medicinal plants used to heal skin diseases by tribes of west Singhbhum district of Jharkhand (India)

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Abstract
The present paper deals with the study of 30 medicinal plant belonging to 22 families used by the tribal people of West Singhbhum, Jharkhand(India) to heal skin diseases such as eczema, leprosy, leucoderma, scabies, skin eruptions, ringworms, wounds, etc. This paper reports on herbal plants used to cure various skin diseases is based on the survey conducted in the Tonto and Jhinkpani block of West Singhbhum district. The survey was conducted during month of June 2013 to May 2014 for spot collection, identification and ethnobotanical enumeration of herbal plants. The information was provided by elderly people of the village regarding the medicinal use of the plants and was compared with the available literature. The botanical names of the plants species are arranged alphabetically with their families, local name and the part of the plant used to treat various skin diseases. Without proper documentation of traditional knowledge of medicinal plants, the cultural heritage is losing. Hence, the study was carried out with an aim to document medicinal plants for the treatment of various skin diseases.

Keywords: medicinal plants, skin diseases, west singhbhum, tribes

Introduction
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 [1]. Before the introduction of chemical medicines, man relied on the healing properties of medicinal plants. Some people value these plants due to the ancient belief which says plants are created to supply man with food, medical treatment, and other effects [2]. 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 [3]. The World Health Organization [4] estimates that as much as 80% of the world's population is currently using some type of herbal treatment. 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 cancer, 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 theurapatic 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.

Study Area
Jharkhand a state in eastern India has an area of 30,778 sq. miles (79,710 km) and the population is approximately 32.96 million. The state of Jharkhand was formed on 15th November 2000. The state comprises of 24 districts. West Singhbhum is one of the 24 districts of Jharkhand, India. Chaibasa is the district headquarter. The district is bounded on north by khunti district, on the east by Saraikela-kharsawan, on the south by Keonjhar, Mayurbhanj and Sundergharh district of Odhisa and on west Simdega district of Jharkhand. The district extends from 21.97degree N- 23.60 degree N and from 85 degree- 86 degree E. The district is covered with hills alternating with valleys, steep mountains and dense forest on mountain slopes. The state is dominated with the population of tribes. The most ancient among them are the Mundas, Ho, Oraon, Kharia, Santhal, Birhor, etc. the area of my study is dominated by "Ho" and "Munda" tribes.

Most of the workforce is engaged in agriculture, mining, quarring, wage labour and other livelihood based on forest produce. In recent times, livelihood option of rural people is under threat due to rapid indutrialization being very rich in mineral resources.

Materials and Methods

Periodic field trips were under taken to different villages of West Singhbhum during month of June 2014 to May 2015. The data were collected considering two different types of observation viz., ethnobotanical and household survey related to quantification of plant gathered. The first way of data collection was by 'interview' involving question about local name, part use 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 [5], Babu [6], Chopraet [7], Haines [8], [9] Hooker [9], Kanjilal [10], Jain [11, 12], Maheshwari [13], Topno and Ghosh [14] and Kurian [13] as the standard references. A total number of 30 plant species are recorded during the survey and these were enumerated and listed below in table1, arranged alphabetically by botanical name followed by family, local name habit and parts used as observed in field and compared with the recorded published literature the mode of administration is also presented below the table.

Enumeration

Enumeration of medicinal plants used by tribal people of West Singhbhum district of Jharkhand are as follows –

Table 1

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

Mode of Administration

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 next 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.
11. *Clitoria ternatea* L. - Fresh leaf paste is applied in various skin problems.

12. *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.
13. *Curcuma longa* L. - Rhizome paste is applied externally in wounds.
14. *Heliotropium indicum* L.- Leaf paste is used on wounds, scabies, eczema and other skin problems.
15. *Kigelia Africana* (Lam.) Benth.- Paste prepared from dried fruit is useful in wounds, acne, abscess and ulcers.
16. *Lawsonia inermis* L. - Paste prepared from leaf is applied on cuts, wounds and burning sensation on the feet.
17. *Leucas aspera* Spreng. The juice of the leaf is used externally for the treatment of psoriasis and chronic skin eruptions.
18. *Mimosa pudica* L. – Paste of whole plant is applied on eczema, cuts and wounds.
19. *Mangifera indica* L.- Raw fruit is roasted or boiled and the pulp is applied in sunstroke or sun burn.
20. *Pongamia pinnata* (L.) Pierre.- Application of seed oil is usefuk in scabies, leprosy, minor cuts and other skin infection.
21. *Phyllanthus emblica* L. -Dried bark powder is boiled with coconut oil and applied externally on scabies.
22. *Phyllanthus niruri* L.- Paste of the leaf is applied over the skin to treat skin infection.
23. *Ricinus communis* L. - Seed oil is applied in eczema and other skin ailments.
24. *Rumex maritimus* L. - Leaf paste is applied on burns, itching and wounds.
25. *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.
26. *Sida rhombifolia* L. - The poultice of the whole plant is applied externally on ulcers, boils, cuts and any inflammatory virus disease of the skin.
27. *Terminalia arjuna* (Roxb.) W.&A.– Bark paste is applied on burns, acne and wounds.
28. *Tinospora cordifolia* (Willd.)-Decoction of the stem when taken with ghee on empty stomach everyday in the morning is helps in treatment of all common skin diseases.
29. *Tridax procumbens* L. - Decoction of the leaf or leaf juice is applied externally on the boils, cuts, sores, wounds and eczema.
30. *Vitex negundo* L. - leaf paste is applied in Acne. Boiled leaf paste is applied in Eczema.

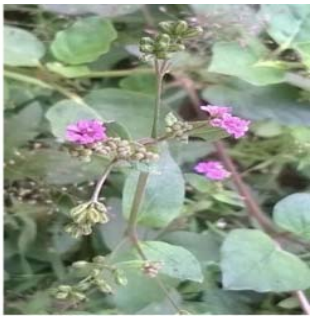

Achyranthes aspera L.


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 L.


Clitoria ternatea L.


Costus speciosus (Koenig) Sm.


Curcuma longa L.


Heliotropium indicum L.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Mimosa pudica L.


Mangifera indica L


Pongamia pinnata Pierre.


Phyllanthus emblica L.


Phyllanthus niruri L.


Ricinus communis L.


Rumex maritimus L.



Schleichera oleosa (Lour.)Merr. *Sida rhombifolia* L. *Terminalia arjuna* (Roxb.)W. & A.



Tinospora cordifolia (Willd.) *Tridax procumbens* L. *Vitex negundo* L.

Result

The study of 30 species belonging to 22 families were identified. In table 1 the plant species were verified and authenticated as 14 herbs, 8 trees, 4 shrubs and 4 climbers. It was observed that leaves were the most widely used plant part accounting for 17 plant species in a total of 30 recorded plants. This was followed by barks (3 species), fruits (2 species), seeds (3 species), fruits (2 species), rhizome (2 species), tuberous root (1 species), and whole plant (1species). 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 tribal community.

Discussion

Herbals 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. Compared with the conventional allopathic drugs, they have relatively low cost and can be of great benefit to the population of India in general and poor people in particular More than 50% of plant species useful for treatment of skin diseases appear to be restricted to forests, so activities such as deforestation, habitat destruction, urbanization etc., may pose a serious threat to these species. Conservation of these plants with the help of local participation and carrying out of extensive research in this respect to broaden the prospects of herbal drugs in skin disease treatment is the need of the hour. Use of plants as a source of medicine has been an ancient practice and is an important component of the health care system in India. In the Indian system of medicine, most practitioners formulate and dispense their own recipes, hence this require proper documentation and research.

Conclusion

From the above discussion, the study of 30 medicinal plants envisage that the medicinal plants of this area have great potential to treat a wide range of skin diseases. The tribal people in the study areas of West Singhbhum depends on medicinal plants for the treatment of various skin diseases. It is now necessary to make tribal people aware about the value of their indigenous knowledge and help the society in preserving this traditional method of treatment by proper documentation and identification of plant species.

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