

Full Length Research Paper

Traditional phytotherapy of some medicinal plants used by Tharu and Buxa tribes of Uttarakhand used in skin diseases

Garima Pandey, Krishan Kumar Verma*, Sanjay Kumar and Munna Singh

Department of Botany, University of Lucknow, Lucknow - 226 007 (U.P.), India.

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This study aimed to identify and understand the utilization of medicinal plants for curing skin diseases used by Tharu and Buxa tribes of Uttarakhand. A field study was conducted in Tharu and Buxa rich Tarai belt (northern fringe of Indo-Gangetic Plains) in U. S. Nagar district of Uttarakhand (India) during different seasons. Tharu and Buxa tribes of the study area were found to use 37 plant species of 27 families for skin cure. Among the plant parts used, the highest number was observed for the use of leaves to cure skin disorders. The most common skin diseases treated using medicinal plants are cuts and wounds, maggots, dog/ insect bite, burns and sores, boils, blisters and abscesses, fungal infections, leucoderma, inflammation, pimples, itching, allergy and other skin disorders. A large numbers of plants are being used for other skin disorders followed by cuts and wounds and boils, blisters, abscesses. In the information obtained, there were many details about the appropriate indication of each plant. For example, some plants are indicated to increase other's potency. There are also plants that are traditionally employed for specific symptoms or conditions that often accompany itching, allergy and other skin disorders. Thus researchers should observe ethnomedical information before deciding which kind of screening should be used in the search of drugs for skin diseases.

Key words: Ethnobotany, skin disorders, Tharu and Buxa tribes, traditional knowledge.

INTRODUCTION

The tribal communities from various ecosystems use the largest proportion of biodiversity for their economic empowerment and health care. For sustenance of any specific biodiversity, the traditional knowledge of utilizing medicinal plants must be in resilience of environment (Kala, 2005; Kingston et al., 2009). Thus proper documentation of such knowledge is required in order to protect over- exploitation leading to severe environmental degradation (Jeeva et al., 2005; Kanwar et al., 2006). In view, of this, an attempt was made to explore the indigenous system of medicine for skin cure used by Tharu and Buxa tribes inhabiting in the northern fringe of the Indo-Gangetic Plains in Uttarakhand state of India.

In this context, a battery of knowledge has been generated, linked with the utilization of ethnic medical

systems which led to increased use of herbal medicines (Jadhav, 2006; Bapuji and Ratnam, 2009; Acharya and Acharya, 2009). However, there are only a few reports on the utility of medicinal plants in the treatment of specific diseases viz., different types of fever (Sharma and Joshi, 2010), dental health care (Sadanji et al., 2005), ear and mouth diseases (Kadel and Jain, 2008) and treatment of snake bite (Spiewak, 2000). The skin serves many functions viz. protection, thermoregulation, percutaneous absorption, secretory and sensory. Skin ailments cause harm to people of different age groups, in various ways and account for 34% of prevailing diseases (Geber-Miriam et al., 2006). The management of skin disease is becoming a priority due to the association of skin opportunistic infections and human immunodeficiency virus infection / acquired immunodeficiency syndrome (HIV/AIDS). It has been reported that 92% of HIV infections are cutaneous and mucosal disorders (Jordaan, 2008). Infectious diseases, particularly skin and mucosal infections, are common in

*Corresponding author. E-mail: kverma22feb@yahoo.in. Tel: +91 9454114737.

most of the tribal inhabitants due to lack of sanitation, potable water and awareness of hygienic food habits (Nagariya et al., 2010). These unhygienic living conditions lead to numerous fungal and bacterial infections, which have increased to a great extent due to the non availability of safe anti fungal/ anti bacterial drugs for systemic infections. The traditional healers have prescribed various prescriptions of medicinal plants for curing dermatological ailments such as itch, eczema, scabies and other skin diseases (Demissew and Dagne, 2001; Lagachu et al., 2011). More than 95% of traditional medicinal preparations all over the world, are of plant origin (Inngierdingar et al., 2004). Use of medicinal plants in various tribal zones of India for treatment of skin ailments has been reviewed (Kumar, 1994; Begum and Nath, 2000; Gupta et al., 2010) and reported from different places (Shah and Joshi, 1971; Sharma et al., 1979; Purohit et al., 1985; Upadhyaya et al., 1998; Sen and Behara, 2003; Kingston et al., 2009). However, the traditional knowledge of using medicinal plants for skin cure by tribal groups of northern fringe of Indo Gangetic Plains is still not completely explored. Therefore, the present study was conducted with the aim to preserve the traditional knowledge of using medicinal plants for skin cure by the ethnic groups of our study area as indicated.

MATERIALS AND METHODS

Study area

The Tarai region which is the northern fringe of the Indo-Gangetic Plains situated between 28° 43' and 29° 26' N latitudes and between 78° 53' and 80° east longitudes and at an altitude between 230 to 900 m is spread over the states of Uttarakhand, Uttar Pradesh, Bihar and West Bengal. Out of these states Tharu and Buxa tribe rich area was selected as study area, which falls in Tarai region of Uttarakhand. The region is largely sub-humid to sub-tropical. Nearly, 1/3rd of the region comes under Uttarakhand and rest under Uttar Pradesh, Bihar and West Bengal. The authors concentrated their study in two Tharu dominated villages viz. Phulaiya (Sitarganj block) and Ratanpur (Khatima block) and two Buxa dominated village viz. Buxora (Rudrapur Block) and Bannakherah (Bajpur Block) of district Udham Singh Nagar.

Collection of information and samples

Information on the use of medicinal plants for the treatment of skin diseases was collected from the study area through field surveys, semi-structured interviews with selected knowledgeable elders and local *vaidyas*. The plant specimens were collected and identified, dried by using routine botanical collection methods and preserved for further analysis. The medicinal properties

of plants were confirmed by similar uses from 100 informants. Plant specimen collected from field with their local names was identified with the help of regional and local flora and confirmed with the authentic specimens deposited in the Department of Botany, Lucknow University for future reference.

RESULTS AND DISCUSSION

Our study provides information based on 37 plant species of 27 families, commonly used for skin cure by the Tharu and Buxa tribes of Tarai region. Leaves (23) are the most frequently used plant part followed by latex (2), rhizomes (3) whole plant (2), stem bark (2), stem (2), seed (1), roots (1), tubers (1) and seed oil (1). The common diseases treated using medicinal plants are cuts and wounds (10), maggots (1), dog / insect bite (5), burns and sores (2), boils / blisters / abscesses (7), fungal diseases (3), leucoderma (1), antiseptic (2), inflammations (4), pimples/ itching/ allergy (1), and 15 plants for other skin diseases. The detailed information of plant species with their parts used as traditional medicine for skin problems has also been presented in Table 1. A number of medicinal plants are used traditionally by the tribal people to cure skin disorders. In the present study we observed 37 plants used by the Tharu and Buxa tribes inhabiting northern fringe of Indo-Gangetic Plains in Uttarakhand. The phytotherapeutic uses of various medicinal plants have been known to the tribal people in different regions. Most of the people in Tharu and Buxa dominated villages, were almost free from serious skin problems. This could be due to their life style as they mostly remain exposed to environment. This may have developed resistance against skin disease pathogens due to use of traditional medicines followed by sanitation awareness measures which was lacking in the past (Bisht, 2006). This is a great change observed because old literatures indicated that these tribes used to leave such serious problems upon divine power (Singh and Maheshwari, 1994).

However, we feel that the indigenous knowledge and practices of the Tharu and Buxa tribes on utilization of plant resources as medicine should be reported and preserved before they get lost due to increasing integration. In the information obtained, there were many details about the appropriate indication of each plant. There are plants that are traditionally employed for specific symptoms or conditions that often accompany itching, allergy and other skin disorders. This vast array of rare medicinal plants can be used for further research only if we ensure proper conservation of these endangered species. Thus researchers should observe ethnomedical information before deciding which kind of screening should be used in the search of drugs for skin diseases which may also be a potential source of modern drug industries.

Table 1: Medicinal plants and their traditional uses for skin ailment.

S.N.	Family	Botanical name	Local / English Name	Parts used	Traditional uses
1	Amaranthaceae	<i>Achyranthus aspera</i> L.	Adharar, ulta cirita/ Pri ckin chattflower	Leaf	Leaf crushed and mixed with ghee is used in deep cuts and wounds.
2	Asteraceae	<i>Ageratum conyzoides</i> L.	Phulenia or Jamg / Goat weed	Whole plant	Powder of plant mixed with water applied for cuts and wounds of cattle infected by maggots. Leaves are used to kill lice in hairs.
3	Asteraceae	<i>Blumea lacera</i> Brm.	Sarwso/ Malay blumea	Leaf	Leaf paste is applied on parts affected from dog bite.
4	Leguminosae	<i>Butea monosperma</i>	Dhak/Parrot tree	Stem bark	Bark is burnt and the ash is applied over wound for healing.
5	Cactaceae	<i>Cactus indicus</i> Roxb.	Nagfani/ Indian pear	Stem	After removing thorns, the stem is heated and applied over wounded area to remove the swelling and pain.
6	Caesalpiniaceae	<i>Caesalpina Cristal</i> L.	Kamtela/ Fevernut	Leaf	Crushed leaves are applied on burns and sores.
7	Zingiberaceae	<i>Curcuma longa</i> L.	Hali / Termeric	Rhizomes	Paste of rhizome for inflammation, insect bite and wounds. Rhizome + Mustard oil paste for skin diseases.
8	Hypoxidaceae	<i>Curculigo orchoides</i> Gaertn.	Kali musli/ Golden eye grass	Tubers	Tuber (paste) is taken in debility, nasal emissions , and pimples
9	Asclepiadaceae	<i>Calotropis gigantea</i> L.	Amkh/ Milk weed	Latex	Latex mixed with salt is applied on boils, blisters and abscesses to remove Pus.
10	Caricaceae	<i>Carica papaya</i> L.	Papita / Papaya	Latex	Latex is used to cure skin diseases.
11	Manispermaceae	<i>Cissampelos pareira</i> L.	Nirvasi/ Velvetleaf	Leaf	Crushed leaf used to cure skin diseases, burns, wounds.
12	Verbenaceae	<i>Clerodendrum viscosum</i> Vent.	Bhamtada/ Hill Glory Bower	Leaf	Leaf decoction is used for bath in skin diseases. The leaf paste applied in fresh cuts and wounds to check bleeding.
13	Lamiaceae	<i>Colebrookea appositifolia</i> Sm.	Bimta Lakari/ Indian squirrel tail	Leaf	Crushed leaves applied for wounds .
14	Asteraceae	<i>Eclipta alba</i> L.	Kala bhamgra/ False Daisy	Leaf	Crushed leaves are applied on heel to cure fungal diseases locally known as Kharwam.
15	Fumariaceae	<i>Fumaria indica</i> Hausskn.	Dhania Ghas/ Fumitory	Whole plant	Plant is cooked as vegetable and and eaten incase of skin diseases.
16	Rutaceae	<i>Glycosmis arborea</i> Roxb. D C	Pataru/ Wild citrus	Leaf	Crushed leaves are used against skin diseases.
17	Tiliaceae	<i>Grewia asiatica</i> L.	Phalsa/ Grewia	Leaf	Leaves and leaf extract used as medicine for boils.
18	Lamiaceae	<i>Hyptis suaveolens</i> L.	Bhamtala/ Bush mint	Leaf	Leaf juice is used as antiseptic.
19	Helminthostachyaceae	<i>Helminthostachys zeylanica</i> L.	Ghas/ Tukod-langit	Rhizome	Paste of rhizomes in cow urine is used against skin diseases.
20	Ulmaceae	<i>Holoptelea integrifolia</i> Planch.	Cila/ Indian Elm	Stem bark	Paste of bark is used in Leucoderma and other skin diseases.
21	Convolvulaceae	<i>Ipomoea fistulosa</i> Mart.	Besharam/ Morning Glory Bush	Leaf	Leaf paste as antiseptic and leaf warmed in mustard oil is used against boils and inflammatory conditions.
22	Lamiaceae	<i>Leucas Cephalotes</i> Roth.	Guma/ Spiderwort	Leaf	Leaf paste is used for boils, blisters and insect bite.
23	Linaceae	<i>Linum usitatissimum</i> L.	Alsi/Flax	Seed	Seed paste with water is used to treat boils.
24	Schizaeaceae	<i>Lygodium flexuosum</i> SW.L.	Sinki/Maiden hair creeper	Rhizome	Rhizome powder mixed with cow urine to cure skin diseases.
25	Meliaceae	<i>Melia azedirach</i> L.	Nim / China berry	Leaf	Crushed leaves with water used against pimples, itching, allergy and other skin diseases.
26	Rutaceae	<i>Murraya paniculata</i> L.	Dadami/Orange jessamine	Leaf	Crushed leaves are used on cuts and wounds.
27	Martyniaceae	<i>Murtynia annua</i> L.	Bangnakha/Tiger claw	Seed oil	Seed oil and fruit endocarp paste applied against scorpion sting and insect bite.
28	Musaceae	<i>Musa paradisiacal</i> L.	Kela/ Banana	Leaf and root	Leaves and potato paste is used for healing of wounds. Root paste is used to cure boils and blisters.
29	Solanaceae	<i>Nicotiana rustica</i> L.	Tambakhu/ Tobacco	Leaf	Leaf paste applied for curing ring worms infections.
30	Lamiaceae	<i>Ocimum canum</i> Sims.	Jamgli Tulsi/ Wild basil	Leaf	Leaf paste is used to treat skin diseases.
31	Verbenaceae	<i>Premna latifolia</i> Roxb.	Bukar/ Bombay Presidency	Stem	Stem powder mixed with cow's urine applied against boils, blisters, fungal and other skin diseases.
32	Ranunculaceae	<i>Ranunculus sceleratus</i> L.	Jaldhania/ Cursed butter cup	Leaf	Leaf paste used to remove pus of boils, bubbles and abscesses.
33	Solanaceae	<i>Solanum melanogena</i> L.	Baigan	Twigs	Ash of dry twigs is used against dog bite.
34	Solanaceae	<i>Solanum nigrum</i> L.	Kalimakoi	Leaf and Whole plant	Leaf extract as well as cooked vegetable is used to check inflammation externally.
35	Rosaceae	<i>Rosa</i>	Gulab/ Rose	Leaf	Leaf paste is tied around the wounds for 2 to 3 days.
36	Malvaceae	<i>Sida rhombifolia</i> L.	Kaims or Karanti/ Arrow leaf sida	Leaf	Crushed leaves are applied to cure boils.
37	Verbenaceae	<i>Verbena officinalis</i> L.	Kharsama/ Verbena	Leaf	Crushed leaves applied on boils, cuts, wounds and other skin diseases.

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