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Ethnobotanical Study on Some Plants Commonly Used for the Treatment of Skin Diseases in Kotdwara-Bhabhar Range of Uttarakhand

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Abstract

Garhwal Himalayas, one of the richest floristic zones of India, are situated between 20°26'- 31°28'N latitude and 77°49'- 80°06'E longitude with a total area of about 3,000 km². The studied area lies between river Yamuna in west, and Ramganga in east,.Temperate Himalayan Forest in the north and sub-tropical Bhabar -tarai belt in the south. A field survey was conducted in the interior villages areas of Kotdwara and adjacent areas to collect information about ethno-medicinal plants to heal skin diseases. The studied areas are predominated by Gujjar, Buxa and local farmers. In present study 21 important plant species which are used against skin problems are enlisted and their detailed remedial procedure are given.

Introduction and Review of Literature

Garhwal Himalayas in Uttarakhand provides a matchless wealth of medicinal plants due to varied climatic and edaphic conditions. About 70 percent of plants used in preparation of drugs for indigenous system of pharmacology of this region. Garhwal Himalayas, one of the richest floristic zones of India, are situated between 20°26'- 31°28'N latitude and 77°49'-80°06'E longitude with a total area of about 3,000 km^2. Mother Nature has especially bestowed Uttarakhand with fabulous plant wealth of medicinal and aromatic plants (Sinha, 1982; Raj war, 1983, Negi, 1985). The Himalaya represents the richest diversity expanse of the medicinal plants in the country (Badoni, 2001). India has 16 agro-climatic zones, 45,000 different plant species, out of which 15,000 are medicinal plants. The Indian Systems of Medicine have identified 1,500 medicinal plants, of which 500 species are mostly used in the preparation of drugs.

A medicinal plant is any plant in which one or more of its organs, like fruits, leaves, flowers, seeds, berries contain substances that can be used for therapeutic purposes or which are precursors for the synthesis of useful drugs as well as in beauty formula massage application, food preservation and beverages. Plants synthesize hundreds of chemical compounds for various functions, including defense and protection against insects, fungi, diseases, and play an important role in the maintenance of health, wellbeing and everyday life of a population worldwide.

Medicinal plants which constitute a segment of the flora provide raw material for use in all the indigenous systems of medicine in India namely Ayurveda, Unani, Siddha and Tibetan Medicine. According to the World Health Organization (WHO), 80% of the population in developing countries relies on traditional medicine, mostly in the form of plant drugs for their health care needs. Additionally, modern medicines contain plant derivatives to the extent of about 25%. There are estimated to be around 25000 effective plant-based formulations available in Indian medicine.

Skin is the exposed to pathogens and various allergens. Interaction of skin to these may cause various skin diseases. For curing skin disorders, nature has been playing a major role. In Uttarakhand, plants are used by trials' local villagers as well as people residing in urban areas to cure skin ailments as their traditional mode of naturopathy.

Materials and Methods

Based on the reconnaissance survey, three sites were selected in study area. These were Laldhang & Chila in Southwest; Kotdwara, Gauzotta, Ramnipulinda and Duggadda in Northeast and Baknala, Pakhro and Koluchaur towards east. These areas are predominated by Gujjar, Buxa and local farmers. Broadly the whole area lies in between

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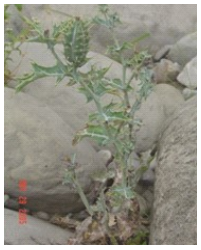
river Yamuna in west, Ramganga in east, temperate Himalayan Forest in the north and sub-tropical Bhabar -tarai belt in the south

Plate-1 **(1-9)**

Abrus precatorius seeds

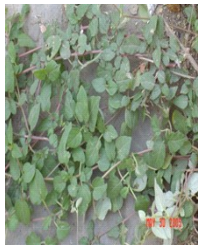
Adhatoda vasica

Aloe barbadensis

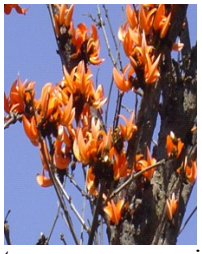


Argemone mexicana

Bauhinia variegata



Boerhavia diffusa



Butea monospermic

Cassia tora

Cassia fistula

A field survey was conducted in the interior villages areas of Kotadwar and adjacent areas to collect information about ethno-medicinal plants to heal skin diseases. Simultaneously, actual applications of plant parts to treat skin diseases were also observed during the field work. The plant species are enumerated alphabetically by family followed by their tribal name, plant part used and mode of administration.

Results and Discussion

The study that a total of 21 species were identified. For each species the botanical name, family name, plant part used, and usage treatment of skin diseases. were recorded. The results of the present study provide evidence that medicinal plants continue to play an

important role in the healthcare system of this tribal community. In the present study some (21) of medicinal plants used by the local inhabitants to cure skin diseases were identified. Following is the description including the uses (in skin disorders) of some plants in alphabetical order.

1. **Name**: *Abrus precatorius*; **Family**: Fabaceae; **Eng**.: Wild liquorice; **Hindi**: Rati

   Parts used: Roots, seeds and leaves.

   Dermatological uses: The alcoholic extracts of its seeds inhibit the growth of pyogenic organisms including *Staphylococcus aureus*. In leucoderma, the leaf juice is rubbed daily with *Plumbago* roots for repigmentation. It is also applied to the bare skin of alopecia for re-growth of hair.

2. **Name**: *Adhatoda vesica*; **Family**: Acanthaceae; **Hindi**: Vasaka

   Parts used: Leaves, roots, flowers, and bark.

   Dermatological uses: The leaves are applied locally in the form of the poultice in several skin affections including scabies.

3. **Name**: *Aloe barbadensis*; **Family**:Liliaceae; **Hindi**: Ghikanwar

   Parts used: Expressed and dried juice of leaves and pulp.

   Dermatological uses: Ghikanwar is effective as antiseptic, germicidal and blood purifier. Gel of this plant can be used in several dermatological conditions, radiations, ulcers and thermal burns. It acts as soothing agents in skin irritation and contact dermatitis. Beauticians use it in skin herbal preparations.

   Other skin diseases. The use of its flowers with sugar acts as a gentle laxative. A preparation known as “kachanaar guggula” is very effective in scrofulous tumors and ulcers, some skin diseases.

4. **Name**: *Argemone mexicana*; **Family**:Papavaraceae; **Hindi**: Pila dhatura

   Parts used: Milky juice of the fresh plant, oil of fresh seeds and fresh roots.

   Dermatological uses: Whole plant contains yellow gelatinous milky juice which is used to cure blister, excoriations and indolent ulcers. Juice is usually used in syphilis, gonorrhoea, leprosy and other cutaneous infections

5. **Name***: Bauhinia variegata*; **Family**: Fabaceae; **Hindi**: Kachnar

   Parts used: Bark, flowers, root, gum, leaves and seeds.

   Dermatological uses: the bark is very useful in the scrofulous enlargement of the glands of neck. It is rubbed into an emulsion in rice water and administered with ginger. The decoction of the bark is useful as a wash in ulcer and other skin diseases. The use of its flowers with sugar acts as a gentle laxative. A preparation known as “kachanaar guggula” is very effective in scrofulous tumors and ulcers, some skin diseases.

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6. **Name**: *Boerhavia diffusa*; **Family**: Nyctaginaceae; **Eng**.: Spreading hog-weed; **Hindi**: Sant, Purnava

Plate-2 **(10-18)**

Centella asiatica

Dioscorea bulbifera

Euphorbia hirta

Jatropha curcas

Mallotus philippensis

Melia azedarach

Moringa oleifera

Mucuna pruriens seeds

Phyllanthus amarus

Parts used: Root, herb and seeds.

Dermatological uses: Powdered of red variety plants with ginger are taken in Oedema, haemorrhage and biliousness. The white variety is useful in heart diseases, anemia, and intestinal ailments. Charaka used it in the form of ointment in leprosy and skin diseases. The local application of the paste is useful in oedematous lesions. Root powder mixed with honey is used in eye complaints.

7. **Name**: *Butea monosperma*; **Family**: Fabaceae; **Eng**.: Bastard teak; **Hindi**: Dhak

Parts used: Gums, seeds, flowers, bark, and leaves.

Dermatological uses: When seeds are pounded with lemon juice, they act as powerful rubifacient and can cure erysipelatous inflammation, bruises and fungal infections including *Dhobi's itch*. The leaves are used to treat boils, pimples, and buboes. Flowers are boiled in water and applied as poultice in orchitis.

8. **Name**: Cassia tora; **Family**: Fabaceae; **Hindi**: Chakunda

Parts used: Leaves, seeds and roots.

Dermatological uses: Seeds steeped in the juice of *Euphorbia nerifolia* and made into a paste with cow's urine are used as an application to *cheloid tumor*. They are also useful in leprosy, psoriasis, etc. when ground with sour butter milk or lime juice and applied to ease the irritation of itch or skin eruptions. Root rubbed into paste with lime juice is a specific for ringworm. Leaves are prescribed in decoction (1 in 10) in 2-ounce does for childresuffering from feverish attacks while teething; boiled in castor oil, they are applied to foul ulcers.

9. **Name***: Cassia fistula*; **Family**: Fabaceae; **Eng**.: Purging cassia; **Hindi**: Amaltas

Parts used: Pulp, root bark, flowers, pods, leaves and roots.

Dermatological uses: It is used as a counter irritant. Externally, the leaves, ground into a paste, are applied to the ringworm lesions; the bark and leaves mixed and rubbed with oil are efficacious in chilblains, ringworm, insect bites, eczema, scabies and psoriasis

10. **Name**: *Centella asiatic*a; **Family**: Apiaceae; **Hindi**: Manduk-parni.

Parts used: Whole plants.

Dermatological uses: the leaves are useful in syphilitic skin diseases.

Lemon oil mixed with glycerin is applied to the eruption of acne, to the pertusis of the vulva and scrotum, to sun burns etc. Lemon juice: the expressed juice of the ripe fruit is anti-scorbutic, and refrigerant.

11. **Name**: *Dioscorea bulbifera*; **Family**: Dioscoreaceae; **Hindi**: Genthi, Ratalu.

Parts used: Tubers.

Dermatological uses: Tubers are useful in gonorrhoea and leprosy.

12. **Name**: Euphorbia hirta; **Family**: Euphorbiaceae; **Hindi**: Dudhi

Parts used: Juice of plants, decoction, milk, root and leaves.

Dermatological uses: The latex of the plant is used as an application to the warts.

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Plate-3 **(19-21)**



Terminalia chebula *Tinospora cordifolia* *Withania somnifera*

13. Name: *Jatropha curcas* ; **Family**: Euphorbiaceae; **Hindi**:, pahari arand

Parts used: Seeds, juice, leaves and oil.

Dermatological uses: The plant is useful in scabies, and ringworm. The fresh viscid juice flowing from the stem is used to arrest bleeding from wounds and ulcers. The oil of the seeds is useful in eczema, and herpes. It is also useful as a cleaning agent in wounds and ulcers. The leaves warmed and rubbed with castor oil are applied to boils and abscesses. Juice of twigs is applied on sores. Twig paste is rubbed over swollen gums.

14. Name: *Mallotus philippensis*; **Family**: Euphorbiaceae; **Hindi**: Rohini

Parts used: Glands and hairs from the capsules or fruits.

Dermatological uses: As an external remedy, rohini is used in parasitic affections of the skin, particularly scabies and ringworm. The root of the tree is used for cutaneous eruptions. Rohini is taken internally to relieve leprous eruptions. Mixed with sweet oil, it forms a useful ointment for ringworm, and freckles.

15. Name: *Melia azedarach*; **Family**: Meliaceae; **Eng**.: Neem, **Hindi**: Neem

Parts used: Root-bark, fruit or berry, seeds, flowers, leaves, oil and gum

Dermatological uses: The oil known as "Margosa oil" given in 10 drops doses with fresh milk once in a day has been effective in early stages of leprosy. It may be used as a dressing for foul ulcers. It is favourite application in leprosy, urticaria, eczema, erysipelas, scrofula and other skin disease, like ringworm, scabies, pemphigus etc. For leprosy, it may either be used alone or combined with chaulmoogra oil or gurjun balsam. Leaves heated over boiling water or in the form of pulp or paste or poultice or ground with honey have antiseptic application to unhealthy pustules, indolent glandular swellings, boils, ulcers and skin diseases.

16. Name*: Moringa oleifera* ; **Family**: Moringaceae; **Hindi**: Sahnjan

Parts used: Root and its bark, bark, fruit, flowers, gum, oil from seeds.

Dermatological uses: Seeds are useful in several venereal diseases.

17. Name*: Mucuna prurians* var. utilis ; **Family**: Fabaceae; **Hindi**: Kaunch

Parts used: Seeds and roots.

Dermatological uses: Root paste is applied on ulcer and other skin diseases.

18. Name: *Phyllanthus emblica*; **Family**: Euphorbiaceae; **Hindi**: amla

Parts used: Dried fruits, the nut or seeds, leave roots, bark and flowers. .

Dermatological uses: It is used as antiseptic germicidal and fungicide. In falling hair and premature graying of hair, it can be used as an external application.

19. Name: *Terminalia chebula* ; **Family**: Combretaceae; **Hindi**: Harar

Parts used: Fruit, bark and galls.

Dermatological uses: Paste of seeds with ghee makes an excellent ointment for chronic ulceration and many skin diseases.

20. Name*: Tinospora cordifolia* ; **Family**: Menispermaceae; **Hindi**: Amrita

Parts used: Whole plant.

Dermatological uses: The watery extract of the root is used in the treatment of leprosy. It has also been used in syphilis.

21. Name: *Withania somnifera* ; **Family**: Solanaceae; **Hindi**: Ashgand

Parts used: Roots, leaves, fruits, seeds and tuber.

Dermatological uses: It is used as an external application in scabies and ulcers. Internally the powder of the dried root is used in the treatment of various cutaneous disorders such as vitiligo, alopecia and other chronic cutaneous diseases, which are associated with psychosomatic factors and stress.

Conclusion

Skin disease affects the person mentally and physically. Moreover, its treatment is quite time and money consuming. Using these easily available herbal drugs, which are cheap with less side effects, will be helpful to cure diseases cured at initial stage can save lot of money. It will be helpful for curing the economically weaker section of the developing country.. It will also help in the conservation and propagation of these medicinal

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