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Ethnomedicinal plants used to cure skin diseases by the Nepali community of Nagaon and Sonitpur Districts of Assam, India

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ABSTRACT

The Present Study Was Conducted In Nagaon And Sonitpur Districts Of Assam, India To Document The Medicinal Plants Which Are Being Used By The Nepali Community To Cure Various Skin Diseases. Study Documented 25 Plant Species Belonging To 21 Families Of Which Are 7 Trees, 8 Shrubs, 7 Herbs And 3 Climbers. The Various Skin Diseases Treated By Them Include Boils, Scabies, Ringworm, Pimples, Burns, Itches And Dandruff.

Keywords : Medicinal Plants, Skin Diseases, Nepali community, Nagaon and Sonitpur districts, Assam.

I. INTRODUCTION

Indian traditional medicine is based on the different systems such as Ayurveda, Siddha and Unani used by the various communities (Gadgil 1996). World Health Organization estimated that over 80% of the people in developing countries depend on the traditional medicines for their primary health needs (Shankar *et al.* 1993). There are estimated to be around 25,000 effective plant-based formulations, used in folk medicine and known to the rural communities in India (Ramakrishnappa **2000).** Village communities from various ecosystems used largest proportion of biodiversity for human and veterinary healthcare. Of all the organisms, medicinal plants have been greatly considered by the rural communities as they improve the economy of the rural people. Thus there is now urgency for ethnobotanical research amongst the aboriginal people (Ojha 2000; Maheswari 1983). Today there is an increasing desire to document the role of ethno-botanical studies in trapping the centuries old traditional folk knowledge as well as searching for new plant resources for food, drugs, etc. People living in the developing countries rely quite effectively on the traditional medicine for primary health care (Jain1987; Sullivan *et al.*1997; Singh 2002).

Since medicinal plants are nontoxic and easily affordable they play a vital role not only for pharmacological research and drug development, but also when plant constituents are used directly as therapeutic agents and as starting materials for the synthesis of drugs (Verma 2016).

The knowledge of medicinal plants has been accumulated in the course of many centuries based on the different Indian systems of medicines such as Ayurveda, Unani and Siddha. Medicinal plants play a major role in the rural areas of the third world countries. The role of medicinal plants in resolving health problem is invaluable on a global scale. In India, it is reported that traditional users use 2500 species of plants and 100 species of plants serve as regular source of medicine (Lev 2006). During the last few decades there has been increased interest in the study of medicinal plants and their traditional use in

different parts of the world (Rossato 1999). Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. In recent years, there has been a tremendous range of interest in the medicinal plants especially those used in Ayurvedas and other traditional systems of medicines. Allopathic drugs have brought a revolution throughout the world but the plant based medicines have its own unique status. There is an urgent need to document the ethno-biological information presently existing among the diverse communities before the traditional knowledge is completely lost (Rao, 1996).

Skin disease is a common ailment. Skin complaints affects all ages of people from the neonate to the elderly and cause harm in number of ways. The physical inspection of the skin and the mucous membranes makes foundation of an exact analysis of the skin membrane conditions (Korpenwar 2012).These conditions are mostly present with skin exterior changes (wound) which have additional or fewer discrete features (Madhu *et al.* 2011). Due to change in livelihood and environmental degradation, the traditional knowledge faces the risk of disappearing before documentation. Therefore, in the present paper, an attempt has been made to document the list of ethno-medicinal plants used to cure skin diseases by the Nepali community of Nagaon and Sonitpur District, Assam.

Nepali community, amongst different communities existing in Assam, is one such community which has rich cultural heritage. Nepalis are scattered all over Assam and other North Eastern states as well. However, in Assam Nepalis are mostly concentrated in the district of Sonitpur.

II. METHODS AND MATERIALS

2.1 ***Study area:*** The study has been conducted among the Nepali community during March 2011-October 2014 in Missa, Jakhalabandha and Sulung villages of Nagaon district and Tezpur, Biswanath Chariali, Gohpur and Dhekiajuli villages of Sonitpur district of Assam.

The primary information regarding the use and values of plants were collected during the field work using standard survey techniques (Deshmukh *et al.* 2011) that includes individual and in-depth interviews, and group discussion among the local plant users, community members and healers (*ojah/dhami*) , persons having indigenous knowledge etc. Ethno-medicinal information was collected through questionnaire. The set questions contained the local name of the plants used to cure skin diseases; the plant part used for this purpose and the mode of administration of the plant materials. The interviews were performed in Nepali language for which interpreters were used. Some of them were well versed with Assamese language. After the interview, the informants were asked to supply the plant specimens and often they accompanied to the field to collect plant materials. Particularly visits to Bura Chapori Wildlife Sanctuary and Dhekiajuli in Sonitpur district Assam were fruitful. A few elderly ladies were particularly helpful in some cases. Details of use including the approximate amounts and number of doses were recorded for specific diseases for authentication and validation of method (Jain S.K, 1987).

The collected plant specimens were processed into mounted herbarium sheets (Jain and Rao, 1977) and were identified with the help of various literature including Hooker (1872- 1897), Kanjilal *et.al.* (1934-1940), Bor (1940); Deb (1961 a,b) and Sinha (1987), Kritikar and Basu , (1993) and by consulting experts. Identification of specimens was confirmed by matching at the herbarium of Assam University, Silchar and at the Botanical Survey of India (Eastern Circle), Shillong. Secondary informations were collected by

reviewing numerous published works related to the present study and are referred appropriately.

For this work necessary permission was taken from the Community leaders for publishing the knowledge imparted by them.

Almost all the possible information regarding the medicinal uses of the collected plants by the Nepali community have been included in the text/result.

III. RESULTS AND DISCUSSION

Data collected through the survey in Sonitpur and Nagaon districts Assam led to the record of 25 species of plants representing 22 genera from 21 families which are used to treat the different types of skin diseases.. These include plants of different habit groups including herbs (7 spp. or 28%), shrubs (8 spp. or 32%), trees (7 spp. or 28%) and climbers (3 spp. or 12%). For each species, scientific and local names, family, parts used and uses are presented in Table 1 and Figure 1. The most commonly represented families were Amaranthaceae (3 spp.), Solanaceae and Cucurbitaceae (2 spp.) each. Different plant parts were used for the treatment of various skin diseases. In general, leaf (10 spp.) was highly used followed by fruit (5 spp.), bark (4 spp.), root (4 spp.), rhizome, seed and latex (2 spp. each), whole plant and bulb (1 spp. each) (Figure 2). These plants were used for the treatment of various skin diseases such as boils, scabies, ringworms, allergy, pimples and acnes, burns, itches and dandruff. In majority of cases, the herbal medicines were prepared in the form of juice and paste. Maximum numbers of plants were used for boils (8 spp.) followed by scabies and ringworms (4 spp.), allergy and pimples (3spp.), burns, itches and dandruff (1 spp.) each (Figure 3).

The present investigation revealed that out of the total of 25 species, 8 species (*Achyranthes aspera, Alstonia scholaris*, *Amaranthus gangeticus*, *Bombax cieba*, *Ficus racemosus*, *Melia azedarach*, *Trichosanthes anguina* and *Trichosanthes dioica*) have found new uses as ethnomedicine used for curing skin diseases by the Nepali community of Nagaon and Sonitpur districts of Assam. (Table 1)

The rural people preferred preparing medicines by combining several plants since the combination rapidly cures the disease and also enhance the immunity power of the patients. This is constant with the other general observation which has been reported earlier in relation to medicinal plant studied by Indian traditional system (Balaraju *et al.* 2015).

Global trend of interest in the conventional system of medication can be noticed in recent previous years. In the development of health care ethno-botanical studies have develop into increasingly helpful. Medicinal plants are rich sources of antimicrobial agents. Majority of the people of the world presently depends on conventional traditional medicinal plants which were used as remedies to cure various skin infectious diseases (Sheher Bano *et al.* 2013).

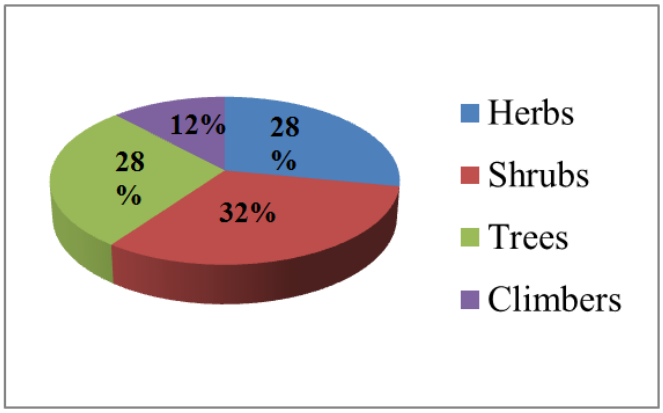

Fig.1. Different habit –group of plants used by the Nepali community of Nagaon and Sonitpur Districts of Assam to cure skin diseases.

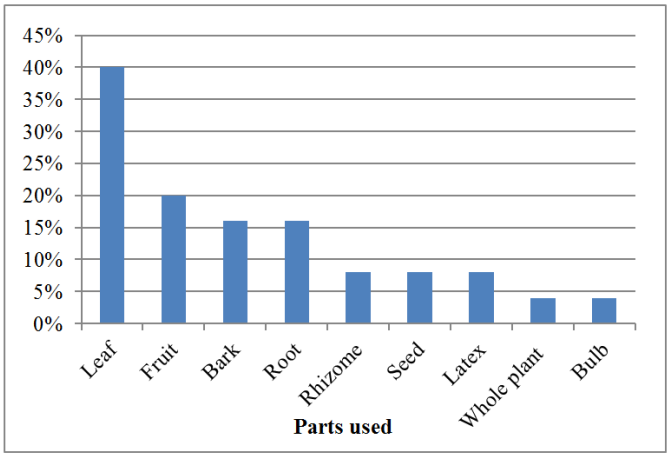

Fig. 2. Percentage of plant parts used as Ethno-medicine by the Nepali community of Nagaon and Sonitpur Districts of Assam to cure skin diseases

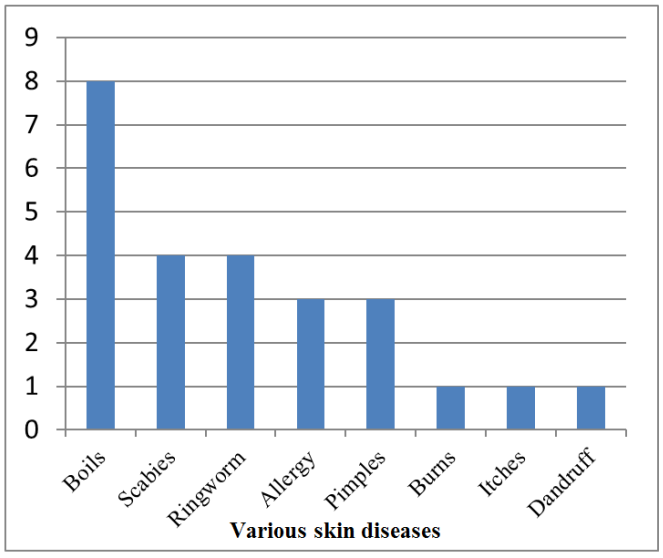

Fig.3. Number of plant species used for curing various skin diseases by the Nepali community of Nagaon and Sonitpur Districts of Assam

IV. CONCLUSION

The Nepali community is heavily dependent on the plant products and believes in their various remedial properties since long. The traditional healers of this area grow many of their required plants in their home gardens and the remaining plants are collected from the nearby wild vegetation. All their knowledge on ethno-medicine has been transmitted orally through the generations and most of these are closely guarded treasures. Therefore, there is no written document.

It has also been noticed that the younger generation have least interest to learn the uses of these plants. Therefore, it is important to survey and document their indigenous knowledge at the earliest. At the same time the wisdom of the community on the process of preparation by the medicine-men and their utilization should be given due importance.

These ethno-medicinal plants are also a source of income for the local Nepali community. In these regions, the traditional communities collect medicinal plants from the wild and sell those in the local market. Over – exploitation and unscientific tapping by the ignorant local people have resulted in the loss of many important plants. Many of these plants are on the brink of extinction at least in local vegetation and there is an urgent need to conserve such plants with high medicinal value to ensure their existence and sustainable utilization. These plants must be protected from the massive, indiscriminate deforestation and uncontrolled exploitation.

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Table 1 : Medicinal plants used for curing different types of skin diseases

Sl. No.	Plant species	Local name	Parts used	Uses
1	*Achyranthes aspera* L. Amaranthaceae	Apamarga	Root	Root pieces are soaked in the water for overnight and given next morning in empty stomach for 7 days to cure allergy.
2	*Allium sativum* L. Amaryllidaceae	Lasun	Bulb	Bulb paste mixed with leaf paste of *Ocimum canum* and coconut oil applied on face as face pack for pimples and acne.
3	*Alstonia scholaris* (L.) R.Br. Apocynaceae	Chatyan	Bark	Bark paste is applied in skin diseases.
4	*Amaranthus gangeticus* L. Amaranthaceae	Morisa	Leaf	Leaf paste is applied on the boils.
5	*Amaranthus spinosus* L. Amaranthaceae	Khutura	Root	Root poultice is applied on boils to hasten suppuration.
6	*Basella alba* L. Basellaceae	Puii saak	Leaf	Leaf paste is applied as lotion in burns.
7	*Bombax cieba* L. Bombacaceae	Simal	Bark	Paste of bark is applied to cure scabies.
8	*Chromolaena odorata* (L.) R.M. King & H.E.Robinson Asteraceae	Jarmoni bon	Leaf	Leaf paste with the leaf paste of *Achyranthus aspera* and *Scarpia dalcio* is applied externally on the boils.
9	*Cissampelos pareira* L. Menispermaceae	Tikunthyak	Rhizome	Juice of rhizome is given to cure any kind of skin diseases.
10	*Citrus limon* (L) Osbeck Rutaceae	Thulla nimbu	Fruit, seed	Paste is good for any kind of skin disease and pimples.
11	*Clematis gouriana* Roxb. Ranunculaceae	Baghjunge	Leaf	Leaf juice is applied externally to cure skin diseases.
12	*Curcuma longa* L. Zingiberaceae	Holdi	Rhizome	Paste is applied on pimples, ringworm and other skin diseases.
13	*Dandrocnide sinuate* (BL.) Urticaceae	Suraat gacha	Leaf	Juice of leaves are used for curing various skin diseases such as ringworm, scabies, itches etc.
14	*Dioscorea pentaphylla* L. Dioscoreaceae	Jagatebhyakur	Leaf	Juice of leaf is applied to treat boils.
15	*Ficus racemosus* L. Moraceae	Dumri	Latex	Latex is applied over the boils.
16	*Jasminum gracile* Andrews Oleaceae	Chameliphool	Root	Juice of root is used for the treatment of ringworm.
17	*Leucas plukenetii* (Roxb.) Spreng. Lamiaceae	Drunapuspa	Leaf	Leaf juice is mixed with leaf juice of *Ageratum conyzoids* given for allergies.
18	*Madhuca indica* Koeing. Sapotaceae	Mahua	Latex, seed	Latex from tree trunk is used to cure boils and seed paste is used to cure other skin diseases.

19	*Mallotus philippensis* Lam. Euphorbiaceae	Rohini	Fruit	Fruit juice is used to cure scabies, ringworm and dandruff.
20	*Melia azedarach* L. Meliaceae	Bakaino	Bark	Bark juice is used to cure various kinds of skin diseases.
21	*Moringa oleifera* Lam. Moringaceae	Sajina	Leaf	Leaf juice is applied on allergies.
22	*Solanum indicum* L. Solanaceae	Bhekuri	Fruit	Fruits are considered as medicinal for various skin diseases.
23	*Solanum torvum* Sw. Solanaceae	Thulla bhekuri	Leaf	Leaf paste is applied for various skin diseases.
24	*Trichosanthes anguina* L. Cucurbitaceae	Dhundali	Fruit	Paste is applied on boils.
25	*Trichosanthes dioica* (L.) Roxb. Cucurbitaceae	Potol	Fruit	Paste is applied on boils.