

ISSN 2320-3862
JMPS 2016; 4(4): 06-10
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Received: 05-04-2016
Accepted: 03-05-2016

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Ethnobotanical study of some climbers of Parsa district forest of Nepal

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Abstract

In the traditional health care practices medicinal plants play great role. Impotence of medicinal plants provides clues to new areas of research and biodiversity conservation. However, information on the uses of plants for medicines and other purposes by the tribal' s of the parsa district is lacking among the people of the district and other areas. Keeping this view in mind present study was carried out. The information presented in this paper was gathered by field visit, participatory observation, group discussion and interviews with questionnaires in the year 2013 from March ton November after frequent field visit in the forest and adjoining villages.

A total of 18 ethno-medicinal climber species belonging to 12 families and 17 genera are documented in this study. The plants used for different purpose are listed with scientific name, common name, family; ethno-botanical importance and parts used. Mode of use of plant parts has been also mentioned. Out of the total studied plants 50% plants are used only for medicinal purpose, 40% are used for both medicine and other purpose and rest 10% are used for making soap and detergent.

Keywords: Ethnobotany, Tribals, Medicinal plants, Tharu.

Introduction

Ethnobotany (Ethnology- study of culture; and Botany (study of plants) is the study of scientific relationships that exist between people and plants.

It includes use of plants for food, clothing, medicines, rituals, dye, decoration and many more purposes. Utilization of plants for medicinal purposes in India and Nepal has been documented long –back in ancient literatures. Right from its beginning, the documentation of traditional knowledge especially on medicinal use of plants, has provided many important drugs of modern times.

Some knowledge about wonderful and effective medicines by the tribes acquired through experience is usually passed from generation to generation in the verbal form by the traditional medicinal man. Large number of population of the country and also in many developing countries lives in rural areas and their economic level is also very low. If they have knowledge about ethnobotanical use of medicinal plants, cost effective treatment can be provided to many people without any side effect.

The objective of this study was to assess ethnobotanical information of some climber species used in the parsa district forest area of Nepal including four adjacent villages and traditional medicinal practices.

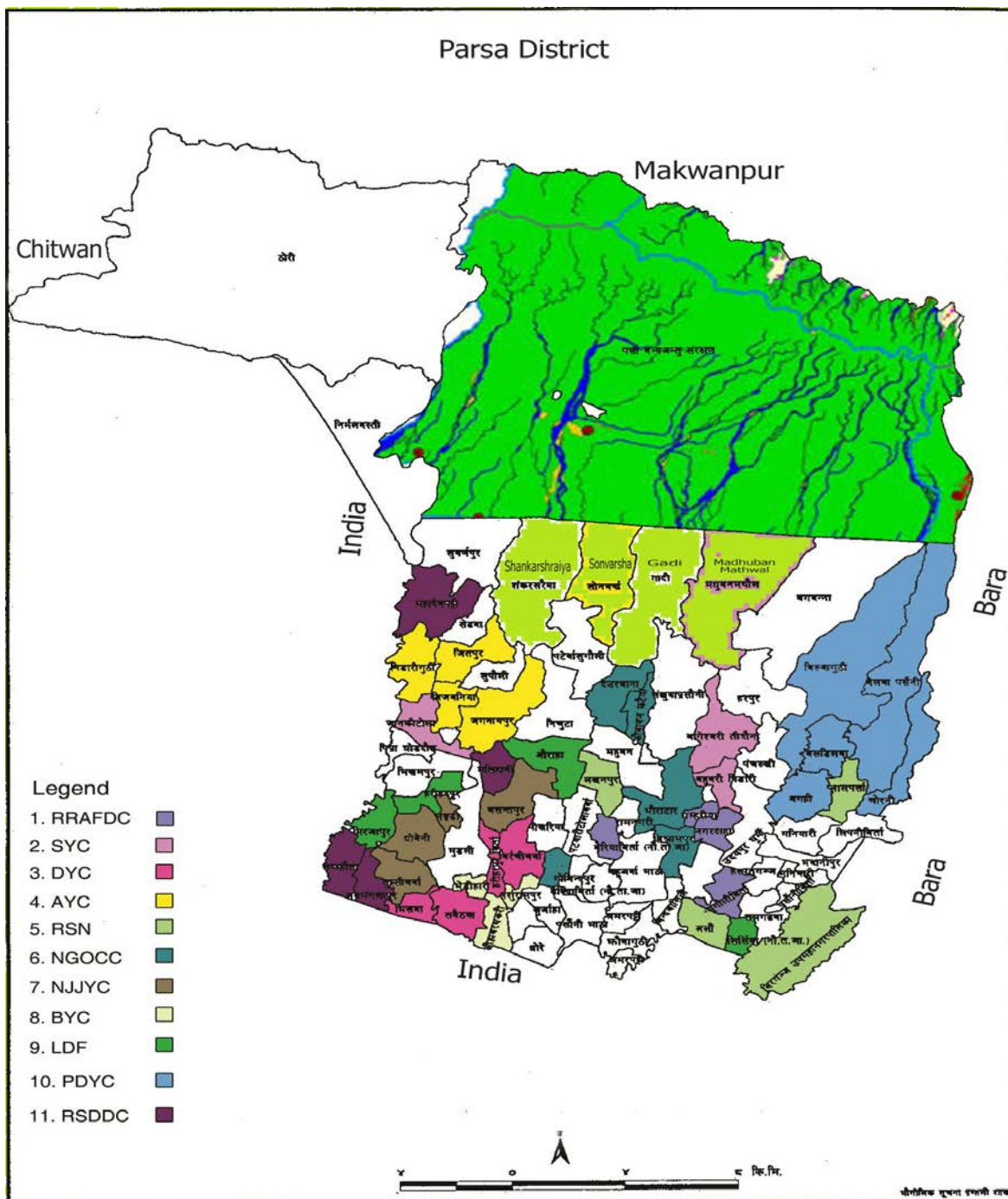
Description of the Study Area

In the map of Nepal Parsa District lies 84^o 8' to 85^o 27' in the eastern longitude and 27^o to 27^o 26' in the northern latitude. This district lies in Narayani zone and is surrounded in the east by Bara district, west by Chitwan district and Bihar state of India, north by Makawanpur and Chitawan districts and south by border area Bihar state of India. This district lies at an altitude of 122 to 925 meters from the sea level

Geographically, Parsa District is divided into three regions Shiwalik, Bhavar and Terai. Most of the forests of this district lies in Bhavar region and this region is also known as “Chaar Kose Jhari “.

The climate of the district is tropical and sub-tropical. Annual average maximum temperature of this region is 40 ^oC and minimum is 7 ^oC.

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Methodology

In order to document the utilization of the plants a total of four field surveys were carried out from march 2013 to November 2013 in the forest and adjoining four villages, Madhuwan mathwal, Gadi, Shankar sharaiya and Sonbarsa. During field stay, plants were enumerated and several times interactions were done with the traditional healers, local knowledgeable old person and other informants like forest officers and few local people. The plants were collected for identification. Structured questionnaires, interviews and participatory observations were used to organize the information’s of the resource persons. Questionnaires include use of the plants for different purposes including medicinal use, parts of the plants used and detailed information about mode of preparation of medicines such as, decoction, powder, paste, juice and mixture of other plants used as ingredients.

Enumeration

The botanical names are arranged alphabetically followed by family along with common name and local name. The uses of

the plants given are based on information collected from the study area, literature study and personal experience.

Abrus precatorius (Fabaceae)

Common name: Carb’s- eye **Local name:** Rati gedi

Medicinal Value:

Seed paste is applied locally in stiffness of shoulder joint and paralysis. It is also used in dysentery and skin diseases. The roots are used for treating gonorrhoea, jaundice, hemoglobinuric. Oil from seeds promotes the growth of hair, seeds are highly known for their abortifacient. The leaf infusion is useful in treating fever, cough and cold. It is used in leucoderma, itching and other skin diseases. The white part of the seeds is also used to make the oil which is the substitute to Viagra. Seed paste or oil is applied for healing scratches, sores & wounds caused by dog, cat and mice biting. The paste of the roots is used in the treatment of abdominal pains & tumors. Leaf juice & seeds are used for the treatment of grey hairs. Oil is used to promote hair growth.

Other uses

The young and green branches are fed to the cattle, goat etc. Mature plants are cut and dried for the fuel. It is also used for fencing the garden.

Acacia rugata (Mimosaceae)

Common name: Soap pod tree **local name:** Sikakai

Uses:

Fruit is used as a traditional shampoo. Tribals use mixture of bark leaves and pod for cleaning hairs. It promotes hair growth, prevents dandruff and strengthens hairs. Leaves having acidic taste are used in making pickle.

Aristolochia indica Linn. (Aristolochiaceae)

Common name: Indian birthwort **Local name:** Isharmule

Medicinal value:

Roots are given to cure arthritis. It is also used as an antidote in case of snake bite. Local people utilize it for abortion of unwanted pregnancy. Local people use it to cure intermittent fevers and other infection, as a tonic and stimulant. During a bite of cobra it is taken internally as well as the powdered root is applied externally at the site of snake bite. The decoction of the bark is given to the children in intermittent fevers. The juice of the leaf is efficacious in snake bite. It is also used as an antidote in scorpion bite.

Bauhinia Vahlii (Caesalpiniaceae)

Common name: Maloo creeper **Local name:** Sungun/Bhorla

Medicinal value: Decoction of leaves is used to relieve headache in malarial fever. Old bark decoction is used in diarrhea.

Other uses

Gum is obtained from it. The local people prepare strong rope from its bark. The rope is red so it is attractive. The local people use this rope for tying up their cattle. It is also used to prepare the "Charpai". However, the rope is not durable. The seeds are eaten raw. Young pods are cooked and eaten as vegetable. Leaves are sewed together and prepared hat from it. Basket is also prepared from it for holding different domestic articles.

Cissampelos Pareira (Menispermaceae)

Common name: Abuta **Local name:** Batul patte

Medicinal Value:

An extract and decoction made from leaves are used to treat problems related to female reproductive system. It maintains hormonal balance, prevents miscarriage, eases child birth and reduces problems of menstruation excessive bleeding and uterine hemorrhage in females.

Root is used in diarrhea, dysentery, indigestion, malaria, lung disease, piles, ulcers and skin infection. Decoction used in cough, kidney stones, muscle cramp and arthritis. It is used externally to treat cuts, wound, ulcers and other skin infections.

Cuscuta reflexa (Convolvulaceae)

Common name: Dodder **Local name:** Aakash beli

Medicinal Value:

Stem is used as antispasmodic, hemodynamic, anticonvulsant, antisteroidogenic, antihypertensive, muscle relaxant, cardiotoxic, antiviral & antibacterial.

The rural people use the juice of this plant as inhalant for treating jaundice and its warm paste is applied in rheumatism, gout and other affected parts of the body. The paste of whole plant is applied for relieving headache.

The juice of the plant mixed with the juice of saccharum officinarum is used in the treatment of jaundice. It also used for treatment of Liver & Kidney, the range of impotence, premature ejaculation, frequent urination, ringing in the ears, lower back pain, white discharge from the vagina, dry eyes, blurred vision and tired eyes.

It also reduces blood pressure. Stem decoction given to pregnant lady causes abortion.

Dioscorea bulbifera (Dioscoreaceae)

Common name: Air potato **Local name:** Kukurtarul

Medicinal Value:

Air potato or yam has been used as a folk remedy to treat diarrhea and dysentery. Jaundice, stomach pain and even to cure bone fracture. It is also used for sore throat. It lowers cholesterol level and also the blood pressure. It is also used to stop inflammation.

Other uses

Tubers are edible and are eaten by the tribals. They use it after boiling. It is used in the preparation of the vegetables also.

Dioscorea deltoidea (Dioscoreaceae)

Common name: Nepali yam **Local name:** Bhyakur

Medicinal Value:

Traditionally tuber of the plant is used as anti rheumatic and to treat ophthalmic conditions. It is also the source of steroid drugs. It has been used to eliminate the body of intestinal parasites.

The juice of root tuber is taken in the evening in the treatment of round worm. It is also used to elevate constipation. These are used to prepare contraceptive medicines. Plant is also used to prevent other diseases like asthma & arthritis.

Other Uses

Tuber is eaten as vegetable, pickle after roasting or boiling. It is also used to kill lice.

Gymnema Sylveste (Asclepiadaceae)

Common name: Gymnema **Local name:** Gurmar

Medicinal Value

It is used to cure diabetes. It increases hemoglobin level. It is also used to cure cough and cold and to reduce body weight. The tribals use it to cure malaria. It is also used against snake bite and as antidote. It increases appetite. The leaves are used for constipation, water retention and liver diseases. Leaf extract is used for insulin secretion.

Hydrangea Anomala (Hydrangeaceae)

Common name: Climbing Hydrangia **Local name:** Bahuni Kath

Medicinal Value:

Decoction of various parts is used to cure kidney and bladder stone. It is also used as a diaphoretic as well as in prevention of kidney stone. Bark is made into a paste and used externally to cure wounds burns. Roots are used in the treatment of malaria.

Other Uses

It is also cultivated as ornamental plant. Dried stem is used as fire wood. It is generally found to cling on the wall of house. It also grows on trunks of large tree.

Ipomea Muricata (Convolvulaceae)

Common name: Clove bean **Local name:** Lahare sag

Medicinal Value

The medicinal use of this plant is enormous. Seeds are used for the treatment of diabetic, dysentery, constipation, arthritis, rheumatism, meningitis, Kidney ailments. They are also used in hydrocephaly. Plant part is used for the preparation of ointment for the treatment of skin, infections. Plant is also used in the treatment of pharyngitis. Leaves contain many properties as antimicrobial, and antifungal. Plant is used for wound healing. Rural people used as insecticidal and for destroying bed bugs. It increases digestive capacity.

Other Uses

Green pod is used as vegetable. Plant is used as ornamental species. They are also used in religious ritual.

Lygodium Japonicum (Schizaeaceae)

Common name: Climbing fern **Local name:** Janailahara

Medicinal Value

The plant is used as an expectorant. A decoction of the vegetative parts is used as a diuretic. The spores are also used for decoction and they are used to cure the kidney and urinary problems. It reduces swelling and cough, fever and cold. It is also used to cure gonorrhea. The fibrous roots are used by the horticulturist. It is also used for the manufacture of basket, hat and boxes. The plant is used as blood tonic and for cold symptom and urinary and kidney problems. Tribal's use the paste of the plant leaf in ringworm, eczema and wounds. The chemicals present in plants promote hair growth.

Mucuna pruriens (Fabaceae)

Common name: Cowhedge **Local name:** Kauso

Medicinal Value

The plant and its extract are used in snake bite. It improves immunity and nervous system and used as the medicines for Parkinson's disease. It is also used to reduce itching. It helps in body building supplements. It reduces body fat.

Other Uses

It is a fodder plant. The whole plant is feed to animals. It is used as an important forage and green manure crop. Cooked fresh shoot or beans can also be eaten. Dried leaves are sometime smoked. This plant biologically controls the growth of *Imperata cylindrica*.

Passiflora edulis (Passifloraceae)

Common name: Passion flower **Local name:** LahareAamp

Medicinal Value

The leaves flower and stems are used as medicine in different ways. Flower is used to treat, nervous disorder, arthritis, asthma, insomnia, gastro intestinal disorders and menopause symptoms. This plant is also useful in the treatment of cancer. Leaves are used to lower blood pressure. The fruit relaxes the cough and heart pain. Leaves are also employed in eye disorder, epilepsy, diarrhea, dysentery, insomnia, neuralgia and muscle sprains and pain.

Other Uses

Yellow pulp is used to prepare jam, jelly, sherbet, drinks.

Piper betel (Piperaceae)

Common name: Betel **Local name:** Pan

Medicinal Value

It is valued both as a mild stimulant and for its medicinal properties. The betel leaf is predominantly consumed as betel or pan, which is a mixture of many substances. Betel is used to cure worm. Chewing betel leaf is a remedy for bad breath and provides mouth refreshment. Betel leaf juice is mixed with warm water and given to small children to improve digestion as well as those suffering from indigestion. It is natural palate cleaner. It is also used to strengthen teeth and gums. Betel is beneficial for the treatment of nervous pains and nervous exhaustion. Betel leaf with honey used as tonic Leaf juice mixed with milk and sugar is used for easing urination. Leaf juice is analgesic. The leaves are used to reduce cough and cold when they are soaked in mustard oil and warm and placed on the chest.

Quisqualis Indica (Combretaceae)

Common name: Jasmine Holland/Rongoon creeper **Local name:** Baja Phool

Medicinal Value

The taste of seed resembles coconut oil which is purgative. Dried seeds are used for deworming. 8-10 nuts are chewed by adults after a meal followed by half glass of water. Roasted nuts are used in the treatment of diarrhea & fever. Leaves applied to the head to relieve headache. Powdered leaves are used externally for skin diseases. Decoction of boiled leaves is used in diarrhea. Ripend seed is roasted and used in fever. Roots are used to treat rheumatism. Decoction of root, seed or fruit is used as anthelmintic to expel parasitic worms.

Other use

Flowers are edible.

Smilax aspera (Smilacaceae)

Common name: Rough bind weed **Local name:** Kukurdaino

Medicinal value

The root is alterative, demulcent, depurative, diaphoretic, diuretic, stimulant and tonic. This is one of the best depurative medicines and is used as a springtime tonic and general body cleanser, usually with woody nightshade (*Solanum dulcamara*). The ripe fruits are squeezed and applied to the skin in the treatment of scabies.

Other Uses

The roots and the leaves are edible. Young shoots are cooked and used as vegetable. They can be cooked and used as an asparagus substitute. The tendrils are also eaten. The plant is an ingredient of soft drinks.

Tinospora cordifolia (Menispermaceae)

Common name: Guduchi **Local name:** Gurju

Medicinal Uses

Stem powder is used in the treatment of jaundice, diabetes and rheumatoid arthritis. It increases immunity of the body. Squeezed stem is kept in water over night and decanted water is taken next morning to cure stomach troubles. Decoction of leaf is used to cure stomach pain. Root, stem and leaves are used for urinary problems. Root and stem powder is nutritious and also used in chronic diarrhea and dysentery. Leaves are also used to treat diabetes.

List of Name, Habit, Family, Ethnobotanical Uses of Plants

S.No.	Scientific name	Common name	Habit	Family	Ethanobotanical Importance	Parts used
1	<i>Abrus precatorius</i>	Carb's eye	Climber	Fabaceae	Med	Root, leaf seed
2	<i>Acacia rugata</i>	Soap pod tree	Climber	Fabaceae	Detergent, food	Leaf, pod, bark
3	<i>Aristolochia indica</i>	Indian birth wort	Climber	Aristolochiaceae	Med.	Leaf, root
4	<i>Bauhinia vahlii</i>	Maloo creeper	Climber	Fabaceae	Med. food	Leaf, seed
5	<i>Cissampelos pareira</i>	Abuta	Climber	Menispermaceae	Med.	Leaves
6	<i>Cuscuta reflexa</i>	Dodder	Climber	Convolvulaceae	Med.	Stem
7	<i>Dioscorea bulbifera</i>	Air potato	Climber	Dioscoreaceae	Med., food	Tuber, bulbil
8	<i>Dioscorea deltoidea</i>	Yam	Climber	Dioscoreaceae	Food	Tuber used as food and to kill lice
9	<i>Gymnema sylveste</i>	Gymnema	Climber	Asclepiadaceae	Med.	Leaf
10	<i>Hydrangea anomala</i>	Climbing hydrangia	Climber	Hydrangeaceae	Med., ornamental	Leaf, Bark, root
11	<i>Ipomea muricata</i>	Clove bean	Climber	Convolvulaceae	Med., Veg	Leaf
12	<i>Lygodium japonicum</i>	Climbing fern	Climber	Schizaeaceae	Med.	Whole plant
13	<i>Mucuna pruriens</i>	Cow hedge	Climber	Fabaceae	Med., food	Fresh shoot, bean leaf
14	<i>Passiflora edulis</i>	Passion flower	Climber	Passifloraceae	Med.	Leaf, flower stem
15	<i>Piper betel</i>	Betel	Climber	Piperaceae	Med., betel	Leaf
16	<i>Quisqualis indica</i>	Jasmine holland	Climber	Combretaceae	Med.	Leaf, seed, root
17	<i>Smilax aspera</i>	Rough bind weed	Climber	Smilacaceae	Med., food	Root, leaves, young shoot
18	<i>Tinospora cordifolia</i>	Guduchi	Climber	Menispermaceae	Med.	Stem, root, leaf flower

Results and Discussions

In table, data obtained from the field survey are presented.

In this study 18 climber species belonging to 17 genera, distributed in 12 families have been recorded.

Among 18 plants; *Abrus precatorius*, *Aristolochia indica*, *Cissampelos pareira*, *Cuscuta reflexa*, *Gymnema sylvestre*, *Lygodium japonicum*, *Passiflora edulis*, *Quisqualis indica*, *Tinospora cordifolia*, are used only for medicinal purposes; *Acacia rugata* is used for making soaps and detergents and 8 plants; *Bauhinia vahlii*, *Dioscorea bulbifera*, *Dioscorea deltoidea*, *Hydrangea anomala*, *Ipomea muricata*, *Mucuna pruriens*, *Piper betel*, *Smilax aspera* are used for medicinal as well as some other purposes. Different parts of the plants like; root, stem, leaf, seed, fruit, bark, flower, bulbil, are used to treat different diseases.

Most commonly used medicinal plants are – *Abrus precatorius*, *Cuscuta reflexa*, *Gymnema sylvestre* and *Tinospora cordifolia*. Diseases like diabetes, jaundice, dysentery, skin diseases, gonorrhoea, malaria, high blood pressure, kidney ailments, arthritis, rheumatism, meningitis, asthma, insomnia, nervous diseases, joints problems paralysis, fever, cough & cold, abdominal pain, liver problems, leukoria, sore throat, constipation, rheumatism, meningitis, pharyngitis, epilepsy, gastrointestinal disorders are treated with these plants. Extract of the leaf of *Mucuna pruriens* is used in snake bite. Juice of root tuber of *Dioscorea deltoidea* acts as contraceptive. Leaf juice of *Gymnema sylvestre* is used to increase hemoglobin level in blood. Young pod of *Bauhinia vahlii* is cooked and used as vegetable. Leaf of *Ipomea muricata* has insecticidal properties used to destroy bed bug.

So, these natural resources must be conserved properly. If people of country would be made aware about the use of these plants in different diseases then the life of many people can be saved without much expense.

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