

## RESEARCH NOTE

# ETHNOBOTANICAL CENSUS ON HERBAL MEDICINE OF BANKE DISTRICT, NEPAL

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### Introduction

The use of herbal medicine is a common practice in Nepal since long as it is easily available and affordable. Additionally, major population has traditional belief in it. One can observe the family relationship between a healer and a patient. The western medicine, though available is expensive and not easily available to all rural people who depends upon the native therapy for their primary health care. It is estimated that there is less than one hundred people per healer (Gillam, 1989) whereas one doctor for 92,000 population in the rural areas (MOH, 1991).

### Area of Study

Banke district which is located between  $81^{\circ}.29'$ - $82^{\circ}.8'E$  and  $27^{\circ}.51'$ - $28^{\circ}.20'N$  is one of the 75 districts of Nepal. The district Baharainch of Utter Pradesh, India is in its south and the Nepalese districts Surkhet, Dang-Deokhuri and Bardiya are in north, east and west respectively. The total area of the district is  $2337 \text{ km}^2$  and the population is 285,604. The ethnic groups are Muslim, Tharu, Newar, Thakali, Gurung, Tamang and Magar. They speak Abadhi, Hindi, Magar, maithili, Newari, Tharu and Urdu but most of them understand and speak Nepali, the national language.

Rapti, Man and Dundawa are some important rivers here. The climate of the district is tropical and sub tropical, and the average maximum and minimum temperature is  $30.8^{\circ} \text{ C}$  and  $16.2^{\circ} \text{ C}$  respectively (Sharma et al., 1994).

### Plant Resources

The growing population and rapid urbanization in the district have adversely affected the forest resources. Additionally, there is an open border between India and Nepal. The unchecked flow of people between these countries has important variable in the domestic population factor. Thus there is heavy constrain on plant resources, causing the depletion of forest plants. There is

1,21,957 hectare of forest area but only 108 hectare (0.09%) has forest cover.

Mainly the tropical plants such as *Aegle marmelos*, *Anogeissus latifolia*, *Carissa carandas*, *Schleichera trijuga*, *Semecarpus ancardium*, *Shorea robusta*, *Terminalia bellirica*, *T.chebula*, *Woodfordia fruticosa*, *Zizyphus mauritiana* are found in this area.

### Methodology

The data was collected during six visits in the years 1994, 1995 and 1996. It is mainly based on oral interview with the adult villagers, local healers, personal observation and discussion. Altogether 15 informants from 5 villages (Naubasta, Kohalpur, Khajura, Dhakeri and Shamsherganj) were chosen to collect the information. Five native healers from each village and 10 adults including 2 women were interviewed for this study. They were between the age of 35-70 years. The varification of data and their inclusion in present study is the same as mentioned before (Manandhar, 1991, 1993, 1995). The plants are arranged in alphabetical order of botanical name, followed by the family, Tharu name (Th.), collection number of the author, and ethnobotanical notes. These plants were collected and identified by the author. They are housed in the National Herbarium and Plant Laboratories, Godawari, Nepal.

#### *Acacia catechu* (L.f.) Wild., Fabaceae, Khair-Th., 3-95

Central wood peices are boiled in water till the amount is half, and is taken 6 teaspoons 3 times a day to relieve muscular pain and dislocated bone; it is also applied externally to affected part.

#### *Achyranthes aspera* L., Amaranthaceae, Chachyura-Th., 116-94

Root juice, 3 times a day is given to relieve swollen part of the body.

#### *Acorus calamus* L., Araceae, Bojho-Th., 11-95

Root is chewed to relieve cough and is also considered effective in case of throat and nasal congection especially during cough and cold.

#### *Aegle marmelos* L. Correa, Rutaceae, Bel-Th., 32-95

Fresh leaf is boiled with water and its vapour is inhaled to relieve cough and cold.

#### *Ageratium conyzoides* L., Asteraceae, Kukurmutta-Th., 107-94

Plant paste is applied below the navel to facilitate the urination if there is problem in urination.

*Alium sativum* L. Amaryllidaceae, Lasun-Th., 22-95

Paste of cloves is applied to treat ringworm.

*Alternanthera sessilis* L. DC., Amaranthaceae, Makar jharya-Th., 140-94.

Root juice, about 4 teaspoons 3 times a day is given to treat fever.

*Anisomeles indica* (L.) Kuntze, Lamiaceae, Udaira-Th., 184-94

Leaf juice is put in the ear to stop pus formation inside.

*Azadirachta indica* A. Juss., Meliaceae, Nim-Th., 120-94

Juice of leaf, about 6 teaspoons 3 times a day is given to relieve fever.

*Artocarpus heterophyllus* Lam., Moraceae, Katahar-Th., 3901

Leaf juice, mixed with the flower juice of *Punica granatum* in equal amount is given 4 teaspoons 3 times a day to treat diarrhoea and dysentery.

*Basella alba* L., Basellaceae, Pamoi-Th., 3958

Paste of leaf is applied to relieve jointache; it is also followed by hot compress.

*Butea monosperma* (Lam.) Kuntz., Fabaceae, Palas-Th., 4242

Powder of two seeds is taken as anthelmintic medicine. Leaf juice is applied to treat skin diseases.

*Calotropis gigantea* (L.) Dryand., Asclepiadaceae, Madar-Th., 3362 Latex is applied to treat boils.

*Capparis spinosa* L., Capparaceae, Baghmukhwa-Th., 155-94

Root juice, about 4 teaspoons 3 times a day is given to treat indigestion.

*Careya arborea* Roxb., Lecythidaceae, Kumbhi-Th., 154-94

Bark juice, about 4 teaspoons 3 times a day is given to relieve fever.

*Carissa carandas* L., Apocynaceae, Karonda-Th., 185-94

Pieces of root is roasted in mustard oil which is put in the wound to kill any germs inside; it also helps for quick healing of the wound.

*Cassia fistula* L., Fabaceae, Airoka kathwa-Th., 149-94

Fruit pulp is applied on forehead to treat headache. Juice of fruit, about 4 teaspoons 3 times a day is taken in case of acidity.

*Clerodendrum viscosum* Vent., Verbenaceae, Bhand-Th., 136-94

Juice of leaf is applied on temples of both sides to relieve headache.

*Coleobrookea oppositifolia* Sm., Lamiaceae, Dhursul-Th., 3945

Paste of leaf bud is applied around the anus to treat tapeworm.

*Coix lachryma-jobi* L., Poaceae, Guinji-Th., 4492

Juice of root, about 4 teaspoons once a day for three days, is taken as an anthelmintic medicine.

*Cryptolepis buchananii* Roem. & Schult., Asclepiadaceae, Seto dudhiya-Th., 137-94. Leaf is fed to animals as galactagogue.

*Dalbergia sissoo* Roxb., Fabaceae, Siso-Th., 9494

Juice of bark, about 4 teaspoons 4 times a day is taken during painful urination.

*Datura metel* L., Solanaceae, Dhatur-Th., 27-95

Dried fruit powder is smoked to treat toothache.

*Diplocyclos palmatus* (L.) C. Jeffrey, Cucurbitaceae, Baj burya-Th., 170-94

Juice of fruit, about 4 teaspoons 3 times a day is given to relieve stomachache.

*Eclipta prostrata* L., Asteraceae, Bhangraila-Th., 106-94.

Juice of plant is applied to treat the wound caused by constant walking barefooted in muddy water, especially during rainy season.

*Equisetum diffusum* D. Don, Equisetaceae, Aankhe-Th., 135-94

Juice of root, about 3 teaspoons 6 times a day is given to relieve fever.

*Eulaliopsis binata* (Retz.) C. E. Hubbard, Poaceae, Kush-Th., 4483

Plant is burnt and the ash, mixed with mustard oil is applied to treat cuts and wounds of domestic animals.

*Euphorbia hirta* (L.), Euphorbiaceae, Bhangariya-Th., 29-95

Latex are dropped inside the eye to treat inflammation.

*E. royleana* Boiss, Euphorbiaceae, Golo syur-Th., 4611

Juice of leaf, about 4 teaspoons 3 times a day is taken to relieve pneumonia.

*Ficus religiosa* L., Moraceae, Pipal-Th., 4161

Juice of bark is applied to treat cuts and wounds. Juice of aerial root, about 6 teaspoons 3 times a day is taken in case of menstrual disorder.

*Holarrhena pubescens* (Buch.-Ham.) Wall. ex G. Don, Apocynaceae, Kachari-Th. 3363

About 10gm of seed powder with milk is taken 2 times a day in case of asthma. Juice of bark, about 4 teaspoons 3 times a day is prescribed to treat cough and cold.

*Ichnocarpus frutescens* (L.) R. Br., Asclepiadaceae, Khegar dudhi-Th., 132-94 Leaf is fed to animal as galactagogue.

*Jatropha curcas* L. Euphorbiaceae, Ratanjot-Th., 191-94.

Latex is applied to treat wounds caused by walking barefooted in muddy water during rainy season; paste of seed is applied to treat burnt part of the body.

*J. gossypifolia* L., Euphorbiaceae, Chhotaka injor-Th., 126-94

Juice of leaf is applied to treat cuts and wounds.

*Justicia adhatoda* L., Acanthaceae, Asura-Th., 3507

About 30gm of leaf juice, mixed with 5 gm of fruit of *Piper longum* and 10gm of rhizome juice of *Zingiber officinale*, is heated, divided into three doses and is taken three times a day.

*Lawsonia inermis* L., Lythraceae, Mehandi-Th., 51-95

Juice of leaf is applied to treat the wounds, between the toes caused by constant walking during the rainy season.

*Leea crispa* van Royen ex L., Leeaceae, Danga-Th., 111-94

Root is chewed to treat dental caries; it is also hung on the ear.

*Leucas cephalotes* (Roth) Spreng., Lamiaceae, Gum-Th., 139-94

Juice of plant is applied to treat cuts and wounds.

*Mukia maderaspatana* (L.) Roem., Cucurbitaceae, Gaihma-Th., 138-94

Seeds, about 6 teaspoons 2 times a day is taken in case of indigestion.

*Peristrophe bicalyculata* (Retz.) Nees, Acanthaceae, Ultakur phularaji, 131-

94. Juice of root, about 3 teaspoons 2 times a day is given in case of a tendency of vomiting or if there is some traces of blood in vomiting. Plant, mixed with 1/4th amount of *Piper longum* is pounded and mixed with water is taken as antirabies medicine.

*Piper longum* L., Piperaceae, Phari pipal-Th., 3474

Ripe fruits are chewed in case of cough and cold.

*Ricinus communis* L., Euphorbiaceae, Arend-Th., 4163

Seed-oil is applied to treat muscular sprain. Immatured leaf is slightly heated on fire and is compressed to treat hydrocele.\*

*Scorparia dulcis* L., Scrophulariaceae, Kapale-Th., 134-94

Paste of plant is applied on both the temples to relieve headache.

*Semecarpus anacardium* L.f., Anacardiaceae, Bhela-Th., 150-94

Juice of fruit is applied to treat cuts and wounds.

*Shorea robusta* Gaertn., Dipterocarpaceae, Sal-Th., 203-94

About 10gm of resin, 3 times a day, is taken with yogurt to relieve diarrhoea and dysentery.

*Solanum nigrum* L., Solanaceae, Bhomara-Th., 174-94

Juice of plant is heated and is applied to treat cuts and wounds.

*S. surattense* Brum. f., Solanaceae, Kacheta-Th., 147-94

Juice of fruit, about 4 teaspoons 4 times a day is given to relieve cough and cold, and is also applied to treat cuts and wounds.

*Streblus asper* Lour., Moraceae, Sehor-Th., 129-94

Juice of bark, about 3 teaspoons 4 times a day is given in case of diarrhoea and dysentery.

*Terminalia alata* Heyne ex Roth, Combretaceae, Saj-Th., 202-94

Juice of bark, about 6 teaspoons 3 times a day is given in case of diarrhoea and dysentery.

*Tinospora sinensis* (Lour.) Merr., Menispermaceae, Guruj-Th., 3301

Juice of stem, about 6 teaspoons 3 times a day is given to treat the bloody urine.

*Woodfordia fruticosa* (L.) Kurz, Lythraceae, Dhayara-Th., 117-94.

Juice of bark is boiled and is applied to treat burnt part of the body; it is also given, 3 teaspoons 6 times a day to relieve diarrhoea and dysentery.

*Zizyphus mauritiana* Lam., Rhamnaceae, Ber-Th. 3365

Juice of root, about 4 teaspoons 4 times a day is taken to relieve gastric troubles.

## Result and Discussion

The study identified 52 species of medicinal plants which are used to relieve 26 types of diseases. It was noted that the roots (12 species), leaves (11 spp.), whole plant (7 spp.), bark (6 spp.) fruit (6 spp.), latex (5 spp.), seeds (4 spp.) and wood (1 spp.) were commonly used in native therapy. Out of these, three species are valued for veterinary medicine. The priority of the villagers is native treatment which is cheap and easily available in their door steps. The western treatment is their last preference of treatment.

The healers in the rural areas complained that it was difficult to get herbal drug when needed. Two informants had planted *Acorus calamus*, *Cassia fistula*, *Eulaliopsis binata*, *Justicia adhatoda*, *Piper longum* and *Woodfordia fruticosa* in their kitchen garden. It seems to be a green signal to encourage indigenous knowledge to conserve the plant resources of their surroundings.

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