Herbal Veterinary Practices in Nepal

N. P. Manandhar

Ka 3-16, Naya Baneshwar, P. O. Box 3389, Kathmandu

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Abstract
The indigenous knowledge, acquired by long experience has important role in rural communities for livelihood. So far, it is communicated verbally to limited family members. As a result, this knowledge is at threatened stage. It has been tried to document the folk-lore which is limited among older generations. The paper includes 64 species of plants which are used in veterinary medicine. These plants are represented by 40 families. Of them, one species is Gymnosperm and 3 species belong to Monocotyledons. These plants are used to treat 17 types of animal diseases.

Keywords: Indigenous knowledge, Ethnobotanical study, Veterinary medicine

Introduction
Nepal is a Himalayan country of hills and mountains which cover 77% of the total area (147181 km²) of Nepal. About 90% of population resides in remote and rural areas where roads, healthcare system and other life supporting facilities are lacking. The country has a predominantly agrarian economy and the agriculture sector contributes 39.3% of the total GDP of the country (CBS 1998). However, the midland hills and mountains have the scarcity of agriculture land. As a result, the villagers have adopted the livestock farming as their secondary business for their livelihood.

Nepal's total livestock population in 1995/96 is: cattle 7 million, buffalo 3.3 million, sheep 8.5 million and goat 0.0058 million. The farmers domesticate livestock for meat, milk, fertilizer, tillage and cultural values. In spite of the family consumption, they sell the meat, milk and milk products which help them to meet their basic economic requirements. Therefore, they are very conscious about the animal health and try to care them like their own family members.

It has been observed that the indigenous knowledge about the uses of plant resources is at the verge of extinct. It is scattered and is communicated by words of mouth. Moreover, this knowledge is limited to older people who are mostly illiterate. There is lack of recording such vast knowledge. Thus, it is aimed to document such important plant-lore which the people have acquired by long experience.

Methodology
The ethnomedical study was conducted during 1991 to 1999 in different remote areas of central and west Nepal. The data was compiled by personal observation, discussion with experienced adults and the local healers. Sixty five adult informants of 40 to 70 years of age were interviewed. They were 17 local healers, 35 experienced villagers and 13 women. These informants were cooperative and frank. They also showed some animals who were under treatment by the villagers. Most of the plants were collected by the author around the villages. These plants were showed to the informants to identify the medicinal uses. The informants help collect plants which were not included in my collection. The information were noted during different seasons of a year and they were cross checked among the informants at different places. The data were considered valid if at least 3 to 5 informants had the similar positive reply about the medicinal properties of the plant.

The plants were identified by the author with the help of literature, photographs and comparing the herbarium specimens preserved in National Herbarium and Plant Research Laboratories, Godawari, Nepal where the specimens of this study are also deposited for future use.

Results
The plants are arranged in alphabetical sequence of botanical name, family in brackets, Nepali names in inverted commas and medicinal uses of each species. The dose and the time duration for treatment, provided by the informants are also given.

*Abelmoschus esculenta* (L.) Moench (Malvaceae), 'Ramtoriya'. Juice of root, mixed with the plant juice of *Centella asiatica* (L.) Urb. and jaggery, is given, 10 tablespoons 3 times a day for 3 to 5 days to relieve blocked urination.

*Abelmoschus manihot* (L.) Medik. (Malvaceae), 'Som raja'. Paste of root is applied locally and is then tied with a piece of cloth
to treat dislocation of bone and is continued for about one month.

*Achyranthes aspera* L. (Amaranthaceae), 'Datian'.

Root is pounded with sesamum oil and turmeric powder, and the paste about 5 tablespoons 3 times a day is given for bronchitis and is continued for 5 to 7 days.

*Acorus calamus* L. (Araeaceae), 'Bojho'.

Paste of root, mixed in equal amount with the paste of inner bark of *Moringa oleifera* Lam. is given about 7 tablespoons 4 times a day for 3 days to treat indigestion.

*Aesculus* (L.) Pers. is given about 10 tablespoons 2 times a day for about 7 days to relieve dysentery.

*Agave* (Agavaceae), 'Ketuki'.

Juice of leaf is lightly rubbed locally to treat boils.

*Ageratum conyzoides* L. (Compositae), 'Bhera jhar'.

Paste of leaf is applied locally and is tied with a piece of cloth to treat dislocated bone.

*Albizia chinensis* (Osbeck) Merr. (Leguminosae), 'Siris'.

Young leaves and shoots are poisonous to cattle.

*Alstonia scholaris* (L.) R. Br. (Apocynaceae), 'Chhatiwan'.

Juice of bark, mixed in equal amount with the root juice of *Cynodon dactylon* (L.) Pers. is given about 10 tablespoons 3 times a day for 3 to 5 days to treat diarrhoea.

*Anagallis arvensis* L. (Primulaceae), 'Armale'.

Juice of plant is applied to remove leeches which attack animals while grazing in the forest during rainy season.

*Arisaema tortuosum* (Wall.) Schott, (Araeaceae), 'Bir banko'.

About 10 gm of seeds, mixed with half tablespoons salt is given 2 times a day for 3 to 5 days to relieve diarrhoea and dysentery of a goat and a sheep.

*Atylosia scarabaeoides* (L.) Benth. (Leguminosae), 'Ban gahate'.

Juice of plant, about 10 tablespoons is given 2 times a day for about 7 days to treat diarrhoea.

*Bombax ceiba* L. (Bombacaceae), 'Simal'.

About 15 gm of pounded seeds, mixed with 5 tablespoons of bark juice of *Psidium guajava* L. is given 3 times a day for about 3 days for indigestion. The fibre of seed, mixed with castor oil is pounded and applied locally, tying with a piece of cloth to treat dislocated bone.

*Buplurum candollii* Wall. ex DC. (Umbelliferae), 'Chadu'.

Tender leaves and shoots are considered poisonous but the juice of its root is dropped in the wound to kill any germs, and it helps heal of the disease quickly.

*Calotropis gigantea* (L.) Dryand (Asclepiadaceae), 'Aank'.

Juice of leaf, mixed with the leaf juice of *Clerodendron viscosum* Vent in equal amount is given about 5 tablespoons 3 times a day for 5 days in diarrhoea.

Paste of root, mixed with half the amount of sesamum oil is applied to treat wound on the shoulder of an ox or a buffalo, caused by yoke; the medicine is generally administered during night.

*Capsicum frutescens* L.(Solanaceae), 'Jire khursani'.

Paste of leaf, mixed with the paste of green fruits of *Solanum nigrum* L. is given about 10 tablespoons 3 times a day for 3 to 5 days to treat mumps.

*Cardiospermum halicacabum* L. (Apocynaceae), 'Kesh lahara'.

Paste of root is applied on the body of cattle to remove lice or any other ectoparasites.

*Cassia tora* L. (Leguminosae), 'Sanotapre'.

Squeezed leaves are simply rubbed on the body of an animal to check the falling of hairs.

*Citrus medica* L. (Rutaceae), 'Nibuwa'.

Juice of fruit is boiled to form a gelatinous mass and this liquid of one tablespoons is fed to an animal as an anti poison remedy.

*Clematis graveolens* Lindl. (Ranunculaceae), 'Nasar lahara'.

Paste of plant is applied to treat wound on the shoulder of an ox or a buffalo, caused by yoke. This medicine is applied during night.

*Clome gynandra* L. (Capparaceae), 'Tor i jhar'.

Paste of stem bark is applied to treat fresh wound of goat, sheep and other small animals.

*Crotalaria spectabilis* Roth (Leguminosae), 'Bhuban jhar'.

Tender leaves and shoots are considered poisonous to cattle. Paste of tender leaves is applied to treat wounds; this paste, mixed with turmeric powder and the latex of *Euphorbia royleana* Boiss is applied in case of muscular swelling.

*Curculigo orchioides* Gaertn. (Hypoxidaceae), 'Musali'.

About 7 drops of tender leaf juice are dropped in the eye to treat watering in the eye and the redness on the eye ball.

*Datatura metel* L. (Solanaceae), 'Kalo dhuturo'.

Paste of immature fruit, mixed with double amount fruit pulp of *Aegle marmelos* (L.) Correa is given, about 15 tablespoons 2 times a day for 3 days in diarrhoea and dysentery.

*Delphinium scabriiflorum* D. Don (Ranunculaceae), 'Bikhandi ghans'.

Juice of root or leaf is applied to treat wounds; it helps heal the wound quickly and protects from the attack of the germs.

*Erythrina stricta* Roxb. (Leguminosae), 'Phaleto'.

Juice of bark is dropped in the wound to kill any germs for quick healing of the disease. This juice is also spread on the body of a calf to treat foot and mouth disease.

*Euphorbia hirta* L. (Euphorbiaceae), 'Dudhi'.

Paste of plant is applied to treat wound on the shoulder of an ox or a buffalo, caused by yoke; it is also used for the wound on the back of a horse. This medicine is generally used during night when the animals are in rest.

*Euphorbia wallichii* Hook. (Euphorbiaceae), 'Dudhe jhar'.

The plant is highly poisonous to cattle.

*Ficus benghalensis* L. (Moraceae), 'Bar'.

Juice of stem bark, about 15 tablespoons 3 times a day is given for diarrhoea.

*Ficus nerifolia* Sm. (Moraceae), 'Dudhilo'.

Juice of bark is dropped in the eye to treat conjunctivitis.
The leaves are fed as a galactagogue.

*Hypitis suaveolenta* (L.) Poit. (Labiatae), ‘Ban bawari’.
Juice of leaf is dropped in the eye for conjunctivitis.

*Jatropha gossypifolia* L. (Euphorbiaceae), ‘Rato saijun’.
Paste of root is applied locally to treat dislocated bone, tying with a piece of cloth; its decoction, about 10 tablespoons 2 times a day for 3 weeks is also given for the same ailment.

*Justicia adhatoda* L. (Acanthaceae), ‘Asuro’.
Paste of leaf and flower, mixed with half the amount of leaf paste of *Octum temujorum* L. is given, about 10 tablespoons, 3 times a day for about 5 days in cough and bronchitis.

*Kalanchoe spathulata* DC. (Crassulaceae), ‘Ajammani’.
The leaves are highly poisonous to cattle.

*Lindera neesiana* (Wall. ex Nees) Kurz (Lauraceae), ‘Siltimur’.
Fruits are boiled with water for 15 minutes and the strained water is used to wash the body of an animal to remove lice or any other ectoparasites.

Root, mixed in equal amount with the bark of *Mangifera indica* L. is made into paste and is applied to treat wounds. It is also considered useful in case of dislocated bone.

*Lyonia ovalifolia* (Wall.) Drude (Ericaceae), ‘Angeri’.
Young leaves are highly poisonous to cattle.

*Milletia extensa* (Benth.) Baker (Leguminosae), ‘Gaujo’.
Juice of leaf is warmed and is applied to treat lice or any other ectoparasites.

*Nicotiana tabacum* L. (Solanaceae), N. ‘Tambaku’.
About 20 gm of dried leaf is soaked in a cup of water for about 4 hours and the strained water is poured in the wound for quick healing.

*Nyctanthes arbor-tristis* L. (Oleaceae), ‘Parijat’.
Bark is boiled with water till the amount is half and this liquid, about 15 tablespoons 3 times a day for about 2 weeks is given to animals suffering from fever. Paste of bark is applied to treat wounds.

*Oroxyllum indicum* (L.) Kurz (Bignoniaceae), ‘Tatelo’.
Paste of seeds with sesame oil is applied in case of wounds.

*Oyis wightiana* Wall. ex Wight (Santalaceae), ‘Nundhi’.
Young leaves are considered poisonous to goat. Juice of bark about 10 tablespoons 2 times a day is given for 3 days to treat indigestion.

*Parthenocissus semicordata* (Wall.) Planch. (Vitaceae), ‘Charchare labara’.
The plant is considered nutritious and it helps increase the amount of milk of a cow or a she-buffalo. It has appetizing property too.

*Persicaria hypopiper* (L.) Schach (Polygonaceae), ‘Pire’.
Paste of plant about 10 tablespoons is given an anthelmintic medicine.

*Pieris formosa* (Wall.) D. Don (Ericaceae), ‘Chimal’.
Paste of leaf is applied to treat scabies. The leaves are poisonous to cattle.

*Piptanthus nepalensis* (Hook.) D. Don (Leguminosae), ‘Jhyan’.
Juice of leaf is applied to treat wounds in the hoof.

*Plumbago zeylanica* L. (Plumbaginaceae), ‘Chitu’.
Juice of root is applied to treat falling of hairs; its paste about 15 tablespoons 3 times a day for about 5 days is given in case of diarrhoea.

*Pogostemon benghalensis* (Brum.) Kunze (Labiatae), ‘Rudilo’.
About 100 gm of plant is boiled with a cup of water for about 5 minutes and the strained liquid about 10 tablespoons 3 times a day for about 3 weeks is given in case of cough and bronchitis.

*Prunus napalensis* (Ser.) Steud. (Rosaceae), ‘Jangali auru’.
Juice of bark is applied on the body to kill ectoparasites. The leaves are considered poisonous to cattle.

*Prunus venosa* Koehne (Rosaceae), ‘Chari aur’.
Young leaves are considered poisonous to cattle but its paste is applied to treat muscular swelling, caused due to some hurt.

*Rhododendron campanulatum* D. Don (Ericaceae), ‘Nilo chimal’.
Leaves are highly poisonous to cattle.

*Rhododendron cinnabarina* Hook. f. (Ericaceae), ‘Gurans’.
Leaves are highly poisonous to cattle.

*Rumex nepalensis* Spreng. (Polygonaceae), ‘Albi’.
About 50 gm plant is boiled with two cups of water for 5 minutes and the strained water, about 10 tablespoons 3 times a day for a week is given to treat diarrhoea of a goat.

*Salix denticulata* Anders. (Salicaceae), ‘Buiset’.
The leaves are considered poisonous to sheep.

*Schima wallichii* (DC.) Korth. (Theaceae), ‘Chilaune’.
Juice of bark, about 20 tablespoons 4 times a day for 5 days is given in case of cough.

*Scindapsus officinalis* (Roxb.) Schott (Araceae), ‘Kanchiro’.
About 10 gm of fruit is boiled with a cup of water for 5 minutes and the strained water is dropped in the eye to treat eye disease (watering in the eye), this water about 10 tablespoons 3 times a day for a week is also given to treat diarrhoea; it is also put in the wound to remove maggots.

*Sidha cordata* (Brum.) Borr. (Malvaceae), ‘Kuro’.
About 15 tablespoons of plant paste is put in the mouth of a cattle if the milching is suddenly stopped and is continued once a day for about 3 days.

*Stephania glandalifera* Miers. (Menispermaceae), ‘Biral gano’.
Sliced root, about 50 gm 3 times a day for about 3 days is given for diarrhoea.

*Sycygium cumini* (L.) Skeels (Myrtaceae), ‘Jamun’.
Juice of bark, mixed with the jaggery is given for diarrhoea.

*Taxus baccata* L. subsp. *wallichiana* (Zucc.) Pilger (Taxaceae), ‘Thireg salla’.
Leaves are considered poisonous to cattle.

*Teprosia purpurea* (L.) Pers. (Leguminosae), ‘Kande sakimu’.
Paste of plant is applied for wound and boils.

*Xanthium strumarium* L. (Compositae), ‘Bhende kuro’.
Paste of leaf is applied to treat wound of a goat, sheep and other
small animals.

Zingiber officinale Roscoe (Zingiberaceae), ‘Aduva’.

Paste of rhizome, mixed with half the amount of the cloves of Allium sativum L. is given about 10 tablespoons 3 times a day for 7 days in cough and fever.

Zizyphus mauritiana (Brum. f) Wight & Arn. (Rhamnaceae), ‘Nayer’.

About 50 gm of bark is boiled with 4 cups of water for about 10 minutes and this water is used to wash the wound on the shoulder of an ox or a buffalo, caused by yoke; it helps for quick healing of wound.

Discussion

The study has identified 17 types of diseases and 64 species of plants which are used in veterinary medicine. These plants are represented by 40 families including two Monocot and one Gymnosperm. Sixteen species were used to treat wounds whereas nine species were valued for diarrhoea and dysentery, five for dislocation of bone, four each for eye complaints and ectoparasite, three for indigestion and two species each for cough, bronchitis, fever, muscular swelling and falling hairs. For other complaints one species was used in each case.

The informants reported 14 species of plants such as Ageratum conyzoides, Bupleurum candollii, Croton spectabilis, Euphorbia wallichii, Kalanchoe spathulata, Lyonia ovalifolia, Osyris wightiana, Pieris formosa, Prunus napalensis, Prunus venosa, Rhododendron campanulatum, Rhododendron cinnabarinum, Salix denticulata, Taxus baccata which were considered poisonous for the livestock. If the animals happen to eat poisonous plants, the juice of Citrus medica is fed as anti poison remedy. Some plants like Aegle marmelos, Allium sativum, Clerodendron viscosum, Cynodon dactylon, Euphorbia myleana, Mangifera indica, Moringa oleifera, Ocimum tenuiflorum, Psidium guajava and Solanum nigrum are used in admixture with other plants. The dose and time duration for internal uses are noted in case of 25 species. The plants and their curative properties mentioned here are reported for the first time.

Some authors have mentioned the uses the veterinary medicinal plants. These information differ either in the use of parts or in the treatment of the diseases. According to Manandhar (1989), the seeds of Alstonia scholaris is given as tonic. Likewise, Chaudhary (1994) reports plants such as Bombax ceiba, Cassia tora, Datura metel and Schima wallichii which differ in the use of parts and the treatment of diseases.

In some ethnobotanical studies, Coburn (1984), Manandhar (1993, 1991) and Shrestha (1985) have mentioned Caesalpinia decapitata, Entada scandens, Eupatorium adenophorum, Mukia madaraspataana, Prunus persica, Scutellaria scandens and Spermadictyon suaveolens which are used in veterinary medicine. But, such information is not recorded from this study.

Generally, the senior family members can identify and can treat the diseases. They try to identify the diseases by the behaviour, stool, urine, colour of eyes and the sound of an animal. If needed, they discuss with the neighbours and the healers about the diseases and their treatment.

Many informants in the villages replied that they had forgotten the name of plants and their remedial properties. The younger generation is less interested to this treatment as they like to do a job in urban areas or in some foreign countries. It is time to document more herbal remedies from rural and tribal populations to help develop new and important plant based medicines.

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References


