

Plants and animals based medicines used by Koch-Rajbanshi of Bhadrapur, Jhapa district, Eastern Nepal

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Abstract

The present study documented the traditional uses of 49 plant species and 18 animal species as medicines by the ethnic Koch- Rajbanshi inhabiting Bhadrapur in Jhapa district of eastern Nepal. Among 49 medicinal plant species documented 27, 5, 5, and 12 were herbs, shrubs, climbers and trees respectively. Similarly, among 12 animal species, arthropods, pisces, reptiles, aves and mammals were represented by dissimilar numbers such as 6, 3, 3 and 2, respectively.

Keywords: Ailments, ethnomedicine, ethnozoology, Rajbanshi.

Introduction

The ethnic Koch- Rajbanshi inhabiting Bhadrapur in Jhapa district have unique cultural traditions (Adhikary, 2010). Their ancestors had deep belief in their native folklore medicine for the treatment of several of common diseases (Sanyal, 1965). Their valuable knowledge, they passed to their generation verbally without exposing to outside world. They kept their knowledge secretly within their community. Because of limitation publicity of their valuable knowledge in ethnomedicines and by the time encroachment of allopathic drugs unwillingness of new generation to use traditional medicines, now their famous treatment processes, seem to have been declining rapidly.

In spite of that, the high cost of allopathic drugs and increase in drug resistance to common diseases like sexually transmitted disease, malaria and other viral and bacterial diseases have caused the therapeutic approaches to be alternatives of traditional medicines as an option for jointly arranged research for new chemical entities, so for this the documentation of traditional knowledge of medicine is most essential (Samy & Gopalkrishnakone, 2010).

Understanding the gap being created between uses of traditional knowledge of locally available plants and animals based medicines and their declining uses, the present study was selected to be carried on Koch-Rajbanshi of Bhadrapur, for the collection of information and available materials for conservation purposes.

Materials and Methods

Field studies were carried out between September-November, 2017 with the help of local ethnomedicine practitioner of the Koch-Rajbanshi community in Bhadrapur of Jhapa District who had well information and ideas about surrounding plants and animals, their local names, preparation of medicine, method of administration, and doses different ailments and diseases. The collected plant specimens were identified up to species level with the help of herbarium of Botany Department of P.G. Campus, Biratnagar. Their local

names were confirmed with the help of literature and photos. Similarly, animal species were identified by the experts of Department of Zoology, P.G. Campus, Biratnagar.

Results and Discussion

On plants, Koch- Rajbanshi of Bhadrapur uses the stem bark of *Ziziphus mauritiana* for relieving pain during pregnancy. They use bark of (*Citrus aurantifolia* and *Oxalis corniculata*) to cure acidity (Table 1). One species (*Terminalia bellirica*) to cure anaemia, 3 species (*Cucumis sativus*, *Embllica officinalis* and *Momordica charantia*) to treat high blood pressure), 2 species (*Aloe vera* and *Solanum tuberosum*) to treat burns, 5 species (*Acorus calamus*, *Curcuma longa*, *Piper nigrum*, *Terminalia bellirica* and *Zingiber officinale*) to treat cough, 8 species (*Aegle marmelos*, *Aloe vera*, *Azadirachta indica*, *Embllica officinalis*, *Ficus benghalensis*, *Momordica charantia*, *Psidium guajava* and *Syzygium cumini*) to treat diabetes, 8 species (*Allium cepa*, *Embllica officinalis*, *Ficus benghalensis*, *Mangefera indica*, *Musa paradisiaca*, *Psidium guajava*, *Syzygium cumini* and *Tectaria coadunata*) to cure diarrhea and dysentery, 2 species (*Allium cepa* and *Nyctanthes arbortristis*) to relieve ear pain, 3 species (*Cynodon dactylon*, *Lycodium clavatum* and *Swertia chirata*) to relieve fever, 3 species (*Allium sativum*, *Mentha specata* and *Trachyspermum ammi*) to treat gastritis, 2 species (*Embllica officinalis* and *Justicia adhatoda*) to control hair problems, 1 species (*Datura metal*) to treat hydrooel, 3 species (*Artemisia vulgaris*, *Carica papaya* and *Momordica charantia*) against intestinal worms, 3 species (*Aloe vera*, *Bombax ceiba* and *Lawsonia inermis*) to check irregular menstruation, 3 species (*Lagenaria siceraria*, *Oroxylum indicum* and *Saccharum officinarum*) to control jaundice, one species (*Mimosa pudica*) to cure piles, 5 species (*Colotropis*, *gigantean*, *Dolichos biflorus*, *Ficus benghanlensis*, *Lycopodium clavatum* and *Trigonella foenum- graecum*) to treat rheumatism, 2 species (*Ocimum basilicum* and *Terminalia bellirica*) to treat skin problems, 2 species (*Amomum subulatum* and *Mentha spicata*) to treat Stomachache, 2 species (*Achyranthes aspera* and *Syzygium aromaticum*) to relieve toothache, 2 species (*Bombax ceiba* and *Centella asiatica*) against urinary problems, and 4 species (*Brassica oleracea*, *Lawsonia inermis*, *Oroxylum indicum* and *Tagetes erecta*) to treat wounds. These findings were in agreement with Biswas *et al.* (2010) that the tribal people use several medicinal plant species for curing a single disease.

Table 1. Plants and plant parts used for different ailments by Koch-Rajbanshi people of Bhadrapur, Nepal.

| SN | Species (Nepali name) (Habit) | Parts used | Ailments |
|----|--|--------------------------|---|
| 1 | <i>Acorus calamus</i> (Bojho) (H) | Rhizome paste | Cough and sore throat |
| 2 | <i>Aegle marmelos</i> (Bel) (T) | Fruit pulp leaf | Diabetes, gastritis, and constipation, blood impurity and excess perspiration |
| 3 | <i>Allium cepa</i> (pyaj) (H) | Bulb juice | Ear pain and diarrhea |
| 4 | <i>Allium sativum</i> (Lahsun) (H) | Bulb with pudina | Gastritis pain, drift cough, blood pressure |
| 5 | <i>Aloe vera</i> (Ghiu-kumari) (H) | Leaf pulp with honey | Burn, diabetes and Irregular menstruation |
| 6 | <i>Amomum subulatum</i> (Alaichi) (H) | Fruit | Stomachlache |
| 7 | <i>Achyranthes aspera</i> (Datiwan) (H) | Stem | Toothache |
| 8 | <i>Artemisia vulgaris</i> (Titepati) (H) | Leaf powder, plant juice | Round worm, bleeding |

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|----|---|---|---|
| 9 | <i>Azadirachta indica</i> (Neem) (T) | Leaf past, leaf powder | Skin troubles diabetes |
| 10 | <i>Bombax ceiba</i> (Simal) (T) | Tap root flower, paste of tap root and bark with cow milk | Urinary trouble, Irregular menstruation |
| 11 | <i>Brassica oleracea</i> (Banda Gobi) (H) | Cabbage | Cure wound |
| 12 | <i>Calotropis gigantean</i> (Aak) (S) | Latex | Rheumatism and sprain |
| 13 | <i>Carica papaya</i> (mewa)(S) | Latex | Ringworm and scabies |
| 14 | <i>Centella asiatica</i> (Ghortapre) (h) | Leaf paste | Indigestion, urinary problems |
| 15 | <i>Citrus aurantifolia</i> (Kagati) (S) | Fruit juice with water | Acidity and vomiting |
| 16 | <i>Cucumis sativus</i> (Kakro) (CC) | Whole | High blood pressure |
| 17 | <i>Curcuma longa</i> (Besara) (H) | Dried rhizome powder | Cough and vomiting |
| 18 | <i>Cynodon dactylon</i> (Dubo) (H) | Paste of plant with tulsi leaves and honey | Fever and pneumonia |
| 19 | <i>Datura metel</i> (Dhaturo) (H) | Seed paste, leave with mustard oil paste | Scabies, hydrocele, babasir |
| 20 | <i>Dolichos biflorus</i> (Gahat) (H) | Whole plant soup | Arthritis, rheumatism, stone |
| 21 | <i>Emblica officinalis</i> (Amala) (T) | Fruit powder | Dysentery, stomachache, blood pressure, diabetes, blood sugar and hair fall |
| 22 | <i>Ficus benghalensis</i> (Bar) (T) | Latex from stem, leaf juice | Rheumatism pain, diarrhea and diabetes |
| 23 | <i>Justicia adhatoda</i> (Asuro) (S) | Leaf juice | Dandruff |
| 24 | <i>Lagenaria siceraria</i> (Lauka) (C) | Leaf | Jaundice |
| 25 | <i>Lawsonia inermis</i> (Mehendi) (S) | Leaf paste | Menstruation, infertility and healing wound |
| 26 | <i>Lycopodium clavatum</i> (Nagbeli) (C) | Root paste | Arthritis, rheumatism and fever |
| 27 | <i>Magnifera indica</i> (Aap) (T) | Bark juice | Diarrhea |
| 28 | <i>Mentha spicata</i> (pudina) (H) | Leaf paste | Gastritis, stomachache |
| 29 | <i>Mimosa pudica</i> (Lajjawati jhar) (H) | Leaf powder with cow milk root juice | Piles, prostate gland |
| 30 | <i>Momordica charantia</i> (karela) (C) | Fruit, stem bark | High blood pressure and diabetes, intestinal parasite |
| 31 | <i>Musa paradisiaca</i> (Kera) (H) | Root juice mixed with curd | Diarrhea and dysentery |
| 32 | <i>Nyctanthes arbor-tristis</i> (Parijat) (T) | Leaf juice | Ear pain, common cold fever |
| 33 | <i>Ocimum basilicum</i> (Babari) (H) | Leaf juice | Skin allergy, irritation |
| 34 | <i>Oroxylum indicum</i> (Tatelo) (T) | Bark juice with lime powder, bark powder | Jaundice, wounds |
| 35 | <i>Oxalis corniculata</i> Chariamilo) (H) | Leaf juice | Acidity |
| 36 | <i>Piper nigrum</i> (Marich) (H) | Seeds powder | Cough |
| 37 | <i>Psidium guajava</i> (Amba) (T) | Unripe fruit skin | Diarrhea and dysentery, diabetes |
| 38 | <i>Saccharum officinarum</i> (Ukhu) (H) | Stem juice | Jaundice |
| 39 | <i>Solanum tuberosum</i> (Aalu) (H) | Tuber | Cure burn |
| 40 | <i>Swertia angustifolia</i> (Chirata) 29(H) | Leaf juice stem, juice | Skin disease, fever, stomach ache, vomiting |

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|----|---|--------------------------|---|
| 41 | <i>Syzygium aromaticum</i> (Laung) (C) | Oil | Toothache |
| 42 | <i>Syzygium cumini</i> (Jamun) (T) | Bark juice, seed powder | Diarrhea and dysentery, constipation, diabetes |
| 43 | <i>Tectaria coadunata</i> (Kalo niguro) (H) | Rhizome | Diarrhea and dysentery, throat ache |
| 44 | <i>Tegetes erecta</i> (Sayapatri) (H) | Leaf juice, leaf paste | Wounds, fever |
| 45 | <i>Terminalia bellirica</i> (Barro) (T) | Bark, fruit, seed oil | Anemia, cough, skin disease and leprosy |
| 46 | <i>Trachyspermum ammi</i> (Jwano) (H) | Dry seed | Gastric and undigestion |
| 47 | <i>Trigonella foenumgraecum</i> (methi) (H) | Seed soup, leaf and stem | Kidney and gall bladder stone, arthritis and rheumatism |
| 48 | <i>Zingiber officinale</i> (Aduwa) (H) | Rhizome powder | Cough and vomiting |
| 49 | <i>Ziziphus mauritiana</i> (Bayer) (T) | Stem bark | Abdominal pain during pregnancy |

(H = Herb, S = Shrub, T = Tree, C = Climber)

Among the animals, the Koch-Rajbanshis use *Amphipnous cuchia* and *Clarius batrachus* to treat anemia; *Anadenus* sp. to treat asthma; products of *Apis indica*, *Bos indicus*, *Gallus gallus* and *Passer domesticus* to relieve body ache (Table 2). *Cancer pagurus*, *Columba livia* and *Gallus gallus* to relieve common cold; *Corvus splendens* meat to cure epilepsy; *Amphipnous cuchia* and *Bellamyia bengalensis* to cure nightblindness; *Aspiderates* species against piles; *Puntius gonionotus* and *Vespa sylvestris* to cure pneumonia; *Ptyas mucosa* and *Varanus flavescens* to treat rheumatism; products of *Bos indicus* and *Bubalus bubalis* for treatments of scabies and measles; mandibles of *Palemon pacificus* to treat thorn prick injury; and, meat of *Corvus splendens* for healing cracks treatment. As per the informant, most of these animals are available in the study area mainly due to environmental degradation and habitat loss.

Table 2. Animals and their parts used for different ailments by Koch-Rajbanshi people of Bhadrapur, Nepal.

| S.N. | Species | Parts used | Ailments |
|------|--|--|---------------------------------------|
| 1 | <i>Amphipnous cuchia</i> (Bammachha) | Whole (raw) or blood | Nightblindness, anemia |
| 2 | <i>Anadenus</i> sp. (slug)(Chiple kira) | Whole (raw) | Asthma |
| 3 | <i>Apis indica</i> (Madhu-maachhi) | Honey paste or honey with aduwa, lahsun and marich in cow ghee | Backache and body pain, common cold |
| 4 | <i>Aspiderates</i> sp. (Kachhuwa) | Raw meat and shell | Cure piles |
| 5 | <i>Bellamyia bengalensis</i> (Ghunghi) | Whole (raw) | Nightblindness and weakness |
| 6 | <i>Bos indicus</i> (Gai) | Cow ghee, cow urine | Body pain, common cold, skin diseases |
| 7 | <i>Bubalus bubalis</i> (bhaisi) | Burned dung | Scabies and measles |
| 8 | <i>Cancer pagurus</i> (Gangata) | Whole body soup | Common cold |
| 9 | <i>Clarias batrachus</i> (Mungri machha) | Raw meat | Anemia |
| 10 | <i>Columba livia</i> (Paruki) | Raw meat, faecal matter | Common cold, blisters and carbuncles |
| 11 | <i>Corvus splendens</i> (Kaag) | Raw blood, raw meat | Wounds and epilepsy |
| 12 | <i>Gallus gallus</i> (Jungali kukura) | Meat | Back and body ache and |

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|----|--|-------------------------------------|-----------------------------|
| | | | common cold |
| 13 | <i>Paleomon</i> (Jhinge machha) | Crushed mandible | injury |
| 14 | <i>Passer domesticus</i> (Bhangera) | Meat | Headache |
| 15 | <i>Puntius gonionotus</i> (Pothe machha) | Dries fish with powder marich | Pneumonia |
| 16 | <i>Ptyas mucosas</i> (Dhaman sarpa) | Fat | Arthritis and rheumatism |
| 17 | <i>Varanus flavescens</i> (Sun-gohoro) | Burned flesh mixed with coconut oil | Burns arthritis and scabies |
| 18 | <i>Vespa sylvestris</i> (Birmauri) | Whole insect soup | Cough and pneumonia |

Although traditional knowledge (TK) is key to the sustainable development, it is vanishing rapidly due to faulty policies and legislations. According to UNESCO (1994), policy and legislation that devalues or suppresses indigenous groups and their cultures. They are facing multiple direct threats to TK, including the loss of pathways of TK transmission conveyed via indigenous language, hence, loss of language means loss of TK, change in traditional livelihood practices, i.e., reduced reliance on traditional livelihood practices, loss of traditional rights, i.e., access to traditional land and resources, loss of traditional institutions (Social organization, customary rights, traditional rules of resource use and management), and environmental degradation, i.e., pressures originating from population growth the Koch- Rajbanshi community is the victim of all those problems.

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