

Ethnobiological Study of the Majhi of Sindhuli District

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Abstract

Ethnobiological study of the Majhi ethnic group which was carried out in Bhimeshwar and Hatpate VDCs of Sindhuli district showed that these people possessed strong indigenous knowledge of the use of bioresources and also had sound knowledge of the medicinal plants for curing several ailments. The main thrust of the present ethnobiological study centers on the potential use of medicinal animals and plants by Majhi of Sindhuli district. The study shows that these people were found using 58 faunal species for the purpose of meat, eggs, skin, honey, wax, latex, sacrifice, medicine etc. and 226 floral species for the purpose of food staples, medicine, timber, fodder, thatching, ceremonial, marcha cake etc. The results will be used for setting up of conservation priorities, preservation of local biocultural knowledge with sustainable use and development of the resources.

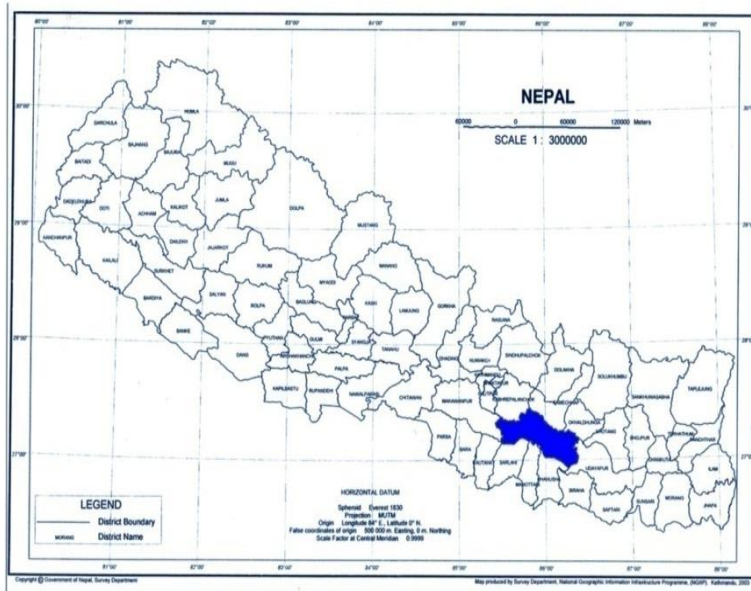
Key words: Ailments, Fodder, Latex, Marcha cake, Medicinal plants

Introduction

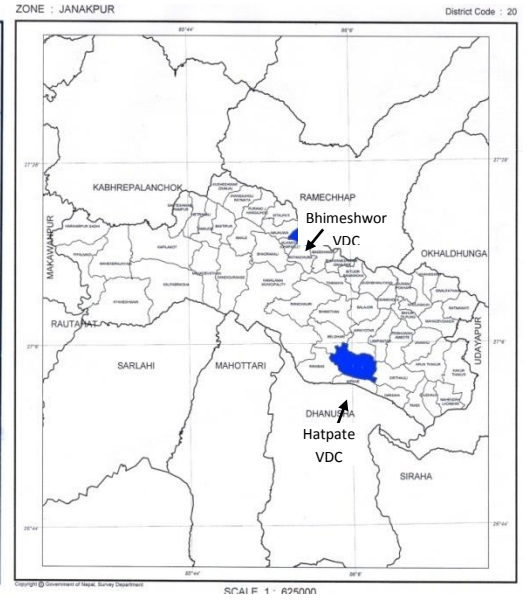
Ethnobiology is an anthropological approach to the zoology and botany which deals not only with the animals and plants used for the medical and other purposes, but also with the socio-economic attributes of particular animals and plants by human societies with enormous potentialities. Majhi are one of the ethnic groups of Nepal possessing their own language, dress, culture etc. These people are dark brown in complexion, medium in height and well built. These people are not only shy and polite, but also very friendly. They depend on several wild and domestic animals and several plant species for different purposes. These animals and plants play an important role for fulfilling their daily needs of food, shelter, fodder, medicine, timber, local drinks, furniture, spices etc. The Majhi community in this area has remained ethnobiologically unexplored and there is no comprehensive account of the traditional medicinal practices. Therefore, the objectives of this study were to (1) document various animals and plants used by the Majhi for their different purposes. (2) document medicinal animals and plants used by the Majhi for curing different diseases. (3) explore the indigenous knowledge and techniques as being practiced by the Majhi.

Study area

Bhimeshwar and Hatpate VDCs are the main study areas which lie in the south eastern part of Sindhuli district of Nepal. It is delimited with coordinates of latitudes from 66' 55" to 27' 22" N and longitudes from 85' 15" to 23' 12" E and its elevation ranges between 168m to 2796 m. There are also riverine woody species in the upper valley that include species of Sal (*Shorea robusta*), Sisso (*Dalbergia sisso*), Silk tree (*Bombax ceiba*), Pine (*Pinus roxburghi*) etc. The mean annual temperature is about 24.5°C, ranging from a mean minimum of 16.6°C to mean maximum of 32.4°C. There is only a slight difference in temperature throughout the year, with the hottest months during April to July (maximum 36.3°C) and the coldest during October to December (minimum 7.1°C). The mean annual rainfall is 128.5 mm and receives the yearly rainfall of 1542.6 mm (Department of Hydrology and Metrology, DHM 2010).



Map 1: Map of Nepal showing Sindhuli District



Map 3: Map of Sindhuli District showing Bhimeshwor and Hatpate VDC

Materials and Methods

The study is based on both primary and secondary sources of data. Altogether ten field visits were made within the study period from August 2010 to December 2011 for collecting ethnobiological data. Following methods were used to get primary data collection. Primary data collection was based on the methods of participatory observation, group discussion, and questionnaire survey with key informants and taxonomic identification of medicinal animals and plants. Ethnobiological information was collected from 30 informants (23 male and 7 female). Among the 30 informants, 5 were key informants (traditional healers) selected with the assistance of clan leaders and members of the local community.

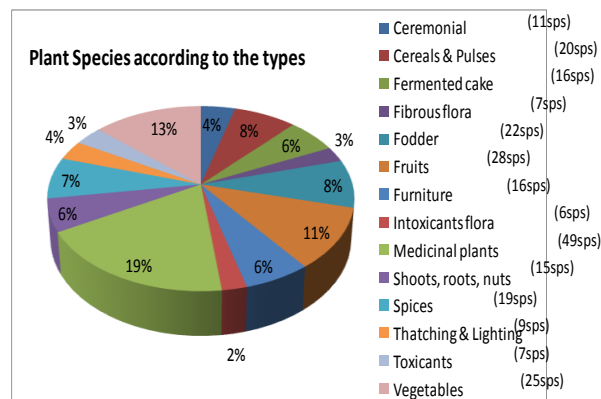
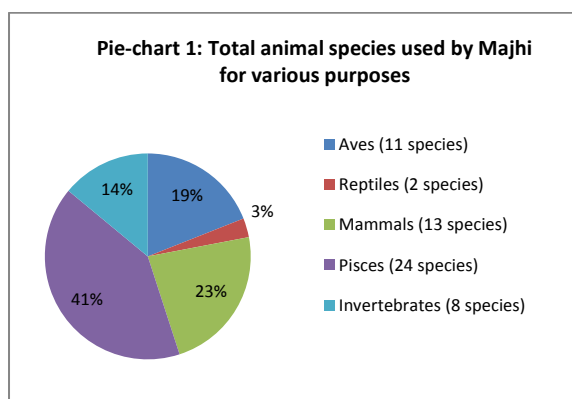
Semi-structured interviews and group discussions were administered in the local languages to collect basic information on the Indigenous Knowledge (IK) on the traditional uses of animals and plant species together with their local names, diseases treated or controlled, parts of animals and plants used, conditions and methods of preparation, part administered, dosage used and major drawbacks. Further, practical observation sessions and guided field walks with key informants were employed to collect voucher specimens of each medicinal animal and medicinal plant species with additional notes. Photographic and video cameras were used for graphic documentation. Most of the interviews were made in the field in order to avoid the risk of confusing identity of animals and plant species by repeated inquiries at least three times with the same and different informants so as to confirm the validity and reliability of the recorded information. Specimens were collected and numbered on the spot, later identified using taxonomic keys in the relevant volumes of the flora and fauna. The identification was finally confirmed by a senior plant and animal taxonomist.

Results and Discussion

Ethnobiology: The research showed 58 animal species and 226 plant species were used by the Majhi for various purposes. Ethnobiology was further categorized into ethnozoology and ethnobotany.

Ethnozoology: Altogether 58 species of wild and domestic animals belonging to 34 families and 24 orders were documented to be used by the Majhi ethnic group. These animals were mostly used for the purpose of meat, eggs, milk, honey, latex, skin, sacrifice etc. They used 48 wild fauna of which 24 species were Pisces, 2 species were reptiles, 8 species were aves, and 7 species were mammals including 7 invertebrate species. They even used 10 domestic faunal species which consists of 6 mammal species, 3 avian species and 1 invertebrate species (pie chart 1).

Ethnobotany: Altogether 226 wild and cultivated floral species belonging to 155 families were documented to be used by Majhi ethnic group for various purposes like staple food, medicine, fodder, timber, thatching, fermented cake, ceremonial etc. Among 226 plant species used by them 2 species belong to pteridophytes, 1 species belong to gymnosperms, 43 plant species belong to monocots and 180 species belong to dicots (Pie chart 2).



Pie-chart 2: Total plant species used by Majhi for various purposes

Medical Ethnobiology

Medical ethnobiology also encompasses 2 fields i.e. medico-ethnozoology and medico-ethnobotany. Medically important animal and plant species used by Majhi are discussed below.

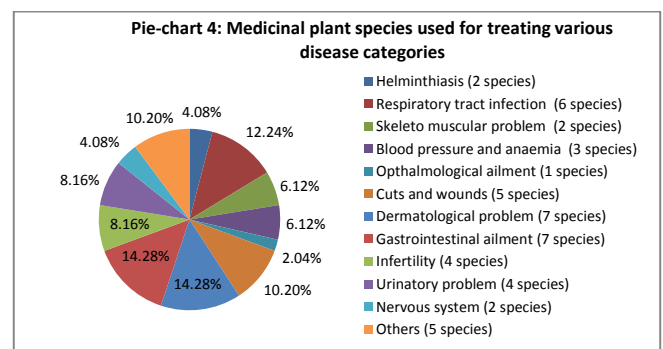
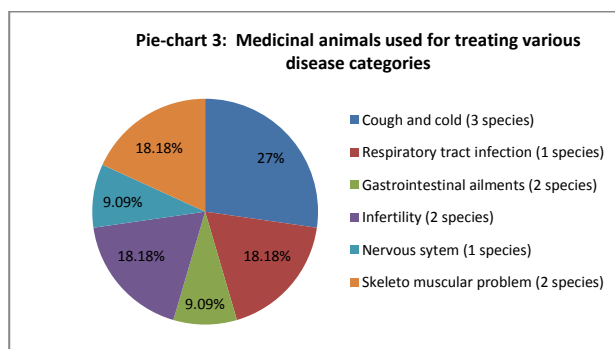
Eleven (11) species of different medicinal animals belonging to 10 orders and 11 families were used to cure 9 diseases. Among 11 species used by them 9 species are wild and 2 species are domestic. Organs used for medicinal purpose are meat, blood, bile juice, eggs, honey, whole body etc (Table 1). Likewise, 49 species of different medicinal plants belonging to 36 families were used to cure 32 various ailments. Among 49 species used by them, 42 species are dicotyledons and 7 species are monocotyledons. Plant parts used by them are roots, leaves, seeds, barks, rhizomes, stems, fruits, tubers etc. (Table 2).

Honey from honey bee (*Apis fluviatilis*) is used in the case of cough and cold. Honey along with Cinnamon powder is used for the purpose of lowering cholesterol in the arteries and reduce the possibility of heart attack (Alves and Rosa, 2008).

Edible crab (*Cancer pagurus*) is used by these people to cure stomach pain and weakness. It is used in treatment of ulcer and constipation (Alves and Rosa, 2008).

They use the rhizome paste of Sweet flag (*Acorus calamus*) with milk, in case of cough which was also taken by Darai of Chitwan (Dangol and Gurung 1999) for the same purpose. It has also been reported to be used in the bronchitis by the Limbus of Morang district (Siwakoti and Siwakoti 1998).

The fruit of Indian goose berry (*Phyllanthus emblica*) is used by the Majhi of Sindhuli district in case of scurvy, bronchitis and juice as tonic and as ingredients of trifala like that of Tharus (Dangol and Gurung 1991). Fruits were also used by Tharus of Bardia for diuretic, cooling, laxative, tonic purposes (Shrestha 1997) and for blood purification (Sapkota 1994).



Serpentine root (*Rauwolfia serpentine*) is another important plant used by the Majhi in various ways. The root paste is applied to the wounds of snake bite and the root juice is taken during fever as well as in case of stomach disorder. It was used by the Tharus of Bardia to control worms, gastric problems and food poisoning (Paudyal 2000).

Large number of animals and plants has been reported to be medically important, but some people even believe that the rituals involving mantras play the main role in the treatment of many ailments, for example- weeping illness in children, sato gayeko (scared), evil spirits etc (Manandhar 1980).

Conclusions

Animals and plants are very important in the study area which is an integral part of their culture. In the study area, these people widely use indigenous knowledge on animals and plants. However, the traditional system and religious beliefs that restrict the manner in which indigenous knowledge should be transferred to others with time, lead to the declining of information on medicinal animals and

plants as revealed by the trend in this study. It was observed that many young people in the study area are less knowledgeable about the variety and value of indigenous medicinal animals and plants. Therefore, documentation of the indigenous knowledge and use of the medicinal animals and plants in the present study area needs to be scaled-up. These days the study area is negatively impacted as a result of agricultural expansion, livestock population pressure and human settlement. Along with the loss of the natural vegetation of the valley we are bound to lose the huge potential of the medicinal plants, animals and the associated knowledge. Therefore, the study area calls for urgent measures to be taken to rehabilitate and conserve the remaining flora and fauna.

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Appendix

Table 1. Animals of Medicinal Importance to the Majhi

S. N.	Animal Species/ Common Local name	Order	Family	Diseases	Animal parts	Administration (Procedure of Use)
1.	<i>Canis aureus</i> (Siyal)	Carnivora	Canidae	Arthritis, Rheumatism	Meat	Alcohol prepared from the meat of ghoral is massaged over affected part.
2.	<i>Nemorhaedus ghoral</i> (Meerga)	Cypriniformes	Cyprinidae	Cold, cough & Impotency	Meat	Roasted meat or cooked meat.
3.	<i>Muntiacus muntjak</i> (Ratuwa)	Artiodactyla	Cervidae	Muscle ache	Meat	Roasted meat or cooked meat.
4.	<i>Funambulus</i> sps. (Lokharke)	Rodentia	Sciuridae	Back pain	Meat	Cooked meat.
5.	<i>Hystrix brachyuran</i> (Dumsi)	Rodentia	Hystridae	Asthma	Bile juice	It is taken with certain foods and honey.
6.	<i>Lepus nigomorpharicollis</i> (Kharayo)	Lagomorpha	Leporidae	Infertility	Blood	Blood of hare is cooked with other food stuffs and given to women who are infertile.
7.	<i>Gallus gallus domesticus</i> (Kukhura)	Galliformes	Phasinidae	Dysentery	Egg	Egg is heated in fire and taken.
8.	<i>Treron</i> sps. (Haleso)	Columbiformes	Columbidae	Cold, general weakness	Whole body	Roasted meat or cooked meat or soup.
9.	<i>Helix</i> species (Ghongi)	Gastropoda	Helicidae	Impotency, Infertility	Body except shell	Cooked with spices and sucked from operculum part.
10.	<i>Cancer pagurus</i> (Gangato)	Decapoda	Cancriidae	Stomach pain, weakness	Whole body	Whole body is burnt and mixed with other spices and consumed.
11.	<i>Apis fluviatilis</i> (Kathauri)	Hymenoptera	Apidae	Cough	Honey	Honey is consumed in the case of cough and cold.

Table 2. Plants of Medicinal Importance to the Majhi

S. N.	Plant Species	Family	Common Local Name	Diseases/ Problems	Parts Used	Administration
1.	<i>Achyranthes bidentata</i>	Amaranthaceae	Datiwan	Fever and pregnancy	root	A spoon of infusion is given twice daily up to vagina for easiness in the delivery.
2.	<i>Altemanthera sessilis</i> De.	Amaranthaceae	Viringiraj	Muscle ache	Leaves	The sap is used in case of muscle ache.
3.	<i>Magnifera indica</i>	Anacardiaceae	Aap	Dysentery, Vomiting	Fruit, seeds	Fruit is consumed in case of vomiting, dysentery
4.	<i>Rauwolfia serpentina</i>	Apocynaceae	Sarpagandha	Urinary problem and wounds	Root and leaf	The juice of root and leaf is consumed by adding honey applied on the wounds.
5.	<i>Acoras calamus L.</i>	Araceae	Bojho	Kidney diseases and insomnia	Rhizome	The rhizome is roasted in the fire and taken with honey used in heart diseases, constipation, stomach pain and
6.	<i>Colocasia antiquorum</i>	Araceae	Karkolo	Dysentery	Whole plant	Used as vegetable to cure dysentery.
7.	<i>Ageratina adinophora</i>	Asteraceae	Banmara	Wound, Skin infection	Leaves	Juice extracted from leaf is used in wound and
8.	<i>Calotropis gigantea</i>	Asclepiadaceae	Aak	Crack in sole and muscle ache	Latex	The latex is used in the crack and twisted body
9.	<i>Impatiens balsamina</i>	Balsaminaceae	Mendhi	Urinary problem	Whole plant	The juice extracted from the leaf is used to cure

10.	Bombax ceiba	Bombaceae	Simal	Cough, bronchitis	Leaf, bark	Juice of leaf and bark is consumed during cough
11.	Brassica cauliflora	Brassicaceae	Phulgobi	Diarrhea, Fever and bacterial infection	Flower bud	Whole flower is consumed as vegetable.
12.	Brassica oleracea	Brassicaceae	Pattagobi	Asthma, fever, cough	Upper leaves	Leave are consumed as vegetables.
13.	Cannabis ativa	Cannabinaceae	Ganja	Insomnia, insanity	Dried leaf, shoot	Leaves and its juice is taken for hallucination a
14.	Cassia fistula	Caesalpiniaceae	Rajbriksha	Rheumatism and burning sensation	Whole plant	Leaves juice is taken during fatigue and burning
15.	<i>Terminalia chebula Retz.</i>	Combretaceae	Harro	Diarrhea,, wounds, jaundice, cough, blood pressure.	Seed	The fruits are used for all the diseases. They are tonic, antiseptic.
16.	Terminalia belerica	Combretaceae	Barro	Diarrhea,, wounds, jaundice, cough, blood pressure.	Seed	The fruits are used for all the diseases. They are tonic, antiseptic.
17.	<i>Artemisia vulgaris L.</i>	Compositae	Titepati	Cough, asthma, cuts, wounds and scabies.	Shoot, leaf	Decoction of leaves is taken to cure asthma and
18.	Helianthus annus	Compositae	Suryamukhi	Blood pressure and lung infection	Seeds	The seed in its powder form is used to cure blo
19.	Ipomea batatas	Convolvulaceae	Sakharkhand	Sexual stimulant and tonic	Root tubers	Root tubers are boiled and taken to boost the in
20.	Lagenaria siceraria	Cucurbitaceae	Lauka	Jaundice, constipation, cooling laxative	Leaves and fruit	Fruit is consumed as vegetable to cure constipa
21.	Rhododendron arborium	Ericaceae	Laligurans	Sore throat	Flower bud	Juice is taken in sore throat and flower is taken
22.	<i>Phyllanthus emblica (L)</i>	Euphorbiaceae	Amala	Scurvy, tonic	Fruit	Fruit is taken during scurvy and also boost up
23.	Tamarindus indica	Fabaceae	Iml	Scurvy and tonic	Bark, fruit	Fruit is taken during scurvy and to boot up the
24.	Zea mays	Gramineae	Makai	Weakness	Fruit	Fruit is taken to get quick energy.
25.	Engelhardtia spicata	Juglandaceae	Mauwa	Skin diseases, burns	Foliage and leaf	The paste is applied to cure skin diseases, tonic
26.	Ocimum tenuiflorum	Lamiaceae	Tusi	Cold, cough, skin infection	Leaf	The leaves are boiled to cure cold and cough, p
27.	Cinnamomum Zeylanicum	Lauraceae	Dalchini	Dyspepsia, dysentery	Bark	Bark is consumed during gastric and constipati
28.	Lindera neesiana	Lauraceae	Siltimur	Stomach ache, sexual weakness	Leaves, fruit	Juice extracted from the leaves and fruit is con
29.	Abrus precatorius	Leguminosae	Ratigedi	Eye infection	Seed	Seed is kept in one corner of the eye to remove
30.	Hibiscus rosa sinensis	Malvaceae	Ghantiphool	Skin infection	Root, fruit	Paste form of root is used to cure dandruff and
31.	Aloe barbadensis	Liliacea	Gheukumari	Weakness, Skin infection	Leaves	Juice made from the leaves is taken in general
32.	Azadirachta indica	Meliaceae	Neem	Toothache, anti helminthes	Seed, leaves	Leaves is boiled and taken in anti helminthes, s
33.	Mimosa pudica	Mimosaceae	Lazzawatijhar	Skin infection	Leaves	Paste is applied in case of skin infection.
34.	Acacia catechu	Mimosaceae	Khayer	Cough, toothache	Bark	The bark is boiled along with black pepper to c
35.	Ficus religiosa	Moraceae	Peepal	Stomachache, constipation	Bark, leaf	The bark and leaf is boiled and is taken by ad
36.	Piper betle	Piperaceae	Paan	Anorexia, tonsillitis	Leaves, root	Leaves are chewed in case of anorexia, root is
37.	Saccharum officinarum	Poaceae	Ukhu	Anemia, tonic	Stem	Stem is consumed in case of general weakness
38.	Aegel marmelous	Rutaceae	Bel	Diarrhea, constipation	Fruit	Fruit is taken in case of diarrhea and constipati
39.	Citrus limon	Rutaceae	Kagati	Vomiting, anorexia	Fruit/ Leaf	The fruit is taken in the case of vomiting and a
40.	Citrus reticulate	Rutaceae	Suntala	General weakness, impotence	Fruit	Fruit is consumed in the case of general weakn
41.	Citrus aurantifolia	Rutaceae	Nimbuwa	Anemia, dyspepsia	Fruit	Fruit is taken in the case of anemia and digesti
42.	Citrus grandis	Rutaceae	Junaar	Cough, asthma, weakness	Fruit	Juice is consumed in the case of cough, weakn
43.	Prunus Persica	Rosaceae	Aaru	Bronchitis, foot & mouth disease in livestock	Leaves, fruit	Fruit and its seed is consumed in the case of br
44.	Picroriza scroflureflora	Scrophulariaceae	Kutki	Stomachache, producing milk in women	Root	The paste of root is applied over nipple for eje
45.	Centalla asiatica	Umbelliferae	Ghortapre	Flu, urinary problem	Leaves	Juice is taken in case of flu and urinary retenti
46.	Urtica dioica	Urticaceae	Sishnu	Sole crack, sprain in the cattle	Fruit	Paste is applied in case of sole crack and sprain
47.	Curcuma domestica	Zingiberaceae	Besar	Mouth infection, cold & cough	Rhizome	It is added in lukewarm water and consumed in
48.	Curcuma longa	Zingiberaceae	Haledo	Cough, cold	Rhizome	It is added in lukewarm water and taken in cas
49.	Zingiber officinale	Zingiberaceae	Aduwa	Cough, cold	Rhizome	It is added in lukewarm water and taken in cas