

Ethnobotany of Bhaktapur Municipality

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Abstract

The indigenous communities have their unique knowledge about plant wealth to use the plant resources to fulfill their different requirements of medicine food, fodder, fuel wood, timber, house hold equipments, rituals, fencing, roof thatching, manure, rope, animal bedding, poison and more. The objective of the study is to analyze and discuss the plants used by the people ethnically in Bhaktapur Municipality. The 213 species of plants with 72 families with some unknown families were identified and documented from Bhaktapur Municipality. Out of them, 154 species of plants were cultivated 48 were wild and 13 were both cultivated and wild. They included 76 species of medicinal plants with their used parts and diseases cured; 73 species were edible; 64 were species ornamental; 70 species with had miscellaneous uses such as fiber, color, fire wood, timber, fencing, roof thatching, spices, vegetable, oil, food, pulse and poisoning are documented in this study. The result showed that the people had good knowledge on different uses of plant resources but this knowledge was gradually declining. So, it was felt necessary to be documented, preserved, promoted and disseminated.

Key words: *Ethnobotany, Conservation, Indigenous Community, Bhaktapur Municipality*

I. Introduction

Nepal is a multiethnic, multilingual and multicultural country. However the detailed survey on the ethnic groups with ethnobotanical perspective in Nepal has not been significantly done yet. The mother tongue statistics of Nepalese people represent 61 different ethnic groups and more than 75 languages are spoken in Nepal. Tharu, Tamang, Newar, Magars, Rai, Gurung, Limbu and Sherpa are the examples of major ethnic groups of Nepal (Aryal, 2009).

In Nepal, the concept of ethnomedicine has been developed since the late 19th century (1885-1901 A.D.) The first book "Chandra-Nigantu" regarding medical plants was published by the Royal Nepal Academy in 1969 (2025 BS). Good information on the ethnobotanical and medical uses of the Nepalese plants can be found in the Chandra Nighantu, the herbal pharmacopeia of medicinal value of plants. This is a hand written herbal encyclopedia including about 840 colour plates, of plants and 90 of animals and over one thousand pages of their explanations (Devkota, 1968).

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There are 399 endemic flowering plants in Nepal of which about 63% are from the High Mountains, 38% from the Mid Hills, and only 5% from the Terai and Siwaliks. Similarly, the central region contains 66% of the total endemic species followed by 32% in western and 29% in eastern region (Bhujju, et.al, 2007). The use of herbal medicine can be traced back to as much as 4000 BC to 1000 BC when the world had Rig-Veda, the oldest treaties so far known in this subject (Baral, 2006).

Though we are entering in the 21st century, 80% of our population dwells in villages and lives a substandard life. Here the health problem is tackled by using herbal medicine prescribed by Vaidya or medical man or woman for the tribal communities (Baral and Kurmi, 2006). Nepal has a rich tradition of folk practice for utilization of wild plants since it is an excellent repository of cultural heritage for diverse ethnic group (Manandhar 1993).

Bhaktapur, the smallest District of Nepal with area of 119 sq.km. with four Municipalities. Bhaktapur Municipality with 10 wards is bordered by Madhyapur Thimi, Suryabinayak and Changunarayan Municipality. Bhaktapur Municipality has 75.35% land used for in agriculture, 16.75% for residential purpose, 5.59% for public use and nominal portion of land is occupied by commercial area, industrial area, institutions, pond, rivers and water bodies. Bhaktapur Municipality has sub tropical climate type with average temperature from 20 to 25. The maximum temperature is 32 and minimum temperature is minus 2. The average rainfall received by Bhaktapur is 1520 mm annually. Therefore, the objective of the study is to analyze and discuss the ethnobotany of Bhaktapur Municipality.

II. Research Methodology

The study was based on primary data collected from field visit by semi structured questionnaire in 10 wards of Bhakapur Municipality. From each wards, 10 to 15 respondents were selected randomly by using the self judgment. While choosing the respondents, it was tried best to include the experts like elders, faith healers, medical persons, teachers and farmers. The experts and traditional healers were searched on the basis of their popularity in the study area. During the collection of primary data the homogenous results were obtained from 105 respondents that included 64 males and 41 females.

The respondents were of different ethnic groups like Newar, Chhetri, Bahun, Tamang, Lama, etc. Most of them were Newars. The people with different 67 surnames were interviewed during the study.

During the study period, the direct and participant observations of different festivals and rituals like Gaijatra, Chottha, Ghantakarna, Satya Narayan Puja, marriage, birthday, Shraddha (Oblation to mane), Bhai tika, Dashain, Bel biwaha, Nagpanchami, Mahashivaratri and many more were

done. Different wild and cultivated plants were directly observed properly to categorize them.

During the questionnaire survey, the perception study was also done to know the level of knowledge about the ethnobotanical plants and their conservation. The perception of different experts, traditional healers, students, farmers and other people toward ethnobotanical plants were studied during the field visit.

III. Results and Discussion

The ethnobotanical information from each field visit was thoroughly analyzed and the incomplete information was checked and reconfirmed in later visits. The information gathered was compiled and a single set of ethnobotanical information was prepared.

The plants used by people were identified by the help of experts and respondents. The unidentified plants were identified with the help of different botanical books, dictionaries of plants (Shrestha, 1998) and compendium of medical plants. Different parts of plants like fruits, flower, leaf and twigs were collected as herbarium or photographs were taken and matched with the photo of plants given in different books and their characteristics were tallied to identify them.

The recorded plants were categorized into different eight sub headings like edible, fodder, medicinal, ceremonial, firewood, ornamental, and timber miscellaneous with their scientific name, Nepali name, Newari name, family and parts of plant used. The plants were further classified into different headings according to their habit, sources of availability and parts used and categorized the plant for analysis.

Bhaktapur Municipality possesses rich ethnological knowledge. Even to this date, the local people have been making use of a large number of plants species for various purposes such as medicine, food, fodder, firewood, timber, ceremonies etc. A total of 213 plant species representing 72 families and some unidentified 72 families have been reported. Both cultivated and non cultivated plant species have been documented.

Different parts of plants are used for different purposes. Same plant parts are used for a number of purposes while some others are used for a single purpose. The numbers of plants are repeated in use with their different parts for different purposes. Whole plants of 98, flower of 35, fruit of 52, leaf of 40, rhizoids of 6, seeds of 19, stem of 20, bark of 10, roots of 18, latex of 2 and tuber of 1 plant are used for different ethnobotanical uses.

Among the reported plants 76 are medicinal, 72 edible, 64 ornamental, 70 ritual, 30 fodder, 24 firewood, and 16 timber. 42 of them are used for miscellaneous purposes. Among these reported

species 42 are tree species, 20 are shrubs, 135 are herbs, 15 are climbers and 1 is fungi. The source of availability of the plants is not same for all. Among the plants reported, 154 species are cultivated by human being, 47 are grown widely and 12 are both cultivated as well as grown widely. They are dominated by the herbs of cultivated source.

From the discussion with traditional healers, a large number of ailment was found to be treated using plant species. A single problem is treated by a number of plant species while a single plant species also treats a number of problems. Traditional healers, who are called Vaidyas, are generally the elder members of the communities. They have knowledge and are respected in the community. Some persons after enchanting the certain mantra can have the soul of God or Goddess called Mata or Ma. It is also believed they cure tough diseases and mental disorders. So even today, many local people also visit them to keep the diseases and other bad omens away from life. Vaidya and Matas are the persons to visit in any kind of illness. Sometimes if the modern medical treatment fails to treat the patients, they seek to visit Vaidya and Matas. Any illness regarding ghosts and spirits is referred to Vaidya and Matas.

Ethnomedication, in most cases, involves certain rituals with spells and charms along with the application of herbal medicines. The knowledge of ethno medicines is transferred from one generation to the next within the same family, generally from father to the eldest son.

A ritual action, locally called as 'phukne', is performed as the primary step in healing all sorts of ailments. While doing this, Vaidays and Mata actually urge the spirits to keep calm and leave the ill person. After finishing this ritual, in most cases, they give the patients something to intake and apply according to the ailment. It was observed that the people considered the rituals to be more important in healing than the herbal application that followed. Although such rituals seem to help the patient psychologically, certain ailments were found to be cured by conducting only rituals involving certain mantras.

Among edible plants, the staple food like rice, wheat and maize are mostly grown here. Some vegetables like Gourd, Cucumber, Cauliflower, Mustard leaf, etc., are grown commercially by the farmers.

Some plants are used for miscellaneous purposes besides medicinal, ritual, food, fodder, timber and firewood. It includes different commercial uses and traditional uses like making mats of straw from wheat (*Triticum aestivum*) and rice (*Oryza sativa*), making mask from the bark of Lahare peepal (*Populus deltoids*), making broom of Amriso (*Thysanolaena maxima*), making Nanglo and Khaicha from Ningalo (*Drepanostachyum intermedium*), making fermented vegetables like gundruk, suku tarkari, pickles, amilo and so on. The seeds of some plants like Mustard, Sunflower are used to make oils.

The stems of plants like Kettuki, wheat, and so on are used to make ropes. Some wildy grown as well as cultivated plants are used to make the green manure which as well as cultivated plants are used to make the green manure which is environment friendly. Some plants like onion (*Allium cepa*), Geranium, Balsam plant, Mustard (*Brassica sp.*), etc. are used in laboratories for the study and their explorations in school and colleges. The reeds also help in waste water treatment. Some wild plants like Ratki rani (*Cestrum nocturnum*) and Reeds (*Phragmites karka*) are ecologically important to balance the ecosystem. Some plants like Ghu kumara (*Aloe vera*), Carrot (*Daucus carota*), Cucumber (*Cucumis sativas*), Rose (*Rosa sinesis*), Jasmine (*Jasminum sp.*), etc. are also used as beauty enhancing material.

IV. Conclusion

The study of ethnobotany in Bhaktapur seems lacking. So, scientific documentation of ethnobotanically important plants is necessary. The use of different ceremonially important plants is unknown to many people of new generation. Due to modernization and conservation of agricultural land into residential land, the plant species are degrading. There is a great danger of losing the ethnically important plants. So, they need conservation. There are many plant species ethnically important. Only staple foods like rice, wheat and maize are mostly grown in Bhaktapur Municipality. The plants species besides edible plants lack commercialization. The cultivation of these plants can conserve them in a large extent for future.

The ethnically important plants are the integral part of the culture and biodiversity. In their absence the culture of different ethnic groups cannot be conserved and biodiversity also gets lost from a place. The plants like Dhancha swon: (*Ozothamnus rosmarinifolius*), Moo swon: (*Origanum majorana*), Lotus (*Nelumbo nucifera*), etc. need special conservation for the future generation. The aroma produced by these plants can be used in healing different diseases. There is possibility of discovering new chemicals which can be of great importance in medicinal field. Therefore further researches are necessary for it.

As the modernization and urbanization are increasing day by day, only few indigenous people of Newar community are engaged in growing and conserving these valuable plants. These people are warned that the people of new generation are unaware of the importance of the medicinal and ceremonial plants. If we are not aware of the necessity of conserving them, these plants may get extinct from our country and from the world. As a consequence, the culture and traditions of Newar can also be affected by it in coming decades.

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Appendix

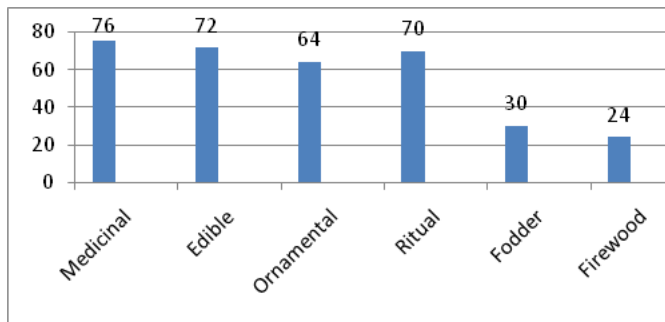


Figure 1: No. of plants with different ethnological uses

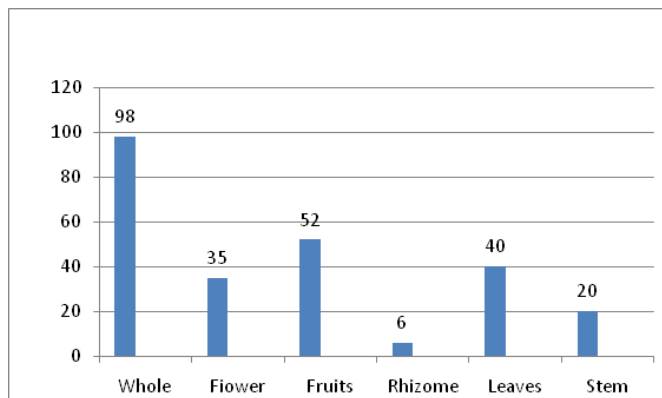


Figure 2: Number of plants with different habit

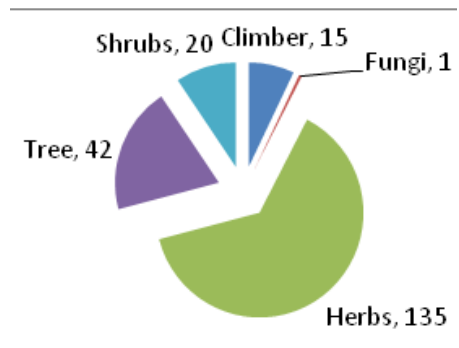


Figure 3: Number of plants with sources of availability

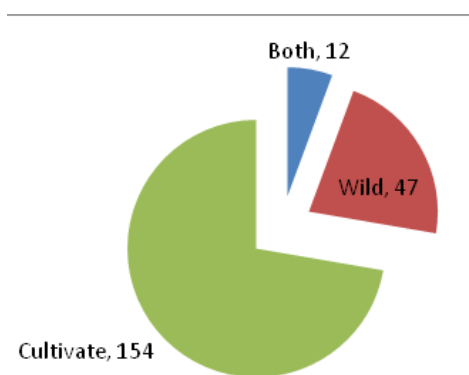


Figure 4: No. of plants with different parts used for ethnobotanical purposes