



A PRELIMINARY SURVEY OF FODDER YIELDING PLANTS OF BHADRAVATI TALUK, KARNATAKA

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Abstract:

An ethnobotanical preliminary survey was conducted in order to document the fodder plants in and around Bhadravathi taluk of Karnataka from January to December 2010. A total of 47 plant species belonging to 27 families were reported from the study area which are sources of fodder to the livestock. Among 27 families Fabaceae is dominant with 8 species. Agriculture along with animal husbandry is the main occupation in the study area. The diversity of fodder plants is a proportion of the enormous biodiversity occurring in this region. The present findings suggest a high scope of the utilization of these natural and cultivated/uncultivated plants for supporting livestock-based livelihood in the studied area.

Key Words: Fodder Plants, Ethno Botany, Live Stock, Bhadravati Taluk

1. Introduction:

Trees and Shrubs provide a supplement of green feed when grasses and other herbaceous material is dry and they provide the only source of protein and energy during drought when all other feed is absent (Lefroy et al., 1992). At the same time trees and shrubs have several disadvantages as sources of feed. They are often inaccessible to grazing animals. They are slow to establish requiring isolation from stock. Their foliage generally has higher fibre and lignin content than grasses (Wilson, 1969), and often has higher levels of tannins and other astringent compounds than shorter lived herbaceous plants. Although sometimes higher in protein, they often have lower energy value than herbaceous plants due to their lower digestibility (Lefroy et al., 1992).

The occupation in this region is agriculture and livestock farming, that acts as a main source of income to farmers and local people. Some household invariably keeps cows, buffalo, sheep and goats for their daily requirements of milk, butter, wool, meat and manure. Although the peoples generally depend upon the resources of forests and cultivated fodder plants and fulfill their fodder requirement from these resources. The present investigation deals with the preliminary survey on fodder plants in and around Bhadravathi taluk, Karnataka that's being used by these local farmers and peoples.

2. Materials and Methods:

Study Area:

Bhadravati is an industrial city and taluk in the Shimoga District of Karnataka state, India It is situated at a distance of about 255 kilometers from the state capital Bengaluru and at about 20 kilometers from the district headquarters, Shimoga("Tourism". Bhadravati City Municipal Council Retrieved 2010-08-01). The town is spread over an area of 67.0536 square kilometres (25.8895 sq mi) and has a population of 151,102 as per the census held in 2011 (<http://www.bhadravathicity.gov.in/>).

Bhadravati lies in the central part of the Karnataka State, in the south-east corner of the Shimoga district. The latitude and longitude coordinates of Bhadravati town are 13.840°N 75.702°E (Google. "Bhadravati" (Map). Google Maps). Bhadravati is at an altitude of 597 metres (1,959 ft) above sea level.

Methods:

The present study is based on the extensive survey of the literature and studies carried out by the authors in the study area. The areas surveyed for fodder yielding plants includes B.R.Project, Tammadihalli, Gonibeedu, Honnetti Hosur, H.K.Junction, Hiriyyur, Malaenahalli and Nellisera. For the collection of Fodder plants and preparation of taxonomic accounts, frequent field visits were made during different months of the year (January to December 2010).

We have been engaged with floristic and ethno botanical studies of these areas. Data on fodder plants was also collected along with other information from the local people and farmers. More so, because live stocks keeping is an important occupation here. The fodder yielding plants have been identified as per the standard literatures (Jain and Rao, 1977). Three seasons are recognized by the rural folks. The rainy season (June-September), winter season (October-January) and summer season (February-May). The major fodder sources are grasses, herbs, shrubs, climbers and trees.

3. Seasons and Changing Landscape:

Rainy season is accompanied by the gradual sprouting of the species from the perennating parts and the landscape is covered by a green carpet of plants. In winter herbs begin drying up and the shrubs and trees are at the climax of foliage. During winter deciduous species begin shedding leaves. New leaves sprout in some plant species. In summer an absence of sufficient moisture are characterized by a virtual absence of annual species (Kulhari and Prabhakar Joshi, 1992). In this season mostly dry fodder is given to the buffalos and cattle (Figure 3).

4. Results and Discussion:

Table 1 depicted list of fodder yielding plants. A total of 47 plant species belonging to 27 families were recorded. Among the 27 families, 18 families are represented by single species and 3 families with 2 species each; 5 families are represented by 3 species each. Fabaceae is the dominant family with 8 species, followed by Moraceae, Poaceae, Malvaceae, Cyperaceae and Amaranthaceae with 3 species each (Figure 1).

Since ancient times, Indians have practiced mixed farming where livestock formed an integral part of agriculture. Rich genetic diversity exists for cultivated and rangeland species including tree, browse species, and herbaceous grasses and legumes. These plants besides many others form an integral part of feed and fodder resources of the country. The country is further endowed with the rich heritage of traditional know-how of raising, maintaining and utilizing forage, feed and livestock resources (Kalloo, 2015).

Apart from fodder value, many of the plants also provide edible fruit, fuel wood, fibre, flowers, buds, vegetables, seeds, bee-forage, etc. Some plants are of crucial ethnobotanical importance and are brought into various uses, such as in curing of certain diseases, religious rituals and cultural rights (Vir Singh et al., 2008).

Singh et al. (1995) and Singh and Bohra (2005) have given a list of 50 fodder trees, shrubs and non-graminaceous herbaceous plants occurring in mountain habitats. These fodder species occur in the agro-forestry systems or in the tree-dominated rangelands. Vir Singh et al. (2008) recorded some 300 species of grasses, other herbaceous plants, trees and shrubs in the mid-altitude rangelands of Uttarakhand (India). In our study we have recorded 47 species of fodder plants.

Heap of dry paddy straw is stored and used as fodder during summer season. Ground nut oil cake, grains are stored in gunny bags and given to the live stock as a feed along with fodder plants.

5. Conservation and Management Perspectives:

The following measures seem appropriate for the conservation and management of fodder resources;

1) Studies on species wise quantum collection, species preference, probability of use and resource use index of the fodder species are needed to identify the species level pressure (Samant et al. 2006). 2) Analysis of fodder species for nutritive value is urgently required for the identification of quality fodder. 3) Identification of biotechnological means to improve germination/ propagation of fodder species need to be investigated/explored. 4) Training on lopping, nursery, propagation and plantation techniques needs to be provided to the local communities 5) Promotion of preferred fodder species in afforestation, reforestation and forest rehabilitation programmes and participation of the local communities need to be ensured (Samant et al., 2007; Samant,2015) .

6. Conclusion:

The present work briefly summarizes local farmers/peoples information on the diversity of fodder plants in and around Bhadravathi taluk of Karnataka. A total of 47 fodder plants belonging to 27 families were recorded which are sources of fodder to the livestock and the family Fabaceae is dominant. A few plants considered good to the live stock and cultivated as fodder have higher feed value. On this basis species of Ficus, Alternanthera, Acacia, Cynodon and grass species can be said as good fodders and it is suggested for further in depth investigation on scientific basis.

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Table 1: List of Fodder plants in the study area

S.No	Name of the Species	Family
1.	<i>Acacia catechu</i>	Mimosaceae
2.	<i>Acacia sp.</i>	Mimosaceae
3.	<i>Ficus benghalensis</i>	Moraceae
4.	<i>Ficus religiosa</i>	Moraceae
5.	<i>Ipomea sp.</i>	Convolvulaceae
6.	<i>Morus alba</i>	Moraceae
7.	<i>Oxalis corniculata</i>	Oxalidaceae
8.	<i>Pongamia pinnata</i>	Fabaceae
9.	<i>Solanum sp.</i>	Solanaceae
10.	<i>Mangifera indica</i>	Anacardiaceae
11.	<i>Phyllanthus sp.</i>	Phyllanthaceae
12.	<i>Phoenix silvestris</i>	Arecaceae
13.	<i>Brassica sp.</i>	Brassicaceae
14.	<i>Zea mays</i>	Poaceae
15.	<i>Polygonum sp.</i>	Polygonaceae
16.	<i>Aegele marmelos</i>	Rutaceae
17.	<i>Butea monosperma</i>	Fabaceae
18.	<i>Dalbergia sisso</i>	Fabaceae
19.	<i>Holarrhaena antidysentrica</i>	Apocyanaceae
20.	<i>Lantana camera</i>	Verbenaceae
21.	<i>Moringa sp.</i>	Moringaceae
22.	<i>Crotalaria sp.</i>	Fabaceae
23.	<i>Cassia fistula</i>	Fabaceae
24.	<i>Cassia occidentalis</i>	Fabaceae
25.	<i>Citrus medica</i>	Rutaceae
26.	<i>Commelina benghalensis</i>	Commelinaceae
27.	<i>Sida acuta</i>	Malvaceae
28.	<i>Musa sp.</i>	Musaceae
29.	<i>Cynodon dactylon</i>	Poaceae
30.	<i>Cyperus rotundus</i>	Cyperaceae
31.	<i>Cyperus iria</i>	Cyperaceae
32.	<i>Cyperus difformis</i>	Cyperaceae
33.	<i>Hibiscus rosa</i>	Malvaceae

34.	<i>Oryza sativa</i>	Poaceae
35.	<i>Abutilon indicum</i>	Malvaceae
36.	<i>Achyranthus aspera</i>	Amaranthaceae
37.	<i>Amaranthus gracilis</i>	Amaranthaceae
38.	<i>Masilea sp.</i>	Marsileaceae
39.	<i>Bauhinia variegata</i>	Fabaceae
40.	<i>Bauhinia purpurea</i>	Fabaceae
41.	<i>Ricinus communis</i>	Euphorbiaceae
42.	<i>Euphorbia tirucalli</i>	Euphorbiaceae
43.	<i>Psidium guajava</i>	Myrtaceae
44.	<i>Momordica charantia</i>	Cucurbitaceae
45.	<i>Alternanthera sessilis</i>	Amaranthaceae
46.	<i>Leucas sp.</i>	Laminaceae
47.	<i>Terminalia chebula</i>	Combretaceae

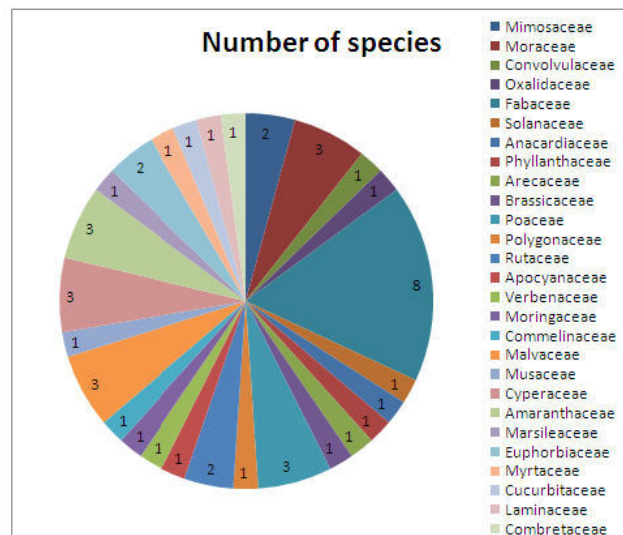


Figure 1: Each family showing number of species of fodder plants



Figure 2: Buffalo grazing grass species



Figure 3: Heap of dry paddy straw used as fodder