

Documentation of Wild Fodder Plants Used By Gujjar and Bakerwal Tribes of District Poonch Ut of Jammu and Kashmir, India

Adil Farooq

Research Scholar BGSBU Rajouri
adilfarooq121@gmail.com

Abstract:

Study area is inhabited mostly by Gujjar and Bakerwal tribes whose chief occupation is rearing of cattle, sheep and goats. These animals obtain their food by grazing in pastures, browsing leaves of shrubs and trees and also young twigs and leaves of trees are lopped for fodder. The present study was carried out with the aim to document the plants used as source of fodder by Gujjar and Bakerwal tribes. A total of 73 species belonging to 61 genera and 34 families were reported. Majority of the plants used as fodder are trees with 33 species which is followed by herbs with 29 species, shrubs 8 species and climber 3 species. Leaves of 41 species are used as fodder and 23 species are used as entire plants and aerial parts of 7 species and young twigs of 4 species are used as fodder.

Keywords: Fodder, Gujjar and Bakerwal, Leaves, Pastures, Twigs

Introduction

Gujjar and Bakerwals constitute the major segment of the population and the main occupation of Gujjar and Bakerwals tribe is to rear animals to get Milk and Meat. These tribes lead a nomadic life style (Singh *et al.*, 2016). The animals reared for milk and meat obtain their Food by grazing in open pastures and forests. Gujjar and Bakerwal being nomadic keep on moving from one place to the other along with sheep, goats and cattle in search of better fodder for them. During summer they migrate to the upper reaches of Sawjian, Loran, surankote, Bufliaz and some even reach Kashmir by crossing Pir Panjal to make their cattle graze in open pastures(Margs) and forests. During winters they return to the low lying areas. Forests beside providing food, fuel, fodder, medicines and material for shelter are also important for keeping the environment clean and balanced (Singh *et al.*, 2016).

Plant used as fodder include entire plant, young twigs, leaves, straw of crop plants, grains, seeds, residues of pulses etc. Major element of fodder is constituted by the grasses and other small plants on which the animals graze in the pastures, trees and shrubs in forests. Leaves and twigs of trees and shrubs are browsed by the livestock. Fodder yielding trees and shrubs differ from place to place and the tree lopped extensively for fodder in one place may not at all be lopped at another place (Rashid and Sharma 2012). Some studies have been made to document the fodder yielding plants in other parts of the country Behari and Prasad (1968), Chandra and Sharma (1976), Chaturvedi (1948), Deb (1978), Drummond (1944), Fotidar (1979), Ganguli *et al.* (1964), Hill (1971), I.A.B. (1947), Kehar & Goswami (1951), Lander & Dharmani (1925), Negi (1977), Patel *et al.* (1958), Ram & Ray (1943), Shabnum (1959), Whyte (1964) , Wilson (1944), Bargava *et al.* (1977), Jayal & Kehar (1962), Joshi & Ludri (1960) and Majumdar & Momin (1960). Kapoor (1989), explored the fodder plants of Ramnagar-Dudu valley of Jammu, Rashid and Sharma (2012), studied fodder plants of Rajouri J&K, Gupta (2014), documented the fodder plants of District Kathua, J&K, but no detailed exploration of fodder plants of District Poonch has been carried out yet. In order to document the fodder yielding plants of the area present study was undertaken.

Study area

Poonch district is located between 33°25' to 34°01' North Latitude and 73° 58' to 74°35' East Longitude. It has mountainous topography and exhibits remarkable altitudinal, topographic and edaphic diversity. It is one the remote and border districts of Jammu and Kashmir as it is bounded by 103 Km long Line of Control (from Tarkundi in Balakote to Sawjian in Mandi) on three sides (North, West and East). Climate and vegetation of the area is sub-tropical, temperate, sub-alpine and alpine. Due to availability of a variety of habitat and ecosystem the area is rich in floral diversity.

Material and Methods

Poonch is a hilly district and has six tehsils viz. Haveli, Surankote, Mandi, Balakote, Mendhar and Mankote. Mostly people prefer to live in villages and practice agriculture and rearing of cattle and these people possess the unique traditional knowledge about the fodder plants. Fifteen respondents from each tehsil were randomly selected for interview. In this way 90 respondents were interviewed face to face for collection of traditional knowledge about fodder yielding plants. Out of 90 respondents 58 were male and 32 were female. Local names of the fodder yielding plants, parts used as fodder and other related information was collected in local language i.e. Gojri and plants were identified with the help of local flora (Sharma and Kachroo, 1981; Singh and Kachroo 1994; Singh *et al.*, 2002).

Results and discussion

Present study documented 73 plant species (**Table 1**) which are used as source of fodder. These species belong to 61 genera and 34 families. Poaceae and Fabaceae being the dominant families with twelve and eleven species of fodder plants respectively followed by Asteraceae, Meliaceae, Moraceae and Rosaceae have 3 species each, Acanthaceae, Brassicaceae, Fagaceae, Mimosaceae, Polygonaceae, Ranunculaceae, Rhamnaceae, Salicaceae, Ulmaceae and Verbinaceae have 2 species each. Out of 73 species 29 are herbs, 8 are shrubs, 3 are climbers and 33 are trees (**Fig. 1**). Different parts of different species are used as fodder. Leaves are the most exploited part as fodder followed by entire plant, aerial parts and young twigs (**Fig. 2**).

It has been observed that beside agriculture locals mostly are dependent upon forest resource to meet out their daily needs. Most of the fodder yielding plants are multipurpose and used for other purposes also like as source of fuel, timber, agricultural tools, wild edible etc. According to the informants the multipurpose fodder yielding plant species particularly trees are under great stress and are declining day by day and because of increasing population, pastures are continuously being converted into agricultural land and as such grazing area has been reduced considerably. Another reason reported for decline in the grazing area is the growth of Jarhi (*Parthenium hysterophorus*) an invasive weed that is spreading rapidly in grass lands and even in forest areas.

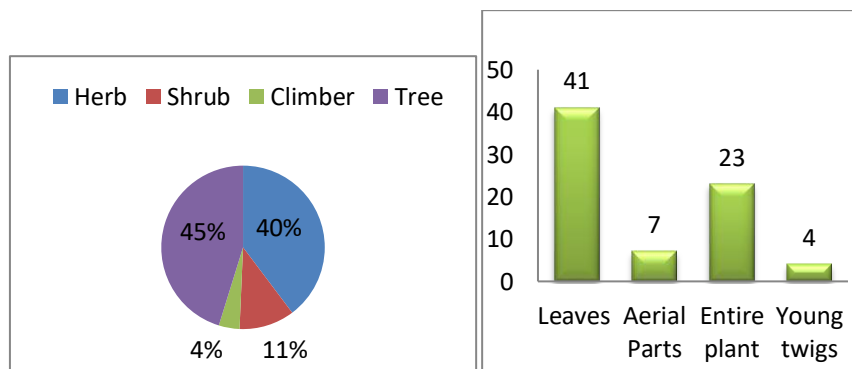


Fig.1 Life forms of plants used as Fodder Fig.2 Part used as Fodder

ISSN 2792-3983 (online), Published under Volume: 1 Issue: 8 in January-2022

Copyright (c) 2021 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY). To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

Table 1: Plants used as source of fodder in study area

S.NO.	Botanical Name	Family	Local Name	Life Form	Part used as fodder
1	<i>Dicliptera bupleuroides</i>	Acanthaceae		Herb	Entire plant
2	<i>Cotinus coggygria</i>	Anacardiaceae	Pahn	Shrub	Leaves browsed by sheep and goats.
3	<i>Pistacia chinensis</i>	Anacardiaceae	Kangarh	Tree	Leaves
4	<i>Carissa opaca</i>	Apocynaceae	Garna	Shrub	Leaves are browsed by sheep and goats.
5	<i>Cryptolepis buchananii</i>	Asclepiadaceae	Dodey behl	Climber	Leaves browsed by sheep and goats
6	<i>Bidens pilosa</i>	Asteraceae	Saryalo	Herb	Aerial parts are browsed by cattle, sheep and goats
7	<i>Galinsoga parviflora</i>	Asteraceae	Piploo	Herb	Entire plant
8	<i>Sonchus arvensis</i>	Asteraceae	Dudoli/ sonchal	Herb	Entire plant
9	<i>Berberis lycium</i>	Berberidaceae	Simbulo	Shrub	Leaves are browsed by sheep and goats.
10	<i>Alnus nitida</i>	Betulaceae	Champ	Tree	Leaves
11	<i>Cordia dichotoma</i>	Boraginaceae	Lasoor	Tree	Leaves
12	<i>Brassica campestris</i>	Brassicaceae	Sarsoon	Herb	Oil cakes from seeds, Aerial plant
13	<i>Capsella bursa-pestoris</i>	Brassicaceae		Herb	Entire plant
14	<i>Chenopodium album</i>	Chenopodiaceae	Bathwa	Herb	Aerial parts
15	<i>Mallotus philippensis</i>	Euphorbiaceae	Kamila	Tree	Leaves
16	<i>Bauhinia variegata</i>	Fabaceae	Kachnar	Tree	Leaves
17	<i>Dalbergia sissoo</i>	Fabaceae	Tali, Shisham	Tree	Leaves
18	<i>Indigofera heterantha</i>	Fabaceae	Kaenthie	Shrub	Leaves and young twigs are browsed by sheep and goats.
19	<i>Indigofera tinctoria</i>	Fabaceae	Neel	Shrub	Aerial parts are browsed by sheep, goats and grazing cattles.
20	<i>Lathyrus aphaca</i>	Fabaceae	Jungli mutter	Herb	Entire plant
21	<i>Medicago lupulina</i>	Fabaceae		Herb	Entire plant

22	<i>Medicago sativa</i>	Fabaceae	Alli palli	Herb	Entire plant
23	<i>Robenia pseudo-acacia</i>	Fabaceae	Kikar	Tree	Leaves
24	<i>Trifolium pratense</i>	Fabaceae	Shatul	Herb	Entire plant
25	<i>Trifolium repens</i>	Fabaceae	Shatul	Herb	Entire plant
26	<i>Trigonella foenum-graecum</i>	Fabaceae	Methi	Herb	Entire plant
27	<i>Quercus floribunda</i>	Fagaceae	Maru	Tree	Young twigs are used as fodder
28	<i>Quercus leucotrichophora</i>	Fagaceae	Rein	Tree	Young twigs are used as fodder
29	<i>Flacourtia indica</i>	Flacourtiaceae		Tree	Leaves
30	<i>Aesculus indica</i>	Hippocastanaceae	Bankhori	Tree	Leaves
31	<i>Isodon rugosus</i>	Lamiaceae		Shrub	Leaves are browsed by sheep and goats
32	<i>Woodfordia fruticosa</i>	Lythraceae		Shrub	Leaves
33	<i>Bombax ceiba</i>	Malvaceae	Semul	Tree	Leaves are used as fodder during scarcity of fodder.
34	<i>Cedrella serrata</i>	Meliaceae	Drovey	Tree	Leaves
35	<i>Cedrella toona</i>	Meliaceae	Toon	Tree	Leaves
36	<i>Melia azadarach</i>	Meliaceae	Dareck	Tree	Leaves
37	<i>Albizia lebbeck</i>	Mimosaceae	Sirin	Tree	Leaves
38	<i>Leucaena leucocephala</i>	Mimosaceae	Nasran	Tree	Leaves
39	<i>Ficus palmata</i>	Moraceae	Phagwara/kemri	Tree	Leaves
40	<i>Ficus carica</i>	Moraceae	Kemri	Tree	Leaves
41	<i>Morus alba</i>	Moraceae	Toot	Tree	Leaves
42	<i>Olea cuspidata</i>	Oleaceae	Kaoo	Tree	Leaves
43	<i>Oxalis corniculata</i>	Oxalidaceae	Peeli Khatti Booti	Herb	Entire plant
44	<i>Alloteropsis cimicina</i>	Poaceae	Kaah	Herb	Entire plant
45	<i>Avena sativa</i>	Poaceae	Kandal	Herb	Aerial parts
46	<i>Capillipedium assimile</i>	Poaceae	Seto kaah	Herb	Entire plant
47	<i>Cenchrus ciliaris</i>	Poaceae	Kaah	Herb	Entire plant
48	<i>Cynodon dactylon</i>	Poaceae	Kaah	Herb	Entire plant
49	<i>Echinochloa colona</i>	Poaceae	Kaah	Herb	Entire plant
50	<i>Panicum antidotale</i>	Poaceae	Kaah	Herb	Entire plant
51	<i>Paspalidium flavidum</i>	Poaceae	Kaah	Herb	Entire plant
52	<i>Setaria glauca</i>	Poaceae	Seto kaah	Herb	Entire plant

53	<i>Setaria viridis</i>	Poaceae	Seto kaah	Herb	Entire plant
54	<i>Triticum aestivum</i>	Poaceae	Kanak	Herb	Aerial parts
55	<i>Zea mays</i>	Poaceae	Mak	Herb	Aerial plant
56	<i>Rumex hastatus</i>	Polygonaceae	Khatimal	Herb	Aerial parts
57	<i>Rumex dentatus</i>	Polygonaceae	Hulla	Herb	Entire plant
58	<i>Portulaca oleracea</i>	Portulacaceae	Kulfa	Herb	Entire plant
59	<i>Clematis buchaniana</i>	Ranunculaceae	Berkalu	Climber	Leaves are browsed in scarcity
60	<i>Clematis gournia</i>	Ranunculaceae	Tootal	Climber	Leaves are browsed by sheep and goats in scarcity
61	<i>Ziziphus mauritiana</i>	Rhamnaceae	Berry	Tree	Leaves
62	<i>Ziziphus oxyphyla</i>	Rhamnaceae	Phitni	Shrub	Leaves are browsed by sheep and goats
63	<i>Prunus domestica</i>	Rosaceae	Plump	Tree	Leaves are lopped for sheep and goats in scarcity
64	<i>Prunus persica</i>	Rosaceae	Aaroo	Tree	Leaves are lopped for sheep and goats in scarcity
65	<i>Pyrus pashia</i>	Rosaceae	Batangi	Tree	Leaves are lopped for sheep and goats in scarcity
66	<i>Salix alba</i>	Salicaceae	Bisa	Tree	Leaves and young twigs
67	<i>Salix tetrasperma</i>	Salicaceae	Bisa	Tree	Leaves and young twigs
68	<i>Ailanthus altissima</i>	Simaroubaceae		Tree	Leaves Young twigs
69	<i>Grewia optiva</i>	Tiliaceae	Dhaman	Tree	Leaves and young twigs
70	<i>Celtis australis</i>	Ulmaceae	Batkerh/Khirk		Leaves
71	<i>Ulmus wallichiana</i>	Ulmaceae	Manu	Tree	Leaves
72	<i>Lantana camara</i>	Verbernaceae		Shrub	Browsed by sheep and goats during scarcity
73	<i>Vitex negundo</i>	Verbernaceae	Bana	Shrub	Leaves are browsed by sheep and goats during scarcity

Conclusion

The present study has been able to document the diversity of plants used as fodder in District Poonch. Overgrazing, lopping of fodder yielding plants and indiscriminate cutting of forest trees for fodder and other purposes has resulted in the decline of some species and as such it is advised to take appropriate steps for establishment of farms of fodder yielding species so that pressure on natural populations can be reduced.

ISSN 2792-3983 (online), Published under Volume: 1 Issue: 8 in January-2022

Copyright (c) 2021 Author (s). This is an open-access article distributed under the terms of Creative Commons Attribution License (CC BY). To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

REFERENCES

1. Behari M. and Prasad R. (1968). Fodder potential of trees. Allahabad Farmer. 42 (4): 245-48.
2. Bhargava B., Katiyar U. C. and Saxena R. P. (1977). A note on the nutritive value of rainy (*Mallotus philippensis*) tree leaves as sole feed for sheep Ind. J Amin. Sci. 47 (9) 594-595.
3. Chaturvedi M. D. (1948). The role of leaf fodder in the United Provinces. U.P. For. Dept. Bull. 19-31
4. Chandra J. P. and Sharma K. C. (1976). Multipurpose tree species for hills: Robina pseudocacia. Sail Cons Digest. 4 (1): 22-25.
5. Deb, D. B. (1978). Economic plants of Tripura State V. Pasture and Fodder. Ind. Forester. 104 (4):275-81.
6. Drummond R.O. (1944). Lopping in the Kumaon Himalaya of United provinces. Ind. For. 70 (12): 401-408.
7. Fotidar A. N. (1979). Some observations on poplars of Jammu and Kashmir State. Proc. Symp. Silviculture Management and Utilization of Poplars. F.R.I. Dehra Dun. 23-37.
8. Ganguli B. N. Kaul R. N. and Nambiat K. T. N. (1964). Preliminary studies on a few top-feed species Jour. Arid zone. 3: 33-37.
9. Imperial Agriculture Bureau (1947). The use and misuse of shrubs and trees as fodder. Joint Publ. No.10. Imp. Bur. Pastures and field crops. Aberys Wyth. 37-46.
10. Jayal M. M. and Kehar N. D. (1962). A study on nutritive value of mulberry (*Morus indica*) tree leaves. Ind. Jour. Dairy Sci. 15 (1): 21-27.
11. Joshi D. C. and Ludri R. S. (1960). The chemical composition and nutritive value of the himalayan tree fodder bhimal (*Grewia oppositifolia Roxb*) Indian Jour. dairy Sci. 13 (2): 68-76.
12. Kapoor, S.K. (1989). Economically useful fodder plants of Ramnagar-Dudu Valley (Jammu Province). J.Econ. and Tax. Botany. Vol.13. No.1.
13. Kehar N. D. and Goswami M. N. D. (1951). Bauhinia variegata leaves as cattle feed. Sci. & Cult. 16(10): 476-477.
14. Lander P. E. and Dharmani L. C. (1925). A new fodder (Solid shisham leaves) for dairy cows. Agric.Res. Inst. Pusa. Bull. 158: 11.
15. Majumdar B. N. and Momin S. A. (1960). Studies on tree leaves as cattle fodder part V. The nutritive value of young gular leaves (*Ficus glomerata*) Ind. Jour. Dairy Sci. 13 (1): 16-19.
16. Negi S. S. (1977). Fodder trees in Himachal Pradesh. India For. 103 (9): 616-22.
17. Patel B. M., Shah B. G. and Mistry V. V. (1958). A study of fodders of Hissar district in the Punjab. Ind. Jour. Agri. Sci., 28 (4): 597-606.
18. Ram C. and Ray S. C. (1943). Tree leaves as cattle fodder II. Digestibility co-efficient and sensitive value of some tree leaves. Ind. Jour. vet. Sci. 13: 191-95.
19. Shabnam S. R. (1959). Vannamahotsava Fodder tree species for Himachal Pradesh. Bir Publisers. 117-125.
20. Singh R. V. (1982). Fodder trees of India. Oxford and IBH Publishing Co., New Delhi.

21. Wilson J. A. (1944). Place of fodder from trees and shrubs in the agricultural and forestry economy of Madras. *Ind. For.* 70 (12): 416-417.
22. Whyte R. B.(1964). The grassland and fodder resources of India. *Ind. Council of Agri. Research*, New Delhi. 553-70.
23. Rashid, A. and Sharma, A. (2012). Exploration of economically important fodder plants of district Rajouri, Jammu and Kashmir state. *International Journal of Life Science and Pharma Research.* 2: 144-148.
24. Singh T., Singh A. and Dangwal L.R. (2016). Impact of overgrazing and documentation of wild fodder plants used by Gujjar and Bakerwal tribes of District Rajouri (J&K) India. *Journal of applied and natural Science.* 8(2): 804-811.
25. Gupta S.K. (2014). Fodder trees of District Kathua (J&K). *Global Journal of Biology, Agriculture & Heath Sciences.* 3(3): 171-177
26. Sharma, B.M. and Kachroo, P. (1981). *Flora of Jammu and Plants of neighbourhood.* Bishen Singh and Mahendra Pal Singh Publication, DehraDun.
27. Singh, J.B., Kachroo, P. (1994). *Forest Flora of Pir Panjal Range (North Western Himalaya).* Bishen Singh Mahendera Pal Singh, Dehradun, India.
28. Singh, N. P., Singh, D. K., and Uniyal, B.P. (2002). *Flora of Jammu and Kashmir.* Bot. Survey of India, Calcutta