

## **ETHNOBOTANICAL RELEVANCE OF THE WEED FLORA OF TALL DARDYAL, TEHSIL KABAL, DISTRICT SWAT, PAKISTAN**

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### **ABSTRACT**

*The current study was conducted with the aim of evaluating the weed flora of Tall Dardyal with special reference to ethnobotany. A total of 200 plant species belonging to 72 families and 164 genera were collected in three seasons (spring, summer and winter) in 2013-2015. Since majority of the indigenous people live below the poverty line, and they do not have access to modern resources, therefore they still rely on plant resources for their diverse life needs. They use wild plants as fodder and forages because one of their sources of income is rearing livestock. Most of the people inhabiting the upper hills sites use plants for thatching and construction purposes. They make agricultural tools from various plants as most people of the area are farmers. Poor economic conditions have compelled the locals to use wild as well as cultivated plants as vegetables. Wild medicinal plants are characteristically abundant in the area where they are used as indigenous medicines for treatment of various ailments. The present survey attempts to highlight the indigenous uses of the wild plant resources. The investigation would also provide some useful insights into the study of Weed Science.*

**Key words:** Weed flora, Ethnobotany, Tall Dardyal, Swat, Khyber Pakhtunkhwa.

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### **INTRODUCTION**

The research area, Tall Dardyal, is located in Tehsil Kabal, District Swat. It is one of the northern districts of Khyber Pakhtunkhwa and is called the Switzerland of Pakistan because of its natural beauty. Mingora is the district headquarter of Swat. The District Swat, a predominantly rural area, is divided into two sub divisions i.e. upper Swat and lower Swat. Tehsil Kabal, located in the north of Mingora (Lower Swat), lies between 34° 47' 27.142" N latitude and 72° 17' 1.007" E longitude at an elevation of 923 m above sea level. It is divided into 12 union councils:

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Bara Bandai, Koza Bandai, Hazara (Ali Gram), Koz Abakhel, Bar Abakhel, Tutano Bandai, Qalagai, Kala Kali, Deolai, Shah Derai, Kanju and Tall. The research area Tall Dardyal is located at 30 km distance from Mingora and 20 km from main Tehsil Kabal headquarter and lies 34° 56' 9.867" N latitude and 72° 12' 25.741" E longitude at an average elevation from 1200 to 2800 m ASL. Tall Dardyal, presenting somewhat W-shaped look, is a defacto hilly area surrounded by hills series of varied aspects and elevations from east, west and north whereas the southern part is an open area facing river Swat. Climatically, the research area falls in the sub-tropical and moist temperate zone with four distinct seasons. Winter season is long and harsh. Snowfall frequently happens in December and January at high altitude sites of the study area i.e. Doop, Goda, Manai, Saland, Dardyal, Mian Bela top. While summer is short and mild.

Ethnobotany investigates multifacet association between plant and human ethnicity (Choudhary *et al.*, 2008). It plays vital role in perceptive dynamic interaction between natural diversity and communal and cultural systems (Hussain *et al.*, 2008; Mahmood *et al.*, 2011c). In general, ethnobotany is the logical investigations of plants since used in native culture for foodstuff, medicines, rituals, construction, dwelling-hold tools, melodic instruments, shelter, fuel, pesticides, wears, and other purposes (Kelbassa *et al.*, 2004; Kumbi, 2007; Ugulu, 2011; Sargin *et al.*, 2013a).

Since the human history, plants are used by man. In earlier ages, plants were only used for food, shelter and medicines, so the record of ethnobotany is as ancient as human culture but with the course of time, human dependency on plants increased, they explored plants potential for multiple purposes. The human history narration would be imperfect and partial without the plants (Qureshi *et al.*, 2009). Ethnobotany projects an important tool to study and draw attention of indigenous culture about the natural plant resources and their supervision and management. The exploration of cultural values of plants have vital role in farming, modern medicines and pharmaceutical industry (Cox, 2000). Wild plants always have gained attention due to their potential value of human well being (Ali *et al.*, 2003; Ali, 2003). Since time immemorial, a variety of medicinal plants have been in human use (Lama *et al.*, 2001; Partel *et al.*, 2005).

Today, Botany discipline is the outcome of many years efforts and development in flora for their curative asset. In turn, Botany, originated from concern in discovery of plants to assist fight health related infirmity. Botany and drugs had at all times very close tie.

Throughout the world, since ancient times ethnic medicines are considered a valuable source of disease remedy to maintain good health. Natural plant resources play a vital and effective role in traditional

herbal therapy as well as in the economic elevation of local community (Everest and Ozturk, 2005, Joshi and Joshi, 2006). Medicinal plants used in traditional herbal medicines and pharmaceutical system have played pivotal role in highlighting human needs and necessities. Medicinal flora has great impacts on pharmaceuticals due to intense demand of herbal medicines and the extinction of natural flora (Zaidi and Crow 2005, Thirumalai *et al.*, 2010). According to Govaerts (2001), approximately 422,000 flowering plants have been reported across the globe, Out of these 50,000 to 70,000 medicinal plants are being practiced in traditional and modern health care system (Schippmann *et al.*, 2006). The lack of medical facilities and low income resources in rural communities encourage the utilization of indigenous wild plants for livelihood (Murray *et al.*, 2001). In rural areas of the developing countries, plants besides being integral component of their historical and cultural heritage have also been used as herbal therapy for the treatment of diverse human illnesses (Sofowora, 1982; Jamal *et al.*, 2012; Iyama and Idu, 2015). Due to lack of medical facilities and low income resources rural area people mostly depend on natural resources for their livelihood. In Pakistan, about 80 % is rural population which depends on ostensibly accessible traditional medicines for basic health care needs (Hocking, 1958; Kayani *et al.*, 2014). The areas where plants are still used for herbal therapy may be the source of rich ethnobotanical knowledge (Diallo *et al.*, 1999). This precious treasure of knowledge needs to be utilized and preserved for sustainable development of future generation.

## **MATERIALS AND METHODS**

The floristic study of Tall Dardyal hills was carried out in spring, summer and winter seasons of 2013-2015. Plants were collected thoroughly from the whole area. They were properly dried, mounted on herbarium sheets and were identified by Prof. Mehbob Ur Rehman, plant taxonomist at Govt Degree College Matta, Swat and then confirmed by Flora of Pakistan-Tropicos (<http://www.tropicos.org/Project/Pakistan>) and The Plant List: A working list of all plant species (<http://www.theplantlist.org>). All identified plant species were submitted to the herbarium, Department of Botany, Islamia College Peshawar. A comprehensive ethnobotanical data was documented from different sites of the research area. To get first hand information about the indigenous uses of weed flora, a total of 113 local key informants were interviewed including 75 males, 27 females, and 11 shepherds. The local residents still rely on plant resources for a variety of needs such as food, fodder, house construction, fencing, agriculture tools making and health care etc. Groups meeting and open ended interviews were arranged in Dera/hujra (social gathering place of males) which helped in spotlighting

the various important issues and dimensions of the local people regarding natural plant resources. They were asked about the vernacular names, occurrence, parts used and mode of administration of plants. Most of the male interviewees were farmers. Females were interviewed while collecting plants for their daily use. They were mostly old housewives. Shepherds were interviewed while they were grazing their goats and sheeps on hills. The informants were interviewed in their local language, Pashto. They were photographed along with the collected plants species for providing due help in the identification of plants.

## **RESULTS AND DISCUSSION**

A total of 200 wild plant species was recorded from the research area which was used by the local inhabitants for various livelihoods. Out of them 116 (58 %) species were used as fodder/forage; 67 (33.5 %) species for fuel purpose; 66 (33 %) species as medicinal plants; 14 (07 %) as vegetables; 11(5.5%) species for thatching purpose. Timber wood and fencing species were 08 (04%) each. Fence species were cultivated around the fields for protection against the grazing herbivores. Six (03 %) species were used for making agricultural tools and 05 (2.5 %) species each for making furniture and brooms. Wild plant species (05 spp., 2.5 %) which grows on roadsides adds beauty to the area. Four (02 %) poisonous plant species were e.g. *Datura stramonium* *Euphorbia helioscopia*, *Persicaria maculosa* and *Urtica dioica*. *P. maculosa* was crushed in fresh form and then thrown in water body for checking fish. Due to its poisonous nature, fish come to the surface of water. Three plant species (1.5 %) were swarmed by honey bees which add to the production of honey. Dish washing and herbal tea plants species (each 2 spp., 0.1 %) were also found. *Origanum vulgare* was used by the indigenes as a detergent for washing dairy dishes. Condiment/spice and milk curding plant species (01 each spp., 0.5 %) were also used by the local inhabitants. The summary of economic use classes of weed flora is presented in Table-2.

The area under investigation is characteristically a remote rural area inhabited by people whose chief traditional activity was rearing livestock. The indigenes obtain milk, yogurt and butter for dietary purpose. They used grass, herbs, shrubs and trees (leaves) as fodder 116 (58 %) species in fresh form. The people also collected a great deal of grass in summer season, store it at home and then used it as dry fodder in winter when an alternate source of fodder was not available in the field. The current study agrees with the findings of Amjad *et al.* (2013) who evaluated the fodder and forage species (35%) as the major bulk of grass was used as fodder and forage from Nikyal, Kotli, Kashmir and Sher *et al.* (2011, 2014) who reported 33% and 31% fodder plant species used in Chagharzai, Ashezai and Salarzai valleys, Buner

respectively. Bahru *et al.* (2014) documented fodder/forage plants from Awash National Park, Ethiopia, used by the Afar and Oromo nations. Ahmed *et al.* (2013) reported fodder/forage plant species (27.93%) used in Patriata, Pakistan. Joshi and Joshi (2003) categorized fodder and forage plant species from hilly areas of Nepal. It is safe to conclude that fodder and forage plant species are used universally in all parts of the world and they have a significant impacts on the livestock economy of an area. *Rumex hastatus* was used as a wild vegetable while *Mentha longifolia*, *Origanum vulgare* and *Zanthoxylum armatum* were used as spices and powdered drugs in Chail valley, Swat (Ahmad *et al.*, 2014). His investigation corresponds to the present finding. The status of wild plants in every time and area has always been the subject of high concern. The poor economic status has forced the inhabitants of the research area to use plants as the source of fuel like the people of Salarzai and Salarzai valleys (Sher *et al.*, 2014), Central Punjab (Zereen and Khan, 2012), Neelum valley Kashmir (Mahmood *et al.*, 2011c), Chitral Gol National Park (Khan *et al.*, 2011), Kotli, Azad Jammu and Kashmir (Ajaib *et al.*, 2010), Ranyal hills, Shangla (Ibrar *et al.*, 2007) and Chikar areas Muzafarabad (Saghir *et al.*, 2001).

Besides the fodder and forage plant species, other potential plant species e.g. timber wood yielding, furniture, agriculture tool and broom making, ornamental, fencing/hedge, herbal tea, dish washing, condiment/spice, poisonous plants, honey bee attracting plant species that contributes to honey production and milk curding plant species were also found in the area. The weed flora of Tall Dardyal hills contribute to the ethnobotanic wealth of Pakistan in particular and to the world in general. The ethnic people possess rich knowledge of ethnobotanically important weedy plants of the area. The study reflects a distinct life style of ethnic groups and different economic uses of the mentioned plants. The present findings is supported by the analyses undertaken by Afzal *et al.* (2009), Ali and Qaiser (2009), Ahmad *et al.* (2013, 2014), Ahmed *et al.* (2013), Ilyas *et al.* (2013), Nasrullah *et al.* (2012), Wariss *et al.* (2014) and Hassan *et al.* (2015).

## CONCLUSION

The current study concluded that the research area is rich in wild flora and the local community has a diverse knowledge about the use of plants of the target area. Due to the lack of knowledge and unscientific collection methods, particularly medicinal plants are getting depleted from the area. It is direly needed to encourage the indigenous people to cultivate the threatened natural flora. This study may provide valuable information on the sustainable use and conservation of natural plants resources of the area studied.

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61.	<i>Xanthium strumarium</i> L.	Geshay	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
18. Balsaminaceae																			
62.	<i>Impatiens bicolor</i> Royle	Atrang	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
19. Berberidaceae																			
63.	<i>Berberis lycium</i> Royle	Kwaray	-	-	+	-	+	+	-	-	-	+	-	-	-	-	-	-	-
20. Betulaceae																			
64.	<i>Alnus nitida</i> (Spach) Endl.	Geray	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-
21. Brassicaceae																			
65.	<i>Alliaria petiolata</i> (M.Bieb.) Cavara & Grande	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
66.	<i>Arabidopsis thaliana</i> (L.) Heynh.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
67.	<i>Capsella bursa-pastoris</i> (L.) Medik.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
68.	<i>Cardamine hirsuta</i> L.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
69.	<i>Lepidium apetalum</i> Willd.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
70.	<i>Nasturtium officinale</i> R.Br.	Talmera	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
71.	<i>Rorippa islandica</i> (Oeder) Borbas	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
72.	<i>Thlaspi arvense</i> L.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
73.	<i>Turritis glabra</i> L.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
22. Buxaceae																			
74.	<i>Buxus wallichiana</i> Baill.	Shamshad	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
75.	<i>Sarcococca saligna</i> Mull.Arg.	Bekar	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
23. Cannabanaceae																			
76.	<i>Cannabis sativa</i> L.	Bang	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
24. Caprifoliaceae																			
77.	<i>Viburnum cotinifolium</i> D. Don	Shanglu	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
78.	<i>V. grandiflorum</i> Wall. ex DC.	Gaz mewa	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
25. Caryophyllaceae																			
79.	<i>Cerastium fontanum</i> Baumg.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
80.	<i>Sagina apetalata</i> Ard.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
81.	<i>Vaccaria hispanica</i> (Mill.) Rauschert	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
82.	<i>Silene conoidea</i> L.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
83.	<i>Stellaria media</i> (L.) Vill.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
26. Celasteraceae																			





44. Myrsinaceae																		
126.	<i>Myrsine africana</i> L.	Manro gaya	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
45. Nyctaginaceae																		
127.	<i>Mirabilis jalapa</i> L.	Tora Panra	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
46. Oleaceae																		
128.	<i>Fraxinus excelsior</i> L.	Unknown	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
129.	<i>Olea ferruginea</i> Wall. ex Aitch.	Khona	-	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-
47. Onagraceae																		
130.	<i>Oenothera speciosa</i> Nutt.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
48. Oxalidaceae																		
131.	<i>Oxalis corniculata</i> L.	Zamkeytarok a	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
49. Paeoniaceae																		
132.	<i>Paeonia emodi</i> Royle	Mamekh/War d	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
50. Papillionaceae																		
133.	<i>Astragalus grahamianus</i> Benth.	Kechpach	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
134.	<i>Caesalpinia decapetala</i> (Roth) Alston	Bar botay	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
135.	<i>Desmodium elegans</i> DC.	Jamkaat	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-	-
136.	<i>Indigofera heterantha</i> Brandis	Goreja	-	+	-	-	+	+	-	-	-	+	-	-	-	-	-	-
137.	<i>Lathyrus aphaca</i> L.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
138.	<i>L. sphaericus</i> Retz.	Pesho kolma	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
139.	<i>Lens culinaris</i> Medik.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
140.	<i>Lespedeza juncea</i> (L.f.) Pers.	Jalan	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
141.	<i>Lotus corniculatus</i> L.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
142.	<i>Medicago lupulina</i> L.	Peshtaray	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
143.	<i>M. monantha</i> (C.A.Mey.) Trautv.	Peshtaray	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
144.	<i>Oxytropis chiliophylla</i> Benth.	Unknown	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
145.	<i>Robinia pseudoacacia</i> L.	Kekar	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
146.	<i>Trifolium repens</i> L.	Chapatra	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
147.	<i>Vicia monantha</i> Retz.	Margy khapa	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
51. Passifloraeae																		
148.	<i>Passiflora coerulea</i> L.	Unknown	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
52. Philadelphaceae																		



170.	<i>C. nummularius</i> Fisch. & C.A.Mey.	Naray kharawa	+	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-
171.	<i>Crataegus songarica</i> K. Koch	Taampasa	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
172.	<i>Fragaria vesca</i> L.	Shatkarey	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
173.	<i>Prunus cerasoides</i> Buch.-Ham. ex D.Don	Annang	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
174.	<i>P. cornuta</i> (Wall.ex Royle) Steud.	Changa	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-	-	-
175.	<i>Pyrus pashia</i> Buch.-Ham. ex D.Don	Tangai	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
176.	<i>Rosa canina</i> L.	Zangali gulab	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
177.	<i>R. moschata</i> Herm.	Qurach	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
178.	<i>Rubus fruticosus</i> L.	Karwara	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-
179.	<i>R. sanctus</i> Schreb.	Baganra	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-
180.	<i>Spiraea canescens</i> D. Don	Soor karachay	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
61. Rutaceae																			
181.	<i>Zanthoxylum armatum</i> DC.	Dambara	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
62. Salicaceae																			
182.	<i>Salix flabellaris</i> Andersson	Zangali karwala	+	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-
63. Sapindaceae																			
183.	<i>Aesculus indica</i> (Wall. ex Cambess.) Hook.	Jawaz	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-	-	-
184.	<i>Dodonaea viscosa</i> (L.) Jacq.	Ghwaraskai	-	+	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-
64. Scrophulariaceae																			
185.	<i>Scrophularia nodosa</i> L.	Zagzagai	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
186.	<i>Verbascum thapsus</i> L.	Khargwag	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
187.	<i>Veronica polita</i> Fr.	Mekhakai	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
65. Smilacaceae																			
188.	<i>Smilax elegans</i> Wall. ex Kunth	Zela	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
66. Solanaceae																			

189.	<i>Datura stramonium</i> L.	Harhanda	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-
190.	<i>Solanum americanum</i> Mill.	Kachmacho	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
191.	<i>S. pseudocapsicum</i> L.	Unknown	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
67. Thymelaceae																		
192.	<i>Daphne mucronata</i> Royle	Legonay	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
193.	<i>Wikstroemia canescens</i> Wall. ex Meisn.	Katanr	-	+	-	-	-	+	-	-	-	-	+	-	-	-	-	-
68. Ulmaceae																		
194.	<i>Celtis australis</i> L.	Tor tagah	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
195.	<i>C. caucasica</i> Willd.	Zer tagah	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
69. Urticaceae																		
196.	<i>Debregeasia saeneb</i> (Forssk.) Hepper & J.R.I.Wood	Ajlai	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
197.	<i>Urtica dioica</i> L.	Jalbhang	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
70. Valarianaceae																		
198.	<i>Valeriana jatamansi</i> Jones	Banafsha	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
71. Verbenaceae																		
199.	<i>Vitex negundo</i> L.	Marwandai	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-
72. Violaceae																		
200.	<i>Viola canescens</i> Wall.	Banafsha	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-

**Key:** 1. Agricultural tool 2. Broom making 3. Fencing/hedge 4. Poisonous plants 5. Fodder/forage 6. Fuel wood 7. Furniture making 8. Herbal tea 9. Honey bee species 10. Medicinal 11. Milk curding 12. Ornamental 13. Thatching 14. Timber wood 15. Dish washing 16. Vegetables 17. Condiment/spice



**Table-2.** Summary of economic use classes of weed flora of Tall Dardyal hills, Tehsil Kabal, District Swat, Pakistan.

S.No.	Economic Use Classes	No. of Species	Percentage
1.	Fodder/Forage	116	58
2.	Fuel Wood	67	33.5
3.	Medicinal	66	33
4.	Vegetables	14	7
5.	Thatching	11	5.5
6.	Timber wood	8	4
7.	Fencing/hedge	8	4
8.	Agricultural tool	6	3
9.	Furniture making	5	2.5
10.	Broom making	5	2.5
11.	Ornamental	5	2.5
12.	Poisonous plants	4	2
13.	Honey bee species	3	1.5
14.	Herbal tea	2	1
15.	Dish washing	2	1
16.	Milk curding	1	0.5
17.	Condiment/Spice	1	0.5

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