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Preliminary Checklist of Upper Tanawal, District Mansehra, KP, Pakistan

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ABSTRACT

Field surveys were carried out to explore the plants diversity of Upper Tanawal, District Mansehra in different seasons during 2013-14. A total of 246 species belonging to 85 families were recorded from the Upper Tanawal, District Mansehra. In which herbaceous growth form dominates the study area with 160 species, followed by trees with 52 species and trees with 34 species. Among all 85 families, Asteraceae was found to be the most dominant family with 23 plant species, followed by Rosaceae with 15 species, Lamiaceae with 12 species, Poaceae with 11 species, Fabaceae with 10 species, Brassicaceae, Euphorbiaceae, Moraceae and Polygonaceae with 7 species each, Leguminosae with 6 species. However, remaining 75 families had less than 6 species each. This study shows the complete floristic scenario that may be important as reference work for future ethnobotanical, ecological and conservational studies.

KEYWORDS: Floristic checklist, Phanerogamic plants diversity, Upper Tanawal, Mansehra, Pakistan

INTRODUCTION

Biological diversity means the variability among living organism from all sources including inter terrestrial, marine and aquatic ecosystem and ecological complexes of which they are a part; this include diversity within species between species and ecosystem. It is the term given to the variety of life on the earth, it is the variety within and between all species of plant, animal and microorganism and the ecosystem within which the live and interact. Biodiversity comprises all the millions of different species that live on our planet [1].
Pakistan is rich in floristic diversity due to diverse climate [2]. Approximately, 6000 flowering plants species so far have been reported from Pakistan [3]. Floristic study of any given area helps to evaluate the plant wealth and its potential values [4].

MATERIAL AND METHODS

For field work was carried out in various representative localities of the study area in flowering and fruiting session from early month 2013 to end of month, 2014. Main locality, sub locality, habit, habitat, abundance, altitude, ecological zone etc. The collected plant specimen serially tagged and properly pressed. For draying and pressing old newspapers, blotters and corrugated sheet were used. The collected material was identified with the help of the Flora of Pakistan [5-8]. Identified plant specimens were submitted for voucher numbers in the Herbarium of Hazara University, Mansehra, Pakistan (HUP).

RESULTS AND DISCUSSION

A total of 246 plant species belonging to 85 families were recorded from study area. Out of which 81% plant species belong to angiosperms, 3 species belong to Pteridophytes and 1% species belong to gymnosperms (Fig. 1). Herbaceous growth form dominates the study area with 160 plant species, followed by trees with 52 plant species and 34 shrubs (Fig. 2 and Table 2). Our findings are congruent with many researchers of allied, neighboring and national regions [9-14] .

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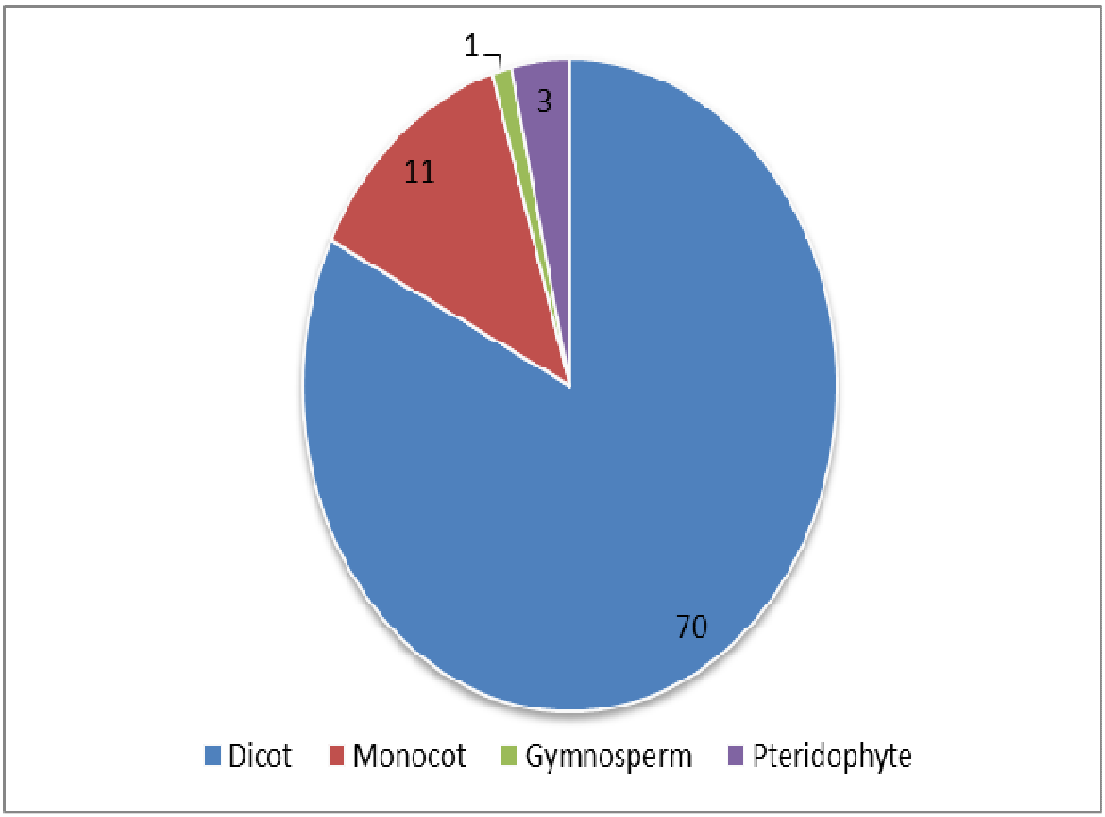

Figure 1: Division of the plant species recorded from the study area.

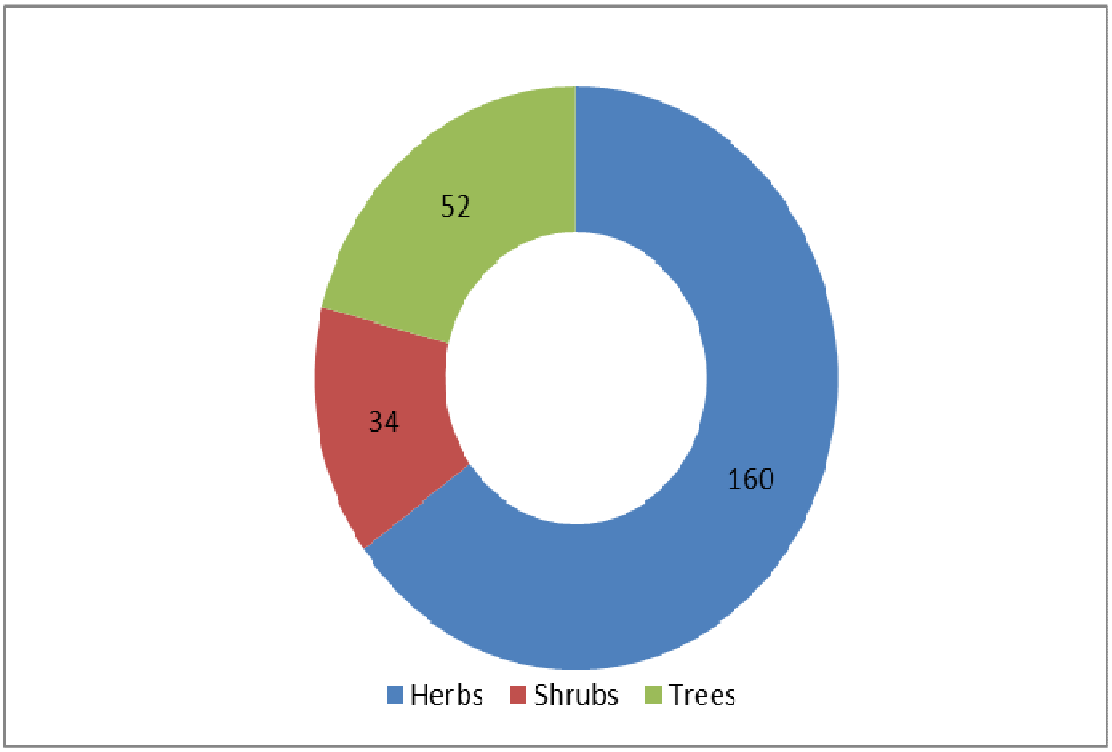

Figure 2: Habitat-wise graphical representation species diversity of in the study area.

Among all 85 families, Asteraceae was found to be the most dominant family with 23 plant species, followed by Rosaceae with 15 species (Table 1). Agreed findings were reported by many researchers such as Iqbal et al. [15] and Ijaz et al. [16] reported Asteraceae as the most leading family from Malakand and Abbottabad respectively while A.U. Rahman et al. [17] mentioned Poaceae as the most dominant family from Swat. However, Rosaceae was followed by Lamiaceae with 12 species, Poaceae with 11 species, Fabaceae with 10 species, Brassicaceae, Euphorbiaceae, Moraceae and Polygonaceae with 7 species each, Leguminosae with 6 species, Amaranthaceae and Rannunculaceae with 5 species. Apiaceae, Cyperaceae, Malvaceae, Pinaceae, Salicaceae and Solanaceae had 4 species each. Acanthaceae, Apocynaceae, Boraginaceae, Caprifolliaceae, Convolvulaceae, Plantaginaceae, Pteridaceae, Rhamnaceae, Sapindaceae and Urticaceae had 3 species each. Asparagaceae, Betulaceae, Cannabinaceae, Colchicaceae, Cucurbitaceae, Dryopteridaceae, Fagaceae, Geraniaceae, Iridaceae, Liliaceae, Lythraceae, Menispermaceae, Oleaceae, Onagraceae, Papaveraceae, Papilionaceae, Primulaceae, Rubiaceae, Saxifragaceae and Verbenaceae had 2 species each. Furthermore, remaining 37 families Acoraceae, Adoxaceae, Amaryllidaceae, Anacardiaceae, Araceae, Asclepiadaceae, Aspleniaceae, Balsaminaceae, Berberidaceae, Bignoniaceae, Buxaceae, Caricaceae, Chenopodiaceae, Commelinaceae, Cuscutaceae, Dennstaedtiaceae, Ebenaceae, Elaeagnaceae, Ericaceae, Hemerocallidaceae, Hypericaceae, Iridaceae, Juglandaceae, Meliaceae, Mimosaceae, Myrtaceae, Nyctaginaceae, Oxalidaceae, Phyllanthaceae, Platanaceae, Portulaceae, Rutaceae, Scrophulariaceae, Simaroubaceae, Typhaceae, Ulmaceae, Xanthorrhoeaceae, Zygophyllaceae had 1 species each (Table 1 and Fig. 3).

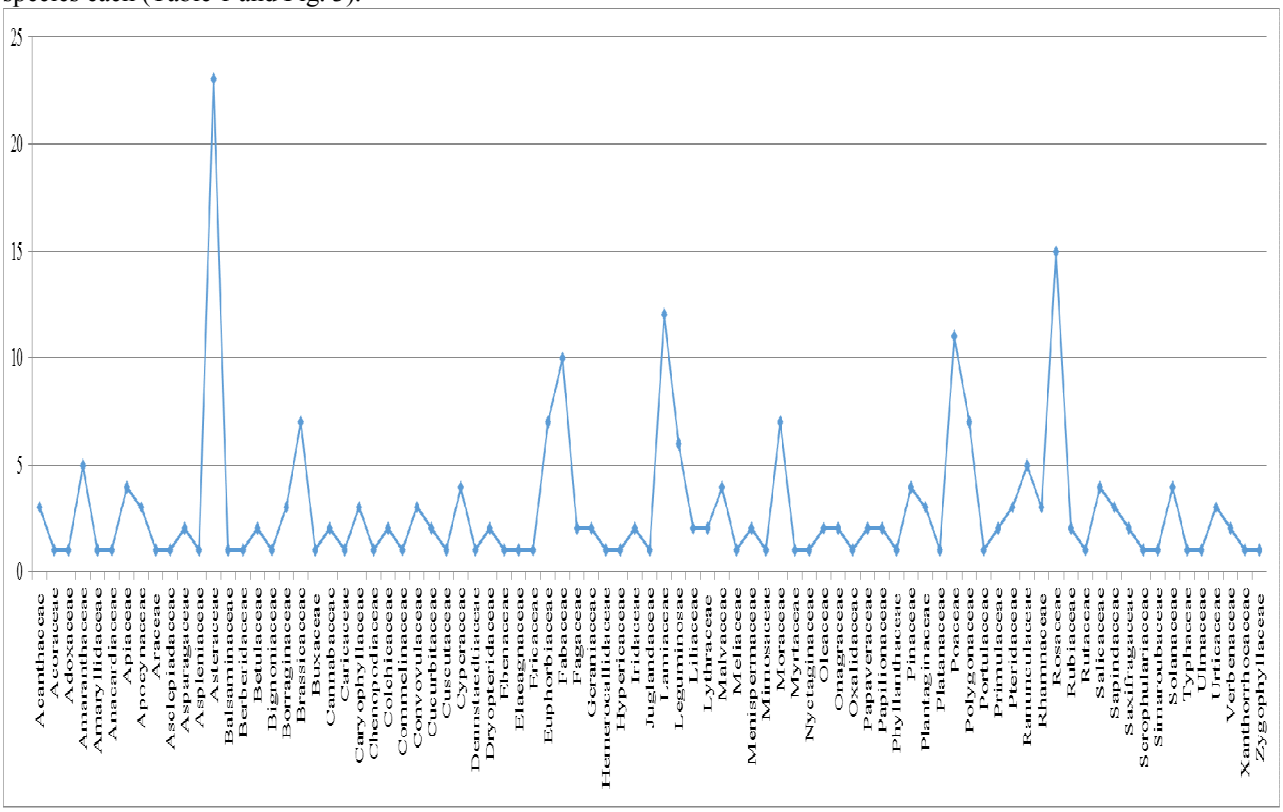

Figure 3: Plant species family wise distribution of recorded from the study area.

Table 1: Family wise distribution with number of species in %age

S.No	Family	No. of species	%age of species
1	Acanthaceae	3	1.22
2	Acoraceae	1	0.41
3	Adoxaceae	1	0.41
4	Amaranthaceae	5	2.03
5	Amaryllidaceae	1	0.41
6	Anacardiaceae	1	0.41
7	Apiaceae	4	1.63
8	Apocynaceae	3	1.22
9	Araceae	1	0.41
10	Asclepiadaceae	1	0.41
11	Asparagaceae	2	0.81
12	Aspleniaceae	1	0.41
13	Asteraceae	23	9.35
14	Balsaminaceae	1	0.41
15	Berberidaceae	1	0.41
16	Betulaceae	2	0.81
17	Bignoniaceae	1	0.41
18	Boraginaceae	3	1.22
19	Brassicaceae	7	2.85
20	Buxaceae	1	0.41
21	Cannabaceae	2	0.81
22	Caricaceae	1	0.41
23	Caryophyllaceae	3	1.22
24	Chenopodiaceae	1	0.41
25	Colchicaceae	2	0.81
26	Commelinaceae	1	0.41
27	Convovulaceae	3	1.22
28	Cucurbitaceae	2	0.81
29	Cuscutaceae	1	0.41
30	Cyperaceae	4	1.63
31	Dennstaedtiaceae	1	0.41
32	Dryopteridaceae	2	0.81
33	Ebenaceae	1	0.41
34	Elaeagnaceae	1	0.41
35	Ericaceae	1	0.41
36	Euphorbiaceae	7	2.85
37	Fabaceae	10	4.07
38	Fagaceae	2	0.81
39	Geraniaceae	2	0.81
40	Hemerocallidaceae	1	0.41
41	Hypericaceae	1	0.41
42	Iridaceae	2	0.81
43	Juglandaceae	1	0.41
44	Lamiaceae	12	4.88
45	Leguminosae	6	2.44
46	Liliaceae	2	0.81
47	Lythraceae	2	0.81
48	Malvaceae	4	1.63
49	Meliaceae	1	0.41
50	Menispermaceae	2	0.81
51	Mimosaceae	1	0.41
52	Moraceae	7	2.85
53	Myrtaceae	1	0.41
54	Nyctaginaceae	1	0.41

55	Oleaceae	2	0.81
56	Onagraceae	2	0.81
57	Oxalidaceae	1	0.41
58	Papaveraceae	2	0.81
59	Papilionaceae	2	0.81
60	Phyllanthaceae	1	0.41
61	Pinaceae	4	1.63
62	Plantaginaceae	3	1.22
63	Platanaceae	1	0.41
64	Poaceae	11	4.47
65	Polygonaceae	7	2.85
66	Portulaceae	1	0.41
67	Primulaceae	2	0.81
68	Pteridaceae	3	1.22
69	Ranunculaceae	5	2.03
70	Rhamnaceae	3	1.22
71	Rosaceae	15	6.10
72	Rubiaceae	2	0.81
73	Rutaceae	1	0.41
74	Salicaceae	4	1.63
75	Sapindaceae	3	1.22
76	Saxifragaceae	2	0.81
77	Scrophulariaceae	1	0.41
78	Simaroubaceae	1	0.41
79	Solanaceae	4	1.63
80	Typhaceae	1	0.41
81	Ulmaceae	1	0.41
82	Urticaceae	3	1.22
83	Verbenaceae	2	0.81
84	Xanthorrhoeaceae	1	0.41
85	Zygophyllaceae	1	0.41

Table 2: Floristic checklist including species and family name and plant habit.

S. No	Botanical name	Family name	Habit
1.	*Abies pindrow* (Royle ex D.Don) Royle	Pinaceae	T
2.	*Acacia modesta* Wall.	Fabaceae	T
3.	*Acacia nilotica* (L.) Delile	Fabaceae	T
4.	*Achillea millefolium* L.	Asteraceae	H
5.	*Achyranthes aspera* L.	Amaranthaceae	H
6.	*Acorus calamus* L.	Acoraceae	H
7.	*Adiantum caudatum* L.	Pteridaceae	H
8.	*Adiantum capillus-veneris* L.	Pteridaceae	H
9.	*Adonis aestivalis* L.	Ranunculaceae	H
10.	*Ailanthus altissima* (Mill) Swingle	Simaroubaceae	T
11.	*Ajuga integrifolia* Buch.-Ham.	Lamiaceae	H
12.	*Alnus nitida* (Spach) Endl	Betulaceae	T
13.	*Alternanthera pungens* Kunth	Amaranthaceae	H
14.	*Amaranthus viridus*	Amaranthaceae	H
15.	*Anagallis arvensis* L.	Primulaceae	H
16.	*Artemisia absinthium* L.	Asteraceae	H
17.	*Arundo donax* L.	Poaceae	H
18.	*Asparagus racemosus* Willd.	Asparagaceae	H

19.	*Asphodelus tenuifolius* Cav.	Xanthorrhoeaceae	H
20.	*Asplenium viride* Huds.	Aspleniaceae	H
21.	*Avena barbata* Pott ex Link	Poaceae	H
22.	*Avena sativa* L.	Poaceae	H
23.	*Bauhinea verigata*	Fabaceae	T
24.	*Berberis lycium* Royle	Berberidaceae	S
25.	*Bergenia ciliata* (Haw.) Sternb.	Saxifragaceae	H
26.	*Betula utilis* D.Don	Betulaceae	H
27.	*Bidens pilosa* L.	Asteraceae	H
28.	*Boerhavia repens* L.	Nyctaginaceae	H
29.	*Bombax ceiba L.*	Malvaceae	T
30.	*Broussonetia papyrifera* (L.) L'Hér. ex Vent.	Moraceae	T
31.	*Buglossoides arvensis* (L.) I.M.Johnst.	Boraginaceae	H
32.	*Bupleurum falcatum* L.	Apiaceae	H
33.	*Calendula arvensis* M.Bieb.	Asteraceae	H
34.	*Calotropis procera* Forsk.	Asclepiadaceae	S
35.	*Cannabis sativa L.*	Cannabaceae	H
36.	*Capsella bursa-pastoris* (L.) Medic.	Brassicaceae	H
37.	*Cardiospermum grandiflorum* Sw.	Sapindaceae	H
38.	*Carex flava* L.	Cyperaceae	H
39.	*Carica papaya* L.	Caricaceae	T
40.	*Carissa spinarum* L.	Apocynaceae	S
41.	*Carthamus lanatus* L.	Asteraceae	H
42.	*Carthamus oxyacanthus* M. Bieb	Asteraceae	H
43.	*Carthamus tinctorius* L.	Asteraceae	H
44.	*Cassia fistula* L.	Leguminosae	T
45.	*Cedrus deodara* Roxb. ex Lamb.	Pinaceae	T
46.	*Celtis australis* L.	Cannabaceae	T
47.	*Cenchrus ciliaris* L.	Poaceae	H
48.	*Centaurea iberica* Trevir. ex Spreng.	Asteraceae	H
49.	*Chenopodium album* L.	Chenopodiaceae	H
50.	*Cichorium intybus* L.	Asteraceae	H
51.	*Cirsium arvense* (L.) Scop.	Asteraceae	H
52.	*Clematis grata* Wall.	Ranunculaceae	S
53.	*Clinopodium vulgare* L.	Lamiaceae	H
54.	*Cocculus pendulus* (J.R.Forst. & G.Forst.) Diels	Menispermaceae	H
55.	*Colchicum autumnale* L.	Colchicaceae	H
56.	*Colchicum luteum* Baker	Colchicaceae	H
57.	*Commelina benghalensis L.*	Commelinaceae	H
58.	*Convolvulus arvensis L.*	Convovulaceae	H
59.	*Corymbia citriodora* (Hook.) K.D.Hill & L.A.S.Johnson.	Myrtaceae	T
60.	*Cotoneaster ellipticus* (Lindl.) Loudon.	Rosaceae	S
61.	*Cotula aurea* L.	Asteraceae	H
62.	*Crotalaria medicaginea* Lam.	Leguminosae	H
63.	*Cucumis melo* L.	Cucurbitaceae	H
64.	*Cuscuta reflexa* Roxb.	Cuscutaceae	P
65.	*Cynodon dactylon* (L.) Pers.	Poaceae	H
66.	*Cynoglossum wallichii* G.Don	Boraginaceae	H
67.	*Cyperus esculentus* L.	Cyperaceae	H
68.	*Cyperus iria* L.	Cyperaceae	H
69.	*Cyperus rotundus* L.	Cyperaceae	H
70.	*Cytisus scoparius* (L.) Link	Leguminosae	S
71.	*Dactyloctenium aegyptium* (L.) Willd.	poaceae	H
72.	*Dalbergia sissoo* DC.	Fabaceae	T
73.	*Debregeasia saeneb* (Forssk.) Hepper &	Urticaceae).	S

	J.R.I.Wood.		
74.	*Delphinium ajacis* L.	Ranunculaceae	H
75.	*Dianthus angulatus* Royle	Caryophyllaceae	H
76.	*Dicliptera chinensis* (L.) Juss.	Acanthaceae	H
77.	*Digera muricata (L.)* Mart.	Amaranthaceae	H
78.	*Diospyros lotus* L.	Ebenaceae	T
79.	*Dodonea viscosa* (L.) Jacq.	Sapindaceae	S
80.	*Dryopteris expansa* (C. Presl) Fraser-Jenk. & Jermy	Dryopteridaceae	H
81.	*Duchesnea indica* (Jacks.) Focke	Rosaceae	H
82.	*Dysphania ambrosioides* (L.) Mosyakin & Clemants	Amaranthaceae	H
83.	*Echinochloa colona* (L.) Link	Poaceae	H
84.	*Elaeagnus latifolia* L.	Elaeagnaceae	S
85.	*Emex australis* Steinh	Polygonaceae	H
86.	*Erigeron canadensis* L.	Asteraceae	H
87.	*Euphorbia helioscopia* L.	Euphorbiaceae	H
88.	*Euphorbia heterophylla* L.	Euphorbiaceae	H
89.	*Euphorbia hirta* L.	Euphorbiaceae	H
90.	*Euphorbia prostrata* Aiton	Euphorbiaceae	H
91.	*Euphorbia wallichii* Hook.f.	Euphorbiaceae	H
92.	*Ficus benghalensis* L.	Moraceae	T
93.	*Ficus carica* L.	Moraceae	T
94.	*Ficus palmata* Forssk.	Moraceae	T
95.	*Ficus racemosa* L.	Moraceae	T
96.	*Forsskaolea tenacissima* L.	Urticaceae	H
97.	*Fragaria nubicola* (Lindl. ex Hook.f.) *Lacaita*	Rosaceae	H
98.	*Fumaria indica* (Hausskn.) Pugsley	Papaveraceae	H
99.	*Gagea lutea* (L.) Ker Gawl.	Liliaceae	H
100.	*Galium aparine* L.	Rubiaceae	H
101.	*Geranium rotundifolium* L.	Geraniaceae	H
102.	*Geranium wallichianum* D.Don ex Sweet	Geraniaceae	H
103.	*Glandularia canadensis* (L.) Small.	Verbenaceae	H
104.	*Grewia villosa* Willd.	Malvaceae	T
105.	*Hemerocallis fulva* (L.) L.	Hemerocallidaceae	H
106.	*Heteropogon contortus* (L.) P.Beauv. ex Roem. & Schult.	Poaceae	H
107.	*Himalaiella heteromalla* (D.Don) Raab-Straube.	Asteraceae	H
108.	*Hypericum perforatum* L.	Hypericaceae	H
109.	*Impatiens bicolor* Royle	Balsaminaceae	H
110.	*Indigofera heterantha* Brandis	Fabaceae	S
111.	*Inula cappa* (Buch.-Ham. ex D.Don) DC.	Asteraceae	H
112.	*Ipomoea carnea* Jacq.	Convolvulaceae	S
113.	*Ipomoea purpurea* (L.) Roth	Convolvulaceae	H
114.	*Iris aitchisonii* (Baker) Boiss.	Iridaceae	H
115.	*Iris japonica* Thunb.	Iridaceae	H
116.	*Jasminum mesnyi* Hance	Oleaceae	S
117.	*Juglans regia* L.	Juglandaceae	T
118.	*Justicia adhatoda* L.	Acanthaceae	S
119.	*Lactuca dolichophylla* Kitam.	Asteraceae	H
120.	*Lannea coromandelica* (Houtt.) Merr.	Asteraceae	H
121.	*Lantana camara* L.	Verbenaceae	S
122.	*Lathyrus japonicus* Willd.	Fabaceae	H
123.	*Lathyrus odoratus* L.	Fabaceae	H

124.	*Lathyrus sativus* L.	Fabaceae	H
125.	*Lathyrus aphaca* L.	Fabaceae	H
126.	*Lepidium campestre* (L.) R.Br.	Brassicaceae	H
127.	*Lepidium didymum* L.	Brassicaceae	H
128.	*Lepidium pinnatifidum* Ledeb.	Brassicaceae	H
129.	*Lepidium virginicum* L.	Brassicaceae	H
130.	*Leptopus cordifolius* Decne	Phyllanthaceae	S
131.	*Leucaena leucocephala* (Lam.) de Wit	Mimosaceae	T
132.	*Mallotusphilipensis*(Lam) Muell	Euphorbiaceae	T
133.	*Malva parviflora* L.	Malvaceae	H
134.	*Malvestrum coromendalianum*	Malvaceae	H
135.	*Marrubium anisodon* K.Koch	Lamiaceae	H
136.	*Medicago polymorpha* L.	Fabaceae	H
137.	*Melia azedarach* L.	Meliaceae	T
138.	*Mentha arvensis* L.	Lamiaceae	H
139.	*Mentha longifolia* (L.) L.	Lamiaceae	H
140.	*Micromeria biflora* (Buch.-Ham. ex D.Don) Benth.	Lamiaceae	H
141.	*Momordica cochinchinensis* (Lour.) Spreng	Cucurbitaceae	H
142.	*Morus alba* L.	Moraceae	T
143.	*Morus nigra* L.	Moraceae	T
144.	*Myrsine africana* L.	Primulaceae	S
145.	*Narcissus poeticus* L.	Amaryllidaceae	H
146.	*Nepeta erecta* (Royle ex Benth.) Benth	Lamiaceae	H
147.	*Nerium oleander* L.	Apocynaceae	S
148.	*Oenothera affinis* Cambess.	Onagraceae	H
149.	*Oenothera rosea* L'Hér. ex Aiton	Onagraceae	H
150.	*Olea ferruginea* Royle	Oleaceae	T
151.	*Origanum vulgare* L.	Lamiaceae	H
152.	*Oxalis corniculata* L.	Oxalidaceae	H
153.	*Papaver orientale* L.	Papaveraceae	H
154.	*Parthenium hysterophorus* L.	Asteraceae	H
155.	*Periploca aphylla* Decne.	Apocynaceae	S
156.	*Persicaria capitata* (Buch.-Ham. ex D.Don) H.Gross	Polygonaceae	H
157.	*Persicaria hydropiper* (L.) Delarbre	Polygonaceae	H
158.	*Pinus roxburghii* Sarg.	Pinaceae	T
159.	*Pinus wallichiana* A.B.Jacks.	Pinaceae	T
160.	*Pistacia chinensis* Bunge	Anacardiaceae	T
161.	*Plantago lanceolata* L.	Plantaginaceae	H
162.	*Plantago major* L.	Plantaginaceae	H
163.	*Platanus orientalis* L.	Platanaceae	T
164.	*Poa annua* L.	Poaceae	H
165.	*Polygala chinensis* L.	Polygalaceae	H
166.	*Polygonum aviculare* L.	Polygonaceae	H
167.	*Polystichum lonchitis* (L.) Roth	Dryopteridaceae	H
168.	*Populus alba* L.	Salicaceae	T
169.	*Populus ciliata* Wall. ex Royle	Salicaceae	T
170.	*Portulaca oleracea* L.	Portulaceae	H
171.	*Prunus armeniaca* L.	Rosaceae	T
172.	*Prunus cornuta* (Wall. ex Royle) Steud	Rosaceae	T
173.	*Prunus domestica* L.	Rosaceae	T
174.	*Prunus persica* (L.) Batsch	Rosaceae	T
175.	*Pteridium aquilinum* (L.) Kuhn	Dennstaedtiaceae	H
176.	*Pteris cretica* L.	Pteridaceae	H
177.	*Punica granatum* L.	Lythraceae	T
178.	*Pyrus bourgaeana* Decne.	Rosaceae	T

179.	*Pyrus pashia* Buch.-Ham. ex D.Don	Rosaceae	T
180.	*Quercus incana* Bartram	Fagaceae	T
181.	*Quercus robur* L.	Fagaceae	T
182.	*Ranunculus arvensis* L.	Ranunculaceae	H
183.	*Ranunculus muricatus* L.	Ranunculaceae	H
184.	*Rhododendron arboreum* Sm.	Ericaceae	T
185.	*Rhynchosia pseudo-cajan* Cambess.	Leguminaceae	S
186.	*Ricinus communis* L.	Euphorbiaceae	T
187.	*Robinia pseudoacacia* L.	Papilionaceae	T
188.	*Rosa moschata* Herrm.	Rosaceae	S
189.	*Rosa webbiana* Wall. ex. Royle	Rosaceae	S
190.	*Rubia himalayensis* Klotzsch	Rubiaceae	H
191.	*Rubus ellipticus* Sm.	Rosaceae	S
192.	*Rubus fruiticosus* Agg.	Rosaceae	S
193.	*Rubus niveus* Thunb.	Rosaceae	S
194.	*Rubus ulmifolius* Schott	Rosaceae	S
195.	*Rumex denticulatum*	Polygonaceae	H
196.	*Rumex hastatus* D.Don	Polygonaceae	H
197.	*Rydingia limbata* (Benth.) Scheen & V.A.Albert	Lamiaceae	S
198.	*Sageretia thea* (Osbeck) M.C. Johnst.	Rhamnaceae	S
199.	*Salix babylonica* L.	Salicaceae	T
200.	*Salix tetrasperma* Roxb.	Salicaceae	T
201.	*Salvia moorcroftiana* Wall. ex. Benth.	Lamiaceae	H
202.	*Sapindus marginatus* Willd.	Sapindaceae	T
203.	*Sarcococca pruniformis* Lindl.	Buxaceae	S
204.	*Sauromatum venosum* (Dryand. ex Aiton) Kunth	Araceae	H
205.	*Saxifraga oppositifolia* L.	Saxifragaceae	H
206.	*Scandix pecten-veneris* L.	Apiaceae	H
207.	*Scutellaria linearis* Benth	Lamiaceae	H
208.	*Senecio chrysanthemoides* DC.	Asteraceae	H
209.	*Seseli mucronatum* (Schrenk) Pimenov & Sdobnina	Apiaceae	H
210.	*Silene conoidea* L.	Caryophyllaceae	H
211.	*Silybum marianum* (L.) Gaertn.	Asteraceae	H
212.	*Sisymbrium irio* L.	Brassicaceae	H
213.	*Sisymbrium officinale* (L.) Scop.	Brassicaceae	H
214.	*Solanum nigum* L.	Solanaceae	H
215.	*Solanum pseudocapsicum* L.	Solanaceae	H
216.	*Solanum virginianum* L.	Solanaceae	H
217.	*Sonchus asper* (L.) Hill	Asteraceae	H
218.	*Sorghum halepense* (L.) Pers.	Poaceae	H
219.	*Stellaria media* (L.) Vill.	Caryophyllaceae	H
220.	*Strobilanthes urticifolia* Wall. ex Kuntze	Acanthaceae	H
221.	*Tagetes minuta* L.	Asteraceae	H
222.	*Taraxacum campylodes* G.E.Haglund	Asteraceae	H
223.	*Tecomella undulata* (Sm.) Seem.	Bignoniaceae	T
224.	*Themeda anathera* (Nees ex Steud.) Hack.	Poaceae	H
225.	*Tinospora sinensis* (Lour.) Merr.	Menispermaceae	H
226.	*Torilis nodosa* (L.) Gaertn.	Apiaceae	H
227.	*Tribulus terrestris* L.	Zygophyllaceae	H
228.	*Trichodesma indicum* (L.) Lehm	Borraginaceae	H
229.	*Trifolium repens* L.	Papilionaceae	H
230.	*Tulipa clusiana* DC.	Liliaceae	H

231.	*Typha latifolia* L.	Typhaceae	H
232.	*Ulmus villosa* Brandis ex Gamble	Ulmaceae	T
233.	*Urtica dioica* L.	Urticaceae	H
234.	*Verbascum thapsus* L.	Scrophulariaceae	H
235.	*Verbena officinalis* L.	Verbenaceae	H
236.	*Veronica persica* Poir.	Plantaginaceae	H
237.	*Viburnum gradiflorum* Wall. ex DC.	Adoxaceae	S
238.	*Vicia hirsuta* (L.) Gray	Leguminoceae	H
239.	*Vicia sativa* L.	Leguminoceae	H
240.	*Vitex negundo* L.	Lamiaceae	S
241.	*Withania somnifera* (L.) Dunal	Solanaceae	S
242.	*Woodfordia fruticosa* (L.) Kurz	Lythraceae	S
243.	*Xanthium strumarium* L.	Asteraceae	H
244.	*Zanthoxylum aramtum* DC.	Rutaceae	S
245.	*Ziziphus jujube* Mill.	Rhamnaceae	T
246.	*Ziziphus oxyphylla* Edgew.	Rhamnaceae	S

REFERENCES

1. Qadir, G., 2015. Phanerogamic diversity and traditional uses of plants from Laspur Valley, District Chitral. M. Phil. Thesis, Hazara University, Mansehra, Pakistan.
2. Muhammad, S., M. Hussain, I.U. Rahman, G.M. Shah, F. Ijaz and K. Ullah. 2016. Indigenous medicinal usage of family Asteraceae in Sadda Lower Kurram Agency: A Case Study. *Asian J. Sci. & Technol.,* 7(12): 3998-4003.
3. Rahman, I.U., F. Ijaz, Z. Iqbal, A. Afzal, N. Ali, M. Afzal, M.A. Khan, S. Muhammad, G. Qadir and M. Asif. 2016. A novel survey of the ethno medicinal knowledge of dental problems in Manoor Valley (Northern Himalaya), Pakistan. *J. Ethnopharmacol.,* 194C, 877-894.
4. Shaheen, S., Z. Iqbal, F. Ijaz, J. Alam and I.U. Rahman. 2016. Floristic composition, biological spectrum and phenology of Tehsil Havelian, District Abbottabad, Pakistan. *Pak. J. Bot.,* 48(5): 1849-1859.
5. Nasir, E. and S.I. Ali. (Eds.). 1970-1979. *Flora of West Pakistan*. No. 1-131. Islamabad, Karachi.
6. Nasir, E. and S.I. Ali. (Eds.). 1980-1989. *Flora of Pakistan*. No. 132-190. Islamabad, Karachi.
7. Ali, S.I. and Y.J. Nasir, 1989-1992. *Flora of Pakistan*. Nos. 191-193. Islamabad, Karachi.
8. Ali, S.I and M. Qaiser. (Eds.) 1993-2009. *Flora of Pakistan.* No. 194-216. Karachi.
9. Rahman, I.U., F. Ijaz, A. Afzal, Z. Iqbal, N. Ali and S.M. Khan. 2016. Contributions to the phytotherapies of digestive disorders; Traditional knowledge and cultural drivers of Manoor Valley, Northern Pakistan. *J. Ethnopharmacol.,* 192, 30-52.
10. Ijaz, F., 2014. Biodiversity and traditional uses of plants of Sarban Hills, Abbottabad. M. Phil. Thesis, Hazara University, Mansehra, Pakistan.
11. Ijaz, F., Z. Iqbal, J. Alam, S.M. Khan, A. Afzal, I.U. Rahman, M. Afzal, M. Islam and Sohail. 2015. Ethno medicinal study upon folk recipes against various human diseases in Sarban Hills, Abbottabad, Pakistan. *World J. Zoology,* 10(1): 41-46.
12. Khattak, N.S., F. Nouroz, I.U. Rahman and S. Noreen. 2015. Ethno veterinary uses of medicinal plants of district Karak, Pakistan. *J. Ethnopharmacol.,* 171: 273-279.
13. Khan, K.U., M. Shah, H. Ahmad, M. Ashraf, I.U. Rahman, Z. Iqbal, S.M. Khan and A. Majid. 2015. Investigation of traditional veterinary phytomedicines used in Deosai Plateau, Pakistan. *Global Vet.,* 15(4): 381-388.
14. Shah, A.H., S.M. Khan, A.H. Shah, A. Mehmood, I.U. Rahman and H. Ahmad. 2015. Cultural uses of plants among Basikhel Tribe of District Tor Ghar, Khyber Pakhtunkhwa, Pakistan. *Pak. J. Bot.,* 47(SI): 23-41.

15. Iqbal, M., S. Khan, M.A. Khan, I.U. Rahman, Z. Abbas and Zahidullah. 2015. Exploration and inventorying of weeds in wheat crop of the district Malakand, Pakistan. *Pak. J. Weed Sci. Res*., 21(3): 435-452.

16. Ijaz, F., Z. Iqbal, I.U. Rahman, S.M. Khan, G.M. Shah, K. Khan and A. Afzal. 2016. Investigation of traditional medicinal floral knowledge of Sarban Hills, Abbottabad, KP, Pakistan. *J. Ethnopharmacol.,* 179: 208-233.

17. Rahman, A.U., S.M. Khan, S. Khan, A. Hussain, I.U. Rahman, Z. Iqbal and F. Ijaz. 2016. Ecological Assessment of Plant Communities and Associated Edaphic and Topographic Variables in the Peochar Valley of the Hindu Kush Mountains. *Mountain Res. Dev.,* 36(3): 332-341.