Macrothink Institute™

Journal of Biology and Life Science
ISSN 2157-6076
2015, Vol. 6, No. 2

Eco-Biological Assessment of Main Forage Grain Crop and Legumes in Pastures Hayland of Shirvan Territory

T. E. Gasimzade

Department of Agrarian Sciences of ANAS, Baku, Azerbaijan

E-mail: nushana_kasimzade@yahoo.com

Received: May 16, 2015 Accepted: June 5, 2015

doi:10.5296/jbls.v6i2.7925 URL: http://dx.doi.org/10.5296/jbls.v6i2.7925

Abstract

Eco-biological properties of botanical teams of fodder grains and legumes which is highly efficient in terms distributed in Shirvan zone of Azerbaijan have been studied. During investigations 76 species from Cereal family, and 45 species from legumes were defined. Some of them are as common in the area where others been determined. It was known during biotopological analysis of investigated species that 20-25 species of legumes are oommon in bushes, 18 species in forest, forest edge, arid forest biotops, grape fields, and gardens, and 4 species in stoned cliffs. Variation of these species on zones is non-equal. 47 species were found in lowland mountain zone, 17 species in middle mountain zone and 23 species are common in upland mountain zone. Analysis of ecological groups of cereals showed that 10 species grow in mesophyte, 50 species in xerophyte, 16 species in mesoxerophyte condition. 3 species of Legumes grow in mesophyte condition, 24 species in xerophyte, 19 species in mesoxerophyte condition.

Keywords: Grain, Legume, Forage crops, Meadows ç Pastures, Shirvan (Azerbaijan), Ecological assessment

1. Introduction

Geo-biomorphological investigation in Azerbaijan has been started since the 50th of last century. Geographers M.Musaibov, botanists acad. V.Hajiyev [Gadzhiyev 1983; Hajiyev 1990], soilscientists acad. M.Salayev [Salayev 1991] and acad. G.Mammadov [Mammadov, et all 2006; Mammadov 2007] played an important role in implementing the investigations.

Geological structure (neotectonical) - as e result of neotectonical movements occur within Azerbaijan as differential movement's macrostructure, Kur-Arazdepressions were formed [Agaguliyev 2000; Aliyev, et all 1976].

Investigated Area covers Gobustan, Goychay, Hajigabul, Kurdemir, Agsu, Ismayilli and Shamakhi (partly) and bordered with Neogen upland, Langebiz mountains from north, from north-east Small

Harami range, from south Kura river, south east Hajigabul river and from west part of Girdmanchai river. Some parts of the area are 11 m less than ocean level (Javad village), are equal to ocean level (Hajigabul, Kurdemir) whereas some parts are higher than ocean level up to 50 meters (Agsu city). Length of investigation area on linear transect is 80 km and width is approximately 40 km, general area is 3200 km square. Geographical coordinates of the territory: 40-41 30 north latitue 488-49 longtitu.

It is dedicated to study grain crops and legume that is base of forage crop in the territory. Bioecological properties of grain crops and legumes that spread above mentioned zones.

2. Material and Methods

Morphological, systematical, ecological -geographical, phenological and other methods were used in determination of plants. During analysis of flora it was based on C. Raunker [Raunkiaer 1934] and Brown-Blanke [Braun-Blanguet 1964], I.Q. Serebryakov [Serebryakov 1964] about life form, geographical and areal types of A.A. Grosshame [Grossgeim 1936], N.N. Portenier [Portenier 2000; Portenier 2000], ecological groups A.R. Shennikova [Shennikov 1938]. In the list of flora there were reflected information about each specie's family, its subfamily as well as their life form, ecological groups, geographical and areal types, flowering and harvest periods, endemism and so on. Names of toxonoms were given according to S.K. Chereranov [Cherepanov 1995].

3. Discussion

In order to learn Shirvan vegetation and ecology, geobotanical investigation were carried out on the following routes in 2008-2014. Investigated areas were studied in different seasons by route methods. Investigations were carried out in next districts (table 1).

Table 1. Investigations were carried out in next districts of Azerbaijan

Date of investigations	Place of investigations
06.06.08.	Goychay district, Mirzehusainli village meadow legume-grain grass
06.06.08.	Goychay district Qarayazi village (near cemetery) wormseed - legume in semi-desert plants type
06.06.08.	Agsu district,Purhasanli village, grat-brown soils, barley-thistle plants
07.06.08.	Agsu district, Nuydu munipalicy, brown mountain-forest soils under forest vegetation on third tier grain -legume-different grasses were gathered
17.06.08-19.06.08.	Ismailly district, Talistan village mountain-brown soils near forest from third tier grains-different grasses were gathered
17.06.08-19.06.08.	Ismailly, Kurdmashi village, planting areas, plain relief, from dark gray-brown soils inmeadows mainly legumes and grain crops were garhered
07.05.08.	Hajıgabul district, Small harami range semi desert vegatation

08.06.08.	from Gobustan district, Gurbanchi village less inclinated plain, gray brown soil, in semi desert vegatation ephemere formassion herbaries were gathered
03.11.08.	from Gobustan district, Gurbanchi less inclinated plain, gray brown soil, in semi desert vegatation wormwood -ephemere formassion herbaries were gathered and had taken photos
09.06.09-10.06.09.	water plants that spread in Hajigabul district, Shahriyar village (Kur bank), Tugay forest vegetation were investigated and herbary materials were gathered and photos had been taken
20.07.10-23.07.10.	water plants that spread In Hajigabul district, Hajigabul lake and upland Shirvan collector's banks were investigated and their species composition was defined
20.10.11.-24.10.11.	Desert vegetation (saltwort) near Mugan, Qarasu, Padar villages of Hajigabul district was geobotanically statied
12.10.12.-13.10.12.	Plants near Pirili, Jarli, Qocali in Kurdemir District, Arabushagi, Kendoba in Agsu district were investigated geobotanically and herbari materials were collected
17.06.12.	In Shamakhi district, Safali village, upland area, high mountains (1800 m), shrubs-grains-legumes-different grasses were geobotanically stadied and herbari materials were gathered and taken photos
17.06.12.	In Shamakhi district, Melhem village, mountain - brown, near forest meadow vegetation were observed and herbari materials were collected and taken photos
22.05.13.-24.05.13.	In Hajigabul near Talish village and Tugay forest vegetation near Kur River bank was observed and herbari materials were collected and photos taken
16.05.13.-20.05.13.	water plants in Hajigabul district, near Hajigabul lake,Shirvan Collector, Kur river banks were investigated and herbari materials were collected
7.10.13.-10.10.13.	semidersert vegetation (white wormwood) in Hajigabul district, Small Harami range was statied and herbari materials were collected and photos taken
17.10.13-19.10.13.	geobotanical investigation of desert vegetation of Hajigabul district in Mugan, Qarasu, villages and Karrar village in Kurdemir district was carried out and herbari materials were collected and photos taken
3.11.14.-6.11.14.	desert vegetation near Qarasu and Padar villages in Hajigabul was investigated, herbari materials were colleced and photos were taken
20.05.14.-22.05.14.	gobotanical investigation of plants near Qaraqoyunlu, Arabushagi, rehimli, Kendoba villages in Agsu was carried out and herbari materials were collected and photos of characteric areas were taken
10.10.14.-12.10.14.	geobotanical investigation of vegetation near Karrar, Sigirri and Mollakend villages in Kurdemir disrtict was carried out and herbari materials were collected

Scarce and agricultural important fodd and forage plants' 17 seed samples that cover 17 species and 10 types were collected, their descriptors were defined and given to Genebank in order to sustainable usage and restoration as genetical materials.

4. Experiments and Discussions

During investigations 76 species from Cereal family, from legumes 45 species were defined. Some of them are common in the area where as some of them are scarce (figure. 1, 2).

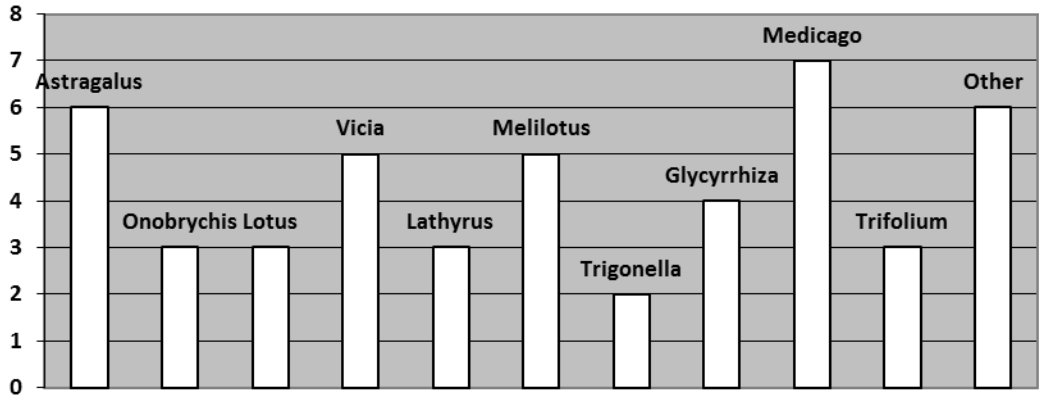

Figure 1. The number of types according to species of legumes

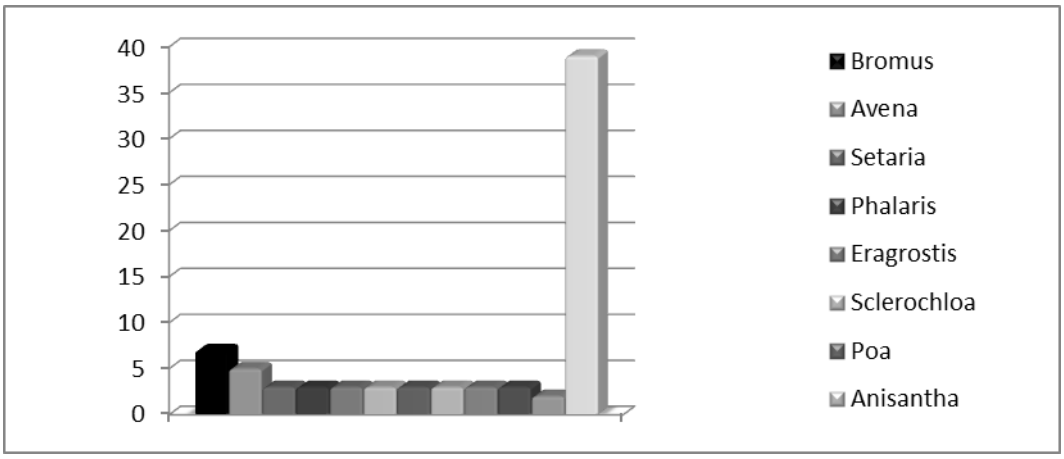

Figure 2. The number of types according to species of cereals

It is obvious from figures that in Shirvan area, Cereals such as *Bromus* L., *Avena* L., and Legumes such as *Astragalus* and *Meticago* types are common.

During investigation, ecological analysis, analysis about biotops where investigated species spread and their differensationaccording to zones and ecological groups (according to water) and other ecological issues were studies as well as toxsonomical analysis. This investigation was carried out according to literature information and was changed during expeditiond to the territory. It was known during biotopological analysis of investigated species that 20-25 species of legumes are oommon in bushes, 18 species in forest, forest edge, arid forest biotops, grape fields, gardens, 4 species in stoned cliffs. Variantion of these species on zones is non-equal. In lowland mountain zone 47 species, 17 species middle mountain zone and in upland mountain zone 23 species are common.

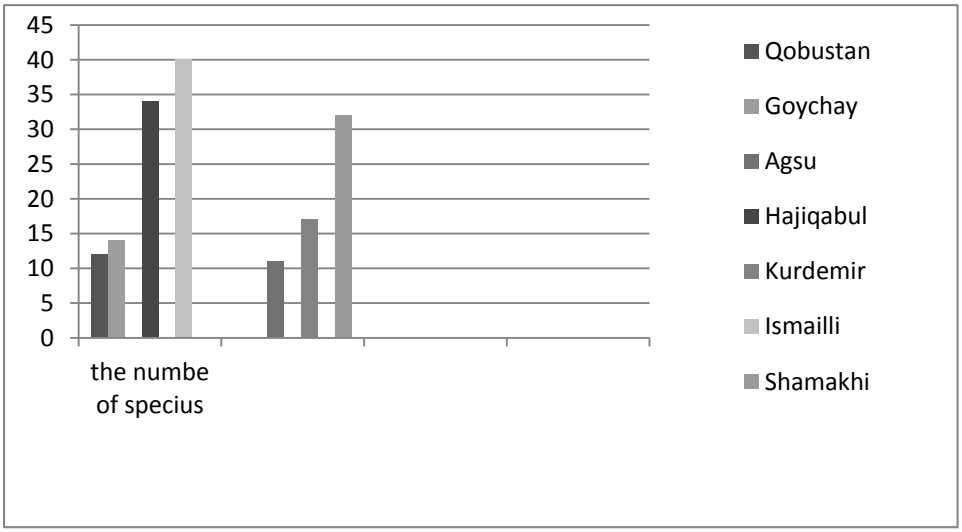

Figure 3. Distribution of cereals family according to districts

Investigations and collected herbari materials how that distribution of legume family according to districts are the following (figure 4.)

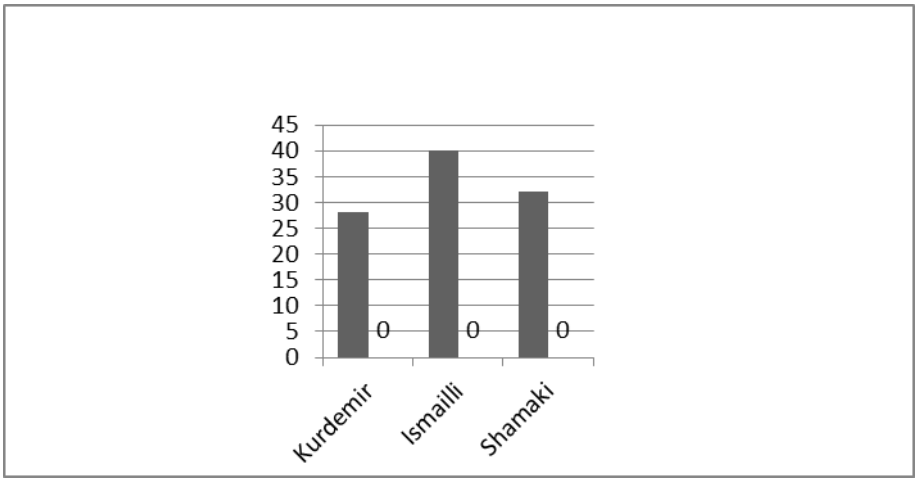

Figure 4. Distribution of Legume family according to districts

Monitorings carried out during expedition showed that, physical-geogaphical and anthropogenic factors play an important role in ecological groups of species and distribution on mountain zones. biotopological, ecological, geographical analysis of studied species are illustrated in figures (5,6) and shown in Table 2 and Table 3.

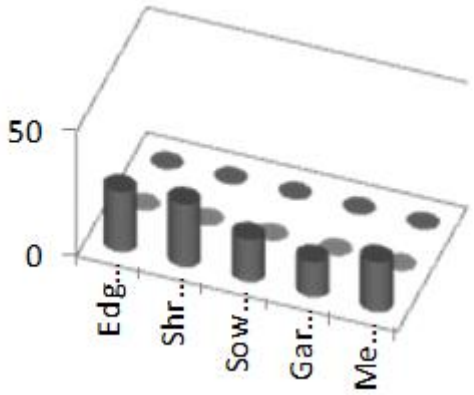

Figure 5. Distrubition of Cereal family species on important biotops

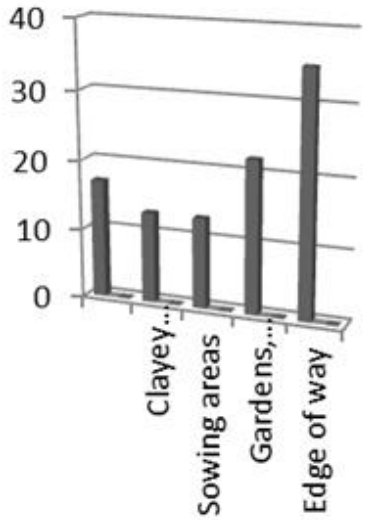

Figure 6. Distrubition of Cereal family species on important biotops

Table 2. Eco-biological properties of individuals from Cereals family in Shirvan territory

Names of families, types and species	**Life forms by Serebryakov and Raunkier**	**Geographical types**	**Areal types**	**Ecological groups**	**Phenological phase**
Poaceae Barnhart					
1.*Imperata cylindrica* (L.) Raeusch.	perennial. HK	Mediterranean-Iran – Turan	Ancient.Ar.d.	Mesophyte	V-VII
2. *Tragus racemosus* (L.) All.	annual. T.	Mediterranen – Ir.	Ancient.Ar.d.	Xerophyte	VI- VIII
3. *Paspalum paspalodes* (Michx.) Scribn.	perennial. HK	Adventiv	Adventiv	Mesophyte	VI-IX (XI)
4. *P. dilatatum* Poir.	perennial. HK	Adventiv	Adventiv	Xerophyte	VII – VIII

5. *Eriochloa succincta* (Trin.) Kunth	annual. T.	Turan	Səhra	Hygrophyte	(2/ VIII) IX-XI
6. *Digitaria violascens* Link	annual. T.	Adventiv	Adventiv	Xerophyte	VII – IX
7. *D. sanguinalis* (L.) Scop.	annual. T.	Boreo. – trop.	Adventiv	MezoXerophyte	VII – X
8. *Echinochloa crusgalli* (L.) Beauv.	annual. T.	Boreo. –trop.	Adventiv	MezoXerophyte	VII – IX
9. *Setaria verticillata* (L.) Beauv.	annual. T.	Palearkt. –subtrop.	Adventiv	Xerophyte	VI-IX
10. *S. pumila* (Poir.) Schult.	annual. T.	Trop. – subtrop.	Adventiv	Xerophyte	VI-X
11. *S.viridis* (L.) Beauv.	annual. T .	Palearkt.	Boreal	Mesophyte	(V)VI-VIII(X)
12. *Phalaris minor* Retz	annual. T.	Medit. –Ir. - Sind	Ancient.Ar.d.	Xerophyte	IV-V, VI
13. *Ph. brachystachys* Link	annual. T.	Mediterranen	Ancient.Ar.d.	Xerophyte	V-VI, VI – VII
14. *Ph. paradoxa* L.	annual. T	Mediterranen	Ancient.Ar.d.	Xerophyte	V, VI-VII
15.*Phalaroides arundinacea* (L.) Rauschert	perennial. K	Holarkt.	Boreal	Hygrophyte	VI-VII, VII –IX
16. *Stipa prilipkoana* Grossh.	perennial. HK	Iran	Ancient.Ar.d.	Xerophyte	V
17. *S. caspia* C.Koch	perennial. HK	Iran – Turan	Ancient.Ar.d.	Xerophyte	V-VI
18. *Crypsis schoenoides* (L.) Lam.	annual. T	Mediter. – Tur.	Ancient.Ar.d.	Hygrophyte	(VI)VII- X (XI)
19. *Phleum paniculatum* Huds.	annual. T	Mediter. -Tur.	Ancient.Ar.d.	MezoXerophyte	V-VI (VII)
20. *Alopecurus arundinaceus* Poir.	perennial. HK	Palearkt.	Boreal	MezoXerophyte	V-VII
21. *A. myosuroides* Huds.	annual. T	Mediter. –Ir. –Tur.	Ancient.Ar.d.	Mesophyte	V-VI
22. *Polypogon monspeliensis* (L.) Desf.	annual. T	Mediter. –Ir. –Tur.	Ancient.Ar.d.	Hygrophyte	V-VII
23. *Agrostis gigantea* Roth	perennial. HK	Holarkt.	Boreal	Mesophyte	VI-VII
24. *Calamagrostis epigeios* (L.) Roth	perennial. K	Palearkt.	Boreal	Hygrophyte	VI-VIII
25. *Avena clauda* Durieu	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	V
26. *A. eriantha* Durieu	annual.T	Mediter.	Ancient.Ar.d.	Xerophyte	2/IV-V
27. *A. fatua* L.	annual. T	Western palearkt.	Boreal	Xerophyte	VI-VII
28. *A. persica* Steud.	annual. T	Tur.	Səhra	Xerophyte	IV-VI (VII)
29. *A. trichophylla* C. Koch	annual. T	Front Asia	Ancient.Ar.d.	Xerophyte	2/IV-V/VI
30. Cynodon dactylon (L.) Pers.	perennial. HK	Mediter.–Ir. Tur.	Ancient.Ar.d.	MezoXerophyte	VI-IX
31.Arundo donax L.	perennial. HK	Mediter.	Ancient.Ar.d.	MezoXerophyte	VIII-X
32. Phragmites australis (Cav.) Trin. ex Steud.	perennial. K	Holarkt.	Boreal	Hidrofit	VII-X

33. Eragrostis pilosa (L.)Beauv.	annual. T	Boreo-subtrop.	Adventiv	MezoXerophyte	VII- VIII (X)
34.E.minor Host	annual. T	Mediter..- Ir.-Tur.	Ancient.Ar.d.	MezoXerophyte	VI-IX
35. E. starosselskyi Grossh.	perennial. HK	Ir.-Tur.	Ancient.Ar.d.	Xerophyte	2/VI-VII (X)
36. Rostraria glabriflora (Trautv.) Czer.	annual. T	Mediter.- Ir.-Tur.	Ancient.Ar.d.	MezoXerophyte	IV-VI
37. Catabrosa aquatica (L.)Beauv.	perennial. K	Holarkt.	Boreal	Hygrophyte	V-VII
38.Aeluropus littoralis (Gouan) Parl.	perennial. HK	Mediter.-Ir.	Ancient.Ar.d.	MezoXerophyte	V-VII
39.Cynosurus echinatus L.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	V-VII
40.Sclerochloa dura (L.) Beauv.	annual. T	Mediter. –Tur.	Ancient.Ar.d.	Xerophyte	IV-VII
41. Schismus arabicus Nees Thell.	annual. T	Eastern- Mediter. -Ir.-Tur.	Ancient.Ar.d.	Xerophyte	IV-VI
42.S. barbatus (L.) Thell.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	IV-VI
43. Poa bulbosa L.	perennial. HK	Mediter.-Sarm.	Ancient.Ar.d.	Xerophyte	III –IV,IV
44.P. annua L.	annual. T	Kosmopolit	Kosmopolit	Mesophyte	V-VII, VI –IX
45. P. trivialis L.	perennial. HK	Palearktic	Boreal	Mesophyte	VI-VII, VII – VIII
46. Catabrosella humilis (Bieb.)Tzvel.	perennial. HK	Sarmart	Grey	Xerophyte	IV-V
47. Puccinellia gigantea (Crossh.) Grossh.	perennial. HK	Turan	Desert	Mesophyte	V
48.P. bulbosa (Grossh.) Grossh.	perennial. HK	Eastern Transcaucasia	Desert	Mesophyte	V
49. Festuca pratensis Huds.	perennial. HK	Europe	Boreal	Xerophyte	V- VIII
50. F. arundinacea Schreb.	perennial. HK	Western -palearkt.	Boreal	Mesophyte	V-VIII
51. Vulpia myuros (L.)C.C.Gmel.	annual. T	Western	Ancient.Ar.d.	MezoXerophyte	IV-VI
52. Parapholis incurva (L.) C.E. Hubb.	annual. T	Mediter.-Ir.-Tur.	Ancient.Ar.d.	Xerophyte	IV-VI
53. Pholiurus pannonicus (Host) Trin.	annual. T	Pan.- Sarmat	Grey	Xerophyte	V- VI
54.Psilurus incurvus (Gouan) Schinz. &Thell.	anual. T	Western	Ancient.Ar.d.	MezoXerophyte	IV-V
55. Scleropoa rigida (L.) Griseb.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	V
56. Anisantha sterilis (L.) Nevski	annual. T	Mediter.- Tur.	Ancient.Ar.d.	Xerophyte	IV-VI
57. A. rubens (L.) Nevski	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	III- VI
58. A. tectorum (L.) Nevski	annual. T	Mediter.-Ir.-Tur.	Ancient.Ar.d.	Xerophyte	(III) IV – VI

59.Bromus arvensis L.	biennial . HK	Palearkt.	Boreal	Xerophyte	V-VII
60.B. squarrosus L.	biennial . HK	Mediter.	Ancient.Ar.d.	Xerophyte	VI-VII
61. B. japonicus Thunb.	annual. T	Europe – Mediter.	Boreal	MezoXerophyte	V-VII
62.B. commutatus Schrad.	annual. T	Europe	Boreal	Xerophyte	V- VII
63. B. mollis L.	annual. T	Europe	Boreal	Xerophyte	V-VII
64. B. scoparius L.	annual. T	Mediter.-Ir.-Tur.	Ancient.Ar.d.	MezoXerophyte	IV- VII
65. B. danthoniae Trin.	annual. T	Ir.-Tur.	Ancient.Ar.d.	Xerophyte	V-VII
66.Trachynia distachya (L.) Link	annual. T	Mediter.-Ir.-Tur.	Ancient.Ar.d.	Xerophyte	IV-VI, VI – VII
67. Lolium rigidum Gaudin	annualr. T	Mediter.-Ir.	Ancient.Ar.d.	Xerophyte	V-VI
68. Elytrigia repens (L.) Nevski	perennial. HK	Palearkt.	Boreal	Mesophyte	VI – VIII
69. Eremopyrum triticeum (Gaertn.) Nevski	annual. T	Sarmat	Grey	Xerophyte	IV-V (1/ VI)
70. E. orientale (L.) Jaub.&.Spach	annual. T	Mediter.–Ir.- Tur.	Ancient.Ar.d.	Xerophyte	IV-VI
71. E. distans (C.Koch) Nevski	annual. T	Ir.-Tur.	Ancient.Ar.d.	Xerophyte	V-1/VI
72. Aegilops cylindrica Host	annual. T	The east - Mediter.-Ir.-Tur.	Ancient.Ar.d.	Xerophyte	2/V- VI
73. Ae. triuncialis L.	annual. T	Mediter.-Ir.-Tur.	Ancient.Ar.d.	Xerophyte	V- VI
74. Hordeum bulbosum L.	perennial. HK	Mediter.	Ancient.Ar.d.	MezoXerophyte	V- 1/VII
75. H. leporinum Link	annual. T	Mediter.- Ir. - Tur.	Ancient.Ar.d.	Xerophyte	2/IV-VI(1/ VII)
76. H. geniculatum All.	annual. T	Mediter.	Ancient.Ar.d.	MezoXerophyte	V-VI

Table 3. Eco-biological properties of individuals from legumes family in Shirvan territory

Names of families, types and species	**Life forms by Serebryakov and Raunkier**	**Geographical types**	**Areal types**	**Ecological groups**	**Phenological phase**
Fabaceae Lindl.					
1.Lagonychiumfarctum (Banks&Soland.) Bobr.	Stony, rocky places, Ch	The east Mediter.-Ir.-Tur.	Ancient.Ar.d.	MezoXerophyte	V-VI, VII-IX
2. Trigonella calliceras Fisch.	annual. T	Hirk.	Ancient	Xerophyte	IV-V, V-VI
3. T. monspeliaca L.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	IV-V. V-VI
4. Medicago caerulea Less. ex Ledeb.	perennial. HK	Sarm.	Grey	Xerophyte	V-(VIII),VIII-IX
5. M.lupulina L.	Iki.HK	Palearkt.	Boreal	MezoXerophyte	IV-VII
6. M. orbicularis (L.) Bartalini	annual. T	Mediter.	Ancient.Ar.d.	MezoXerophyte	IV-VII
7. M. truncatula Gaertn.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	IV-VII
8. M. rigidula (L.) All.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	IV-VI
9. M. minima (L.) Bartalini	annualT	Mediter.- **Front Asia**	Ancient.Ar.d.	Xerophyte	IV-V

10. M. denticulata Willd.	annual. T	Mediter.	Ancient.Ar.d.	MezoXerophyte	IV-VI(VII)
11. Melilotus officinalis (L.) Pall.	biennial. HK	Western -palearkt.	Boreal	MezoXerophyte	V-VI, VI-IX
12. M. neapolitanus Ten.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	V,VI
13. M. indicus (L.) All.	annual. T	Mediter.-Ir.Tur.	Ancient.Ar.d.	MezoXerophyte	VI, V-VI
14. Trifolium arvense L.	annual. T	Western -palearkt.	Boreal	Xerophyte	VI-VII,VI-VIII
15. T. pratense L.	perennial. HK	Western -palearkt.	Boreal	MezoXerophyte	V-VII
16. T. lappaceum L.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	V,VI
17. Amoria bonannii (C. Presl) Roskov	perennial. HK	Mediter.	Ancient.Ar.d.	Mesophyte	V-VI
18. A. repens (L.) C. Presl	perennial. HK	Palearkt.	Boreal	Mesophytet	V-VII, VII-VIII
19. A. resupinata (L.) Roskov	annual. T	Mediter.	Ancient.Ar.d.	MezoXerophyte	IV-V, V-VI
20. Chrysaspis campestris (Schreb.) Desv.	annual. T	Europa	Boreal	MezoXerophyte	V-VI, VI-VII
21. Ch. micrantha (Viv.) Hendrych	annual. T	Atl.– Mediter.	Boreal	MezoXerophyte	V-VI
22. Astragalus asteriasStev. ex Ledeb.	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	IV
23. A.hamosus L.	annual. T	South -Ir.Tur.	Ancient.Ar.d.	Xerophyte	IV-V, V-VI
24. o A. stevenianus DC.	perennial. HK	Iber.	Caucaus	Xerophyte	IV-V, VI
25. A. striatellus Pall. ex Bieb.	annual. T	Turan	Desert	Xerophyte	IV-V, V-VI
26. A. tribuloides Delile	annual. T	Mediter.- Ir.-Tur.	Ancient.Ar.d.	Xerophyte	III-IV
27. A. reticulatus Bieb.	annual. T	Sarmat	Grey	Xerophyte	V-VI
28. Glycyrrhiza echinata L.	perennial. HK	Unbeing known	M. o	Mesophyte	V-VII, VII-IX
29. G. aspera Pall.	perennial. HK	Turan	Desert	Xerophyte	(V)VII, VI (VII)
30. G. glabra L.	perennial. HK	Mediter.-Ir.-Tur.	Ancient.Ar.d.	MezoXerophyte	V-VII, VII-IX
31. G. foetidissima Tausch	perennial. HK	The east Europa	Boreal	MezoXerophyte	VI-VII, VII-VIII
32. Coronilla scorpioides (L.) Koch	annual. T	Mediter.	Ancient.Ar.d.	Xerophyte	IV-V
33. Securigera varia (L.) Lassen	perennial. HK	Europa	Boreal	MezoXerophyte	V-VII
34. Onobrychis cyri Grossh.	perennial. HK	The north Caucas-Iber.	Caucaus	Xerophyte	V-VI,VI-VII
35. O. caput–galli (L.) Lam.	biennial. HK	Mediter.	Ancient.Ar.d.	Xerophyte	IV.V
36. O. vaginalisC.A.Mey.	perennial. HK	Alban	Caucaus	Xerophyte	IV-V, V-VI
37. Alhagi pseudalhagi (Bieb.) Fisch.	perennial. HK	Malasiya-Turan	Ancient.Ar.d.	Xerophyte	VI- VII
38. Vicia angustifolia Reichard	annual. T	Europa	Boreal	Xerophyte	V,V-VI
39. V. cinerea Bieb.	annual. T	Turan	Desert	Xerophyte	IV-V, IV-VI
40. V. sativa L.	biennial. HK	Europa	Boreal	MezoXerophyte	V, V-VI
41.V. cordataWulf. ex Hoppe	annual. T	Unbeing known	M. o	Xerophyte	IV-V, V-VI

42.V. varia Host	annual. T	Europa- Mediter.	Boreal	MezoXerophyte	V-IX
43. Lathyrus aphaca L.	annual. T	Mediter.-Atlai	Ancient.Ar.d.	MezoXerophyte	(IV)V-VIII,VI-IX
44. L. annuus L.	annual. T	Mediter.	Ancient.Ar.d.	MezoXerophyte	V-VI
45. L. hirsutus L.	annual. T	Mediter.-Europa	Ancient.Ar.d.	MezoXerophyte	V-VI, VII-VIII

Analysis accoording ecological groups of cereals showed that 10 species grow in mesophyte, 50 species in xerophyte, 16 species in mesoxerophyte condition. 3 species of Legumes grow in mesophyte condition, 24 species in xerophyte, 19 species iin mesoxerophyte condition.

Reference

Agaguliev I. M. (2000). The flora and vegetation of the South-East Shirvan. Baku, Publishing House. Baku State University, 147s. (russian)

Aliev G. A., Khalilov M. U. (1976). Tugai forests of Azerbaijan (modern state and ways of improvement and recovery). B., "Elm", 135 p.(russian)

Beideman I. N. (1960). The study of plant phenology. Proc. Field geobotany, *USSR Academy of Sciences, 2*, 330-360. (russian)

Braun – Blanguet J. Pflanzensoziologie. (1964). Crundzuge der vegetation skunde. 3. Auflage. Wein; New York; Springer Verlage, 830 s.

Cherepanov S. K. (1995). Vascular plants of Russia and adjacent states (the former USSR). Russian edition. SPB: Peace and family, 992 p. (russian)

Flora of Azerbaijan. Azerb. SSR, Baku, 1950-1961, vol. I-VIII.(russian)

Flora of the USSR. Moscow, Leningrad, USSR Academy of Sciences, 1934-1960. m. I-XXX.(russian)

Gadzhiev V. J. (1983). Protection of the gene pool of flora and vegetation of Azerbaijan // In Proc. Protection of the natural flora of the gene pool. Novosibirsk, Nauka, 63-69.(russian)

Grossgeim A.A. (1936). Analysis of the flora of the Caucasus, *Mat. BIN Az FAN SSSR, 1*, 257.(russian)

Hajiyev V. D. (1990). On the protection of flora Azerbaijan // Math. Azerb. *Series of biological sciences, 1*. 3-11. (russian)

Mammadov G. Sh., (2007). Sosial-economical and ecological bases of effective usage of soil sources in Azerbaijan. Bakı. «Elm», 856p. (azerb.)

Mammadov G. Sh., Khalilov M. Y. (2006). Ecology, environment and human. Bakı, «Elm», 608p. (azerb.)

Portenier N. N. (2000). Methodological issues highlight geographical elements of flora of the Caucasus. *Bot. J., 85*(6), 76-84.(russian)

Portenier N. N. (2000). The system of geographical elements of flora of the Caucasus. *Bot. J., 85*(9), 26-33.(russian)

Raunkiaer C. (1934). The life forms of plants and statistical plant geography. *Oxford*, 48-154.

Salayev M. E. (1991). Diagnosis and classification of soils of Azerbaijan. Publishers of "Elm". Baku-240 p.(russian)

Serebryakov I. G. (1964). Life forms of higher plants and their study. In the book .: geobotany Field. - *M* . *USSR*. *3*. 530 p.(russian)

Shennikov A. P. (1938). General comments on the method of routing geobotanical studies Methods of geobotanical field studies. A M: Publishing House of the USSR Academy of Sciences, 5-27. (russian)

Copyright Disclaimer