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Genetic resources family *Fabaceae* Lindl. in the flora of Azerbaijan

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Abstract
The article provides information about the kinds of genetic resources of plants belonging to the family of legumes Fabaceae Lindl. The flora of Azerbaijan. It has been established that it is currently is represented 61 species and 442 genus. Indicates rare, endangered, relict and endemic species wild congeners, the protection which shall be deemed necessary.

Keywords: family, genus, species, legumes, resources, rare, endangered, relict, endemic, protection

1. Introduction

Azerbaijan occupies an area of 86, 6 thousand sq. m.km. The richness of flora republic is determined by an exceptional variety of geographic and natural-historical conditions, as well as the complex history of flora, formed under the influence of neighboring and distant floristic regions. Based on the literature data and the processing of numerous herbarium materials determined that the flora of Azerbaijan found 4500 species belonging to the families and 1000 genus. Of these, 63 species of higher spore, 24 - gymnosperms, 4413 – angiosperms (4, p. 16-22).

825 species of flora within the Republic of essential oil plants, 800 species of medicinal, 600 species of alkaloid, 460 dye plants, 400 vitamins, 200 tanning plants, 200 rubber plants, 150 varieties of fruit and berry crops and other (7, p. 14-25)

One of the families which have got the most number of species is the Legume *Fabaceae* Barnhart family. In Azerbaijan this family has been presented with 442 species included into 61 genera (tabl.) [3, p.199-545]. On the purpose of genetic resources of grain-legume plants & their wild relatives gen/res their spread areals & bioecological peculiarities which represent *Fabaceae* family. Study there were conducted expeditions every year. In the years of 2001-2004 scientific-research activities have been conducted in 20 botanical-geographical regions of the republic where we took part in an International Expedition. As a result, 1800 plants seed concerning to about 2300 plants accessions & over than 3000 plants herbarium material have been collected. On the basis first in the Genetic Resources Institute of the Azerbaijan National Academy of Sciences a Herbarium pool has been established in october 22, 2004. 35 per cent of the collected seed material is of grain-legume, 42 per cent is of wild & cultural cereals and the rest 23 per cent of the collected seed material is of medical, food, essential oil & rave plants. Seeds collected during the expedition in accordance with the international descriptors require were developed, they have been passed to the Gene bank established in the Azerbaijan National Academy of Sciences, Genetic Resources Institute, at the same time they were duplicated by their regeneration at the experimental site of the institute.

The analysis of the taxonomic composition of the latest data showed that the most species rich mountainous part Nakhchivan AR (about 3 thousand) [10, p. 26-31]. Pretty close to it is the Cuban mountain range of the Greater Caucasus (1700 species). In the central part of the Lesser Caucasus mountain range identified 1316 species, in the southern part of the Lesser Caucasus - 1250, the Kura-Araz lowland - 1215 species. In the study of the taxonomic composition revealed that the flora of the republic in species most richly represented the family Asteraceae (about 550 species), Poaceae - 453, Fabaceae - 450 and others [7, p. 16-22]. Kur-Araz lowland is the largest district. The latest data showed that the Here there are more than 1570 species. Of these, family Fabaceae Lindl. has been presented with 116 species included into 40 genera [8, p. 92-95].

Table 1: Taxonomic range the family *Fabaceae* Lindl. flora of Azerbaijan

№	Names of	Number of species	Percentage of the total (442)
1.	*Albizia* Benth.	1	0,23
2.	*Acacıa* Hill	1	0,23
3.	*Alhagi* Hill	2	0,45
4.	*Amoria* C.Presl	7	1,58
5.	*Amorpha* L.	1	0,23
6.	*Anthyllis* L.	2	0,45
7.	*Arachis* L.	1	0,23
8.	*Astracantha* Podlech	16	3,62
9.	*Astragalus* L.	135	30,54
10.	*Argyrolobium* Eckl. et Zeyh.	2	0,45
11.	*Caragana* Fabr.	3	0,68
12.	*Cassia* L.	2	0,45
13.	*Cajanus* Adans.	1	0,23
14.	*Cercis* L.	1	0,23
15.	*Chrysacpis* Desv.	2	0,45
16.	*Cicer* L.	3	0,68
17.	*Citisus* L.	1	0,23
18.	*Colutea* L.	5	1,13
19.	*Dorycnium* Mill.	2	0,45
20.	*Ewersmannia* Bunge	1	0,23
21.	*Galega* L.	2	0,45
22.	*Genista* L.	2	0,45
23.	*Gleditsia* L.	2	0,45
24.	*Glycine* Willd. (Dolichos L.p.p.)	2	0,45
25.	*Glycyrrhiza* L.	5	1,13
26.	*Halimodendron* Fisch. ex DC.	1	0,23
27.	*Hedipnois* Hill	1	0,23
28.	*Hedysarum* L.	8	1,81
29.	*Hippocrepis* L.	1	0,23
30.	*Indigofera* L.	1	0,23
31.	*Lagonichium* L.	1	0,23
32.	*Lathyrus* L. (Orobus L.)	22	4,98
33.	*Lens* Mill.	3	0,68
34.	*Lespedeza* L.	1	0,23
35.	*Lotus* L.	6	1,36
36.	*Lupinus* L.	2	0,45
37.	*Medicago* L.	21	4,75
38.	*Melilotus* Hill	5	1,13
39.	*Melilotoides* Heist. ex Fabr.	2	0,45
40.	*Onobrychis* Hill	21	4,75
41.	*Ononis* L.	5	1,13
42.	*Ornithopus* L.	1	0,23
43.	*Oxytropis* DC.	8	1,81
44.	*Phaseolus* L.	3	0,68
45.	*Pisum* L.	2	0,45
46.	*Pueraria* DC. (Dolichos L.)	1	0,23
47.	*Pseudosophora* (DC.) Sweet	1	0,23
48.	*Robinia* L.	3	0,68
49.	*Scorpiures* L.	1	0,23
50.	*Securigera* DC.	3	0,68
51.	*Spartium* L.	1	0,23
52.	*Sphaerophysa* DC.	1	0,23
53.	*Stizolobium* R.Br.	1	0,23
54.	*Styphnolobium* Schott	2	0,45
55.	*Trifolium* L.	43	9,73
56.	*Trigonella* L.	20	4,52
57.	*Radiata* Medik.	1	0,23
58.	*Vavilovia* Fed.	2	0,45
59.	*Vicia* L.	42	9,95
60.	*Vigna* Savi.	2	0,45
61.	*Wistaria* Nutt.	1	0,23
Total:		442	100,0

Since the very ancient period *Pisum* L., *Lathyrus* L., *Cicer* L. *Phaseolus* L. *Faba, Lens* Mill. *Glicyne* Willed. *Lupinus* L., *Vigna* Savi, *Araxis* L., *Vicia* L. and other grain-legume being one of the main feed of people they are standing on the second place after the cereals in field works. However many endemic and valuable species varieties and forms of grain-legume used since ancient times have been died, lost as well some of them are dangerous at present. The major goal of the conducted by us researches is just to see find out, reproduce and to return them to farm again [5, p. 100-103; 10, p. 134-146].

Three species of *Pisum* L. as: *Pisum humile* Boiss. et. Noe, *Pisum elatius* Bieb. and *Pisum sativum* L. are known in Azerbaijan. But due to taxonomic changes held within the genus and *Pisum elatius* Bieb. was accessed as one species, *Pisum elatius* Bieb. *(Pisum humile* Boiss. & Noe). They were collected in the territory of Nakhchivan, Gabala, Guba and Lenkoran regions of the Republic. *Pisum sativum L.* often meets and sometimes is cultivated in Azerbaijan. The sowing on the experimental site of the Genetic Resources Institute has been resulted well. There are two varieties of sowing pea in Azerbaijan, they are: "Akhalkalak" and "AzNIXI-1508" weight of 1000 pieces of the pea is 200-220 gr. The *Lathyrus* L. genus has got about 200 species. 18 species of them are meet in Azerbaijan and one species of them *L. sativus* L. is cultivated. During the Joint International Expedition (of ICARDA and AGRI) in 2001-2004 years seeds and herbarium of the following species have been collected: *L. aphaca* L., *L. inissalia* L., *L. annuus* L., *L. cicera* L., *L. sativus* L., *L. chlorunthus* Boiss, *L. hirsutus* L., *L. odoratus* L., *L. roseus* Stev., *L. tuberosus* L., *L. miniatus* Bieb., *L. setifolius* L., *L. anguletus* L., *L. sphaericus* Retz., *L. inconspicuus* L., *L. ipratensis* L., *L. incurrus* (Rath.) Willd. [2, 3, 5, 9].

S.K. Cherepanov have been adjusted 5 species of *Orobus* L. genus here which was near to this genus in taxonomic aspect [1, p. 435-504]. There are several variety diversities of sowing lentil as: *leucodepressus, leuco tetragon us, albus, coloratus, biflorus, azureus* . The field lentil variety of this species is (divided into districts) regionired in Azerbaijan. 1000 grain's weight is 300-360 gr. et it has 30, 8 per cent of protein. Also very significant species of *Vicia L.* include into grain-legume. 48 of 150 species of the genus were spread in Caucasus and 42 of them in Azerbaijan. In the process of the expeditions seed et herbarium materials of the below indicated species were collected from Lenkoran-Astara, Guba-Khachmaz, Sheki-Zaqatala, Kura-Araz, Gyanja-Gazakh, Davechi-Siyazan & other regions of the Republic: *Vicia cracea* L. *subsp. stenophylla, V. canescens* Labill. *subsp. variegata,* V. *monanthos* (L.) Des! *subsp. monantha, subsp. nigra, V. cappadocica* Boiss. & Bal., *V. sativa* L. *subsp. nigra, V. villosa* Rorh., *V. tetrasperma* (L.) Sehreb., *V. hirsuta* L., *V. lathuroides* L., *V. Ioiseleurii* (Bieb) Litv., *V. pannonica* Crantz., *V. grandiflora* Scop., *Vinarbonensis* L., *V. ervilia* (L.) Willd., *V. angustifoiia* Reichard, *V. balansae* Boiss, *V. ciceroidea* Boiss., *V. faba* L. & others. They are maintenance in a Gene bank with special condition by renewing et duplicating.

Two species of the 27 of *Cicer* L. genus of the pea are met in Azerbaijan. They are: *Cicer arietinum* L. & C. *anatolicum Alel.* The pea C. *anatolicum Alel* is met only

Nakhchivan Autonomous Republic of Azerbaijan. It mainly grows on the cold mountains of Gemigaya, Gajig, Nus-nus, on the height of 2000-2700 m above the sea level. It's pea as a main food grows in all of the regions of Azerbaijan in irrigated .& dryland conditions 1000 grains weight depending on the condition is 300-350 gr. The mam variety diversities are: *bohemico, bohemico-bigritum, turcico-artum* .& etc. Widely cultivated in Azerbaijan pea with white seed distinguishes with its calorie, taste quality et economical indexes. The mentioned pea seeds are collecting & reproducing. *Phaseolus* L. has got over than 150 species. There are cultivated species on the purpose of food, feed, decorative & green fertilizer among them. The used in food and the cultivated for grain products is an ordinary haricot species. The varieties of this are distinguished with the grain's shape. "Galibiyyat", local "Piyada" and "Red Indian" varieties of the haricot have been regionised. As they differ according to the shape of the grain they neither are not similar according to the weight of the grain. The weight of 1000 grains of them changes in the range of 250-400 qr. *Faba* Hill. and its species has been included into *Vida* L. genus of the grain - legume, because of several taxonomic characteristics. *V. faba L. (Faba bona* Medik., *F. vulgaris* Moench.). There are their groups relative to all over the world as: Central Europe, West Europe, North, Dagestan Uplands, Mediterranean Sea a big amount of species diversities and varieties which include into the Middle Asia groups. The weight of 100 grains changes between 190-240 gr. and 1250-1350 gr. This quantity is 1160-1350 gr. in the Russia group [BH-IK]. There are three species of *Lens* Mill. genus in Azerbaijan. *Lens ervoides* (Brign.) Grande has been collected from Yardimli and upland part of Lenkoran, as well from the lower and upper mountain belt, from the bushy and wood fields of Gabala region. This species is used as feed *L. culunaris* Medik. is cultivated in many regions of the Republic [2, p. 100-160; 3, p. 195-545].

It's native land is the Front Asia. *Lorientalis* (Boiss.) Schmalh. is spread only in Nakhchivan zone. It is a rare plant. This species has been spread around the Water Basin of Vaykhir of Nakhchivan from a stony and rocky area. The weight of 1000 seeds of much spread varieties of the *L. orientalis* (Boiss.) Schmalh. as: "Azeri", "Luna-9", "Naryadnaya-3" and "Petrovsk - 41105" changes in the range of 32-33 and 55-56 gr. There is a species of *Glycine* Willd. (*dolichos* L.p.p.) in Azerbaijan (*Glycine hispida* (Mocnch.) Maxim.). According to the new nomenclature this species is indicated as *G. max* (L) Merr. at present [6, p. 127-188].

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