



Flora, life form and chorology of plants in Rangelands watershed of Shirkooh of Yazd province, Iran

Elham Fakhimi*

Research Division of Natural Resources, Chaharmahal and Bakhtiari Agricultural and Natural Resources Research and Education Center, areeo, Shahrekord, Iran

Article published on September 17, 2017

Key words: Floristic composition, Life form, Chorology, Yazd, Iran

Abstract

Land use and land transformation are mainly threatened to biodiversity. Grazing as a land use is not incompatible with biodiversity conservation if proper management is applied. The conservation of plant diversity is a major objective in rangeland management. Recognition of habitats and conditions of species presences in different situations can be effective in proper utilization of vegetation. Unique ecological and climatic conditions in rangelands watershed of Shirkooh make it a remarkable habitat for the floristic studies. This region is located between of 53° 30' to 53° 54' longitude and 31° 13' to 31° 38' latitude in center of Iran in Yazd province. Average altitude of region is 2450 m. Surveys were conducted during active growth periods in 2014 and 2015. Plant species were identified and their chorology and life form determined through laboratory examinations and by using reference books. Floristic surveys resulted in identification of 236 plant species, belonged to 168 genus and 38 families. Asteraceae, Cruciferae and Chenopodiaceae were respectively the most abundant plant families. Among the life forms, Hemicryptophytes, Chamaephytes, Therophytes and Geophytes included 36, 24, 23 and 8% of the total species, respectively. Irano-Turanian was the most dominant (77%) Chorotypes. The dominance of Hemicryptophytes, Chamaephytes and Therophytes can be referred to the simultaneous effects of climate fluctuations and livestock grazing on the flora of winter and rural rangelands in Shirkooh. The specific situation of the region, Provides the conditions given for the presence of other vegetation growing regions And the flora of the region's richness and diversity is good.

*Corresponding Author: Elham Fakhimi ✉ e_fakhimi@yahoo.com

Introduction

The diversity of plant life is an essential underpinning of most of our terrestrial ecosystems. Humans and most other animals are almost totally dependent on plants, directly or indirectly. Another important role of plant life is the provision of ecosystem services the protection of watersheds, stabilization of slopes, moderation of climate and the provision of habitat for much of our wild fauna. While it is generally accepted today that the conservation of all biodiversity should be our goal, understanding the natural distribution of plants (Floristic studies) is central to conserving biodiversity and managing ecosystems for long-term viability and sustainability. Iran is a country with high diverse climate and topography, which leads to diversity in natural and biological resource. Therefore, for management in order to conservation of this diversity, prevention from destruction of habitats, determining the native, resistant and endangered species and supporting them, recognition of medicinal plants for proper use of them, Floristic studies is necessary. Nowadays, many studies in this field have been done by researchers, such as: Floristic study of Plang darreh-Qom (Mirzaei, 2001), plant species of Vanak-semirom- Esfahan (Parishahi, 2003), Floristic study of Dalamper-West Azarbaijan (Shaikhi *et al*, 2005) Floristic study introduction to the flora, Life form and plant geographical distribution of Darrah Damgahan in Mehriz -Yazd province. (Zarezadeh *et al*, 2007), Floristic study and estimating species diversity indices in a rangeland of middle Iran. (Khojasteh *et al*, 2012) while this sort of studies is very useful for planning with refer to protection, reclamation and management of valuable species, present study was done in rangelands watershed of Shirkooh in 2014-2015.

Material and methods

Site description

The study was conducted at watershed of Shirkooh during season of 2014 and 2015. This region is located between of 53°, 30'to 53°, 54'longitude and 31°, 13'to 31°, 38'latitude in center of Iran in Yazd province. Average altitude of region is 2450 m and Average annual temperature also varies from a maximum (13-14 °C) to the minimum (10-11 °C).

Soil texture was silty loamy. The region has recognized as a semi-arid area. Average annual precipitation (January through December) based on 20-year period (1995 to 2015) is 230 mm. The area has been mainly grazed by native goat breed. Dominant vegetation is *Aetemisiasieberi*, *Astragalus myriacanthus*, *Artemisia aucheri*, *Hertia angutifolia*, *Lactuca serriola*

Methods

In this investigation, plant specimens, were collected in different seasons. The samples were transferred to the herbarium and were pressed and recognized according to the Flora of Iran (Assadi, 1988-2002), Flora Iranica (Rechinger, 1963-2000), Colored Flora (Ghahreman, 1975-2000) and Flora of Iran (Mobayen, 1980-1996).

In this manner geographical plant distribution also determined according these Flora. Determining the life form was done by Raunkiaer's classification (Raunkiaer, 1934). Chorology species was determined by Zohary, 1963; Zohary, 1973; White & Leonard, 1991; based on the classification of vegetation areas.

Results

Floristic composition

The result of study shows that about 236 species belong to 168 genus and 38 families have been recognized. The biggest family of the region is Asteraceae with 35 sp. Brassicaceae with 24 sp, Chenopodiaceae with 22 sp, Fabaceae with 21 sp, Lamiaceae and Poaceae with 20 sp are in the next order (e.g. Fig. 1).

Among the existing genera, *Astragalus* genera with 16 sp, *Salsola* genera with 7 sp, *Nepeta*, *Euphorbia* and *Acanthophyllum* genera are the most important genera of plant. Plant classification, based on Raunkiaer's life forms revealed Hemicryptophytes as the most abundant (36% of total) species. Chamaephytes, Therophytes, Geophytes and Phanerophytes, only contained 24, 23, 8 and 7 percent of total plant species, respectively (e.g. Fig. 2).

Chorology of plants

Geographical distribution or Chorology plants in the study area was determined using flora and resources.

The results of this study indicate that species with Iran-Turanian Chorotype 77 % (with 117 species) of

the flora of the region and species with Sahara-Sindian Chorotype 0.9% (with 2 species) of the flora of the region, are the largest and smallest Chorotype formation respectively (e.g. Fig. 3).

Florestic list of Shirkooh region is provided in Table 1.

Table 1. List, Life Form and Chorology of Plants in rangelands watershed of Shirkooh.

Scientific name of plant species in its family	Life form	Chorotype
Amaryllidaceae		
<i>Ixilirion tataricum</i> (Pall.) Herb.	Ge.b	IT
Anacardiaceae		
<i>Pistacia atlantica</i> subsp. <i>Mutica</i> (Fisch. & C. A. Mey.) Rech. f.	Ph	IT
<i>Pistacia khinjuk</i> stocks	Ph	IT
Apiaceae		
<i>Bunium persicum</i> (Boiss) B. Fedtsch.	Ge.t	IT, M
<i>Bupleurum falcatom</i> L.	He	ES, IT
<i>Ducrosia anethifolia</i> (DC.) Boiss.	He	IT
<i>Eryngium bungei</i> Boiss.	He	IT
<i>Frula assa.foetida</i> L.	He	IT
<i>Frula ovina</i> (Boiss.) Boiss.	He	IT
<i>Pimpinella dichotoma</i> Boiss. et Hausskn.	Ge.r	IT
<i>Psammogeton canescens</i> (DC.) Vatke	Th	IT
<i>Pycnocycla spinosa</i> Decne. ex Boiss.	He	IT
<i>Zosimia absinthifolia</i> (Vent.) Link	He	IT
Apocynaceae		
<i>Trachomitum venetum</i> (L.) Woods.	He	IT, M
Asparaginaceae		
<i>Asparagus breslerianus</i> Schult	Ge.r	IT
Asteraceae		
<i>Achillea wilhelmsii</i> C. Koch	He	IT
<i>Acroptilon repens</i> (L.) DC.	He	IT
<i>Amberboa turanica</i> Iljin	Th	IT
<i>Artemisia aucheri</i> Boiss.	Ch	IT
<i>Artemisia persica</i> Boiss.	Ch	IT
<i>Artemisia sieberi</i> Besser.	Ch	IT
<i>Centaurea ispahanica</i> Boiss.	He	IT
<i>Cirsium congestum</i> Fish. & C. A. Mey. ex DC.	He	IT
<i>Cousinia deserti</i> Bunge	He	IT
<i>Cousinia onopordioides</i> Ledeb.	He	IT
<i>Cousinia piptocephala</i> Bunge	He	IT
<i>Crepis sancta</i> (L.) Babocok. Subsp. <i>Iranica</i> Rech. f.	Th	IT
<i>Echinops ceratophorus</i> Boiss.	He	IT
<i>Gundelia tournefortii</i> L.	He	IT

<i>Helichrysum davisianum</i> Rech. f.	Ch	IT
<i>Hertia angustifolia</i> (DC.) O. Kuntze	Ch	IT
<i>Heteroderis pusilla</i> (boiss.) boiss.	Th	IT
<i>Jurinea radians</i> Boiss.	He	IT
<i>Jurinea stenocalathia</i> Rech. f.	He	IT
<i>Lactuca glaucifolia</i> Boiss.	Th	IT
<i>Launaea acanthodes</i> (Boiss.) O. Kuntze	He	IT
<i>Oligochaeta minima</i> (Boiss.) Briq.	Th	IT
<i>Onopordon caramanicum</i> (Bornm.) Bornm.	He	IT
<i>Outreya carduiformis</i> Jaub. & Spach	He	IT
<i>Pentanema multicaule</i> Boiss.	He	IT
<i>Pulicaria gnaphalodes</i> (Vent.) Boiss.	He	IT, SS
<i>Scariola orientalis</i> (Boiss.) Sojak	He	IT
<i>Scorzonera paradoxa</i> Fisch. & C. A. Mey.	Ge.t	IT
<i>Scorzonera tortuosissima</i> Boiss.	Ge.t	IT
<i>Senecio glaucus</i> L.	Th	IT, M, SS
<i>Tanacetum fruticosum</i> Ledeb.	He	IT
<i>Tanacetum lingulatum</i> (Boiss.) Bornm.	He	IT
<i>Thevenotia persica</i>	Th	IT
<i>Tragopogon collinus</i> DC.	He	IT
<i>Varthemia persica</i> DC.	He	IT
Berberidaceae		
<i>Berberis integerrima</i> Bunge	Ph	IT
Boraginaceae		
<i>Arnebia decumbens</i> (Vent.) Coss. & kral.	Th	IT, SS
<i>Heterocoryum laevigatum</i> (Kar. & Kir.) A. DC.	Th	ES, IT
<i>Lappula spinocarpos</i> (Forssk.) Aschens & O. Kuntz	Th	IT, SS
<i>Onosma stenosphon</i> Boiss.	He	IT
<i>Paracaryum undulatum</i> Boiss.	He	IT,SS
Brassicaceae		
<i>Alyssum linifolium</i> Steph. Ex Willd.	Th	IT, M, ES, SS
<i>Alyssum marginatum</i> Steud. ex Boiss.	Th	IT
<i>Alyssum persicum</i> Boiss.	Th	IT
<i>Clypeola aspera</i> (Grauer) Turrill	Th	IT, SS
<i>Conringia perfoliata</i> (C. A. Mey.) Busch	Th	IT
<i>Crambe orientalis</i> L.	He	IT
<i>Erysimum crassicaule</i> (Boiss.) Boiss.	He	IT
<i>Euclidium syriacum</i> (L.) R. Br	Th	IT
<i>Fibigia umbellata</i> (Boiss.) Boiss.	ch	IT
<i>Fortuynia bungei</i> Boiss.	He	IT, SS
<i>Hesperis leococlada</i> Boiss.	He	IT
<i>Hesperis persica</i> Boiss.	He	IT
<i>Isatis minima</i> Bge.	Te	IT
<i>lepidium latifolium</i> L.	He	ES, IT, M

<i>Malcolmia africana</i> L. R. Br.	Th	IT, SS, M
<i>Matthiola farinosa</i> Bunge.	He	IT
<i>Matthiola alyssifolia</i> (DC.) Bornm.	He	IT
<i>Matthiola chenopodiifolia</i> Fisch. & C. A. Mey.	Th	IT
<i>Moriera spinosa</i> Boiss.	Ch	IT
<i>Pseudocamelina glaucophylla</i> (DC.) N. Busch	He	IT
<i>Sterigmostemum sulphureum</i> (Bank & Soland.) Bornm.	He	IT
<i>Torularia torulosa</i> (Desf.) O. E. Schulz	Th	IT, (SS)
Capparidaceae		
<i>Capparis spinosa</i> L.	Ch	IT, M, SS
<i>Cleom coluteoides</i> Boiss.	Ch	IT, SS
Caryophyllaceae		
<i>Acanthophyllum bracteaum</i> Boiss.	Ch	IT
<i>Acanthophyllum glandulosum</i> Bunge ex boiss.	Ch	IT
<i>Acanthophyllum heratense</i> Schiman - Czeika	Ch	IT
<i>Acanthophyllum sordium</i>	Ch	IT
<i>Diantus crinitus</i> SM. & Hausskn.	Ch	IT
<i>Diantus szowitzianus</i> Boiss	Ch	IT
<i>Gymnocarpus decander</i> Forssk.	Ch	SS
<i>Saponaria orientalis</i> L.	Th	IT, ES
<i>Stellaria blatteri</i> Mattf	Th	IT
Chenopodiaceae		
<i>Anabasis aphylla</i>	Ch	IT
<i>Anabasis Haussknechtii</i> Bunge ex Boiss.	He	IT
<i>Anabasis setifera</i> Moq.	He	IT, SS
<i>Atriplex dimorphostegia</i> Kar & Kir	Th	IT, SS
<i>Erotia ceratoides</i> (L.) C. A. Mey.(Krascheninnikovia ceratoides)	Ch	IT
<i>Gamanthus gamocarpus</i> (Moq.) Bunge	Th	IT
<i>Halanthium rariflofrum</i> C. Koch	Th	IT
<i>Halothamnus auriculus</i> (Moq.) Botsch.	Ch	IT
<i>Halothamnus glaucus</i> (M. B.) Botsch.	Ch	IT
<i>Halothamnus subaphyllus</i> (C. A. Mey.) Botsch.	Ch	IT
<i>Haloxylon persicum</i> Bge. ex Boiss.	Ph	IT
<i>Kochia stellaris</i> Moq.	Th	IT
<i>Londesia eriantha</i> Fisch. & C. A. Mey.	Th	IT
<i>Noaea mucronata</i> (Forsk) Aschers. & Schewienf.	He	Cosm
<i>Salsola arbuscula</i> Pall	Ch	IT
<i>Salsola arbusculiformis</i> Drob.	Ch	IT
<i>Salsola crassa</i> M. B.	Th	IT
<i>Salsola kernerii</i> (Wol.) Botsch.	Ch	IT
<i>Salsola nitraria</i> Pall.	Th	IT, SS
<i>Salsola orientalis</i> S. G. Gmelin (Rigida)	Ch	IT
<i>Salsola tomentosa</i> (Moq.) spach.	Ch	IT
<i>Suaeda acuminata</i> (C. A. Mey.) Moq.	Th	IT

Convolvulaceae		
<i>Convolvulus fruticosus</i> Palls	He	Cosm
Dipsacaceae		
<i>Pterocephalus gedrosiacus</i> Rech. f., Aell. & Esfand.	He	
<i>Scabiosa olivieri</i> Coult	Th	IT
Ephedraceae		
<i>Ephedra intermedia</i> Schrenk & C.A.Mey.	Ch	SE, IT
<i>Ephedra strobilacea</i> Bunge	Ch	IT
Euphorbiaceae		
<i>Andrachne fruticulosa</i> Boiss.	He	IT
<i>Andrachne telephioides</i> L.	He	IT, M, (SS)
<i>Euphorbia connate</i> Boiss.	He	IT
<i>Euphorbia gedrosiaca</i> Rech. F., Aellen, Esfandiari	He	IT
<i>Euphorbia helioscopia</i> L.	Th	IT, M, ES
<i>Euphorbia heteradena</i> Jaub. & Spach.	He	IT
Fabaceae		
<i>Alhagi Pseudalhagi</i> (M. B.) Desv.	He	IT
<i>Astragalus albispinus</i> Sirj. & Bornm.	Ch	IT
<i>Astragalus campylanthus</i> Boiss.	Ch	IT
<i>Astragalus ischredensis</i> Bge.	He	IT
<i>Astragalus macropelmatus</i> Bge.	He	IT
<i>Astragalus Kahiricus</i> DC.	He	IT, SS
<i>Astragalus candolleanus</i> Boiss.	He	IT
<i>Astragalus Mercklini</i> Boiss. & Buhse	Ch	IT
<i>Astragalus mollis</i> M. B.	He	IT, Pal
<i>Astragalus callistachys</i> Buhse	Ch	IT
<i>Astragalus biovulatus</i> Bunge.	He	IT
<i>Astragalus myriacanthus</i> Boiss.	Ch	IT
<i>Astragalus glaucacanthus</i> Fischer	Ch	IT
<i>Astragalus ochrochlorus</i> Boiss. & Buhse	Ch	IT
<i>Astragalus strictifolius</i> Boiss.	Ch	IT
<i>Astragalus Wardoensis</i> Boiss. & Kotschy	Ch	IT
<i>Astragalus melanocalyx</i> Boiss. & Buhse	He	IT
<i>Ebenus stellata</i> Boiss.	Ch	IT
<i>Onobrychis aucheri</i> Boiss.	Th	IT
<i>Onobrychis cornuta</i> (L.) Desv.	Ch	IT
<i>Trigonella elliptica</i> Boiss.	Ch	IT
Geraniaceae		
<i>Biebersteinia multifida</i> DC.	Ge.t	IT
<i>Erodium cicutarium</i> (L.) L' Her. ex Aitton	Th	ES, IT, M
<i>Geranium rotundifolium</i> L.	Th	ES, IT, M
Iridaceae		
<i>Iris songarica</i> schrenk.	Ge.r	IT

Lamiaceae		
<i>Ajuga chamaecistus</i> Ging. ex Benth.	Ch	IT
<i>Hymenocrater yazdianus</i> Rech. f.	Ch	IT
<i>Lagochillus macranthus</i> Fisch. & C. A. Mey.	Ch	IT
<i>Lallemantia royleana</i> (Benth.) Benth.	Th	IT
<i>Marrobium Crassidens</i> Boiss.	He	IT
<i>Marrobium vulgare</i> L.	He	IT
<i>Nepeta bracteata</i> Benth.	Th	IT
<i>Nepeta ispahanica</i> Boiss.	Th	IT
<i>Nepeta persica</i> Boiss.	He	IT
<i>Nepeta pungens</i> Benth.	Th	IT
<i>Phlomis orientalis</i> Mill. Gard	He	IT
<i>Salvia eremophila</i> Boiss.	Ch	IT
<i>Salvia reutriana</i> Boiss.(<i>reutreana</i>)	He	IT
<i>Stachys inflata</i> Benth.	He	IT
<i>Teucrium polium</i> L.	Cha	IT, M
<i>Thuspeinanta persica</i> . Briq.	Th	IT
<i>Thymus kotschyanus</i> Boiss & Hohen.	Ch	IT
<i>Zataria multiflora</i> Boiss.	Ch	IT, SS
<i>Ziziphora clinopodioides</i> Lam.	He	IT
<i>Ziziphora tenuior</i> L.	Th	IT
Moraceae		
<i>Ficus johannis</i> Boiss.	Ph	ES, IT, M
Orobanchaceae		
<i>Orobanche kotschy</i> Reut.	He	IT
Papaveraceae		
<i>Glaucium elegans</i> Fish. & C. A. Mey.	Th	IT
<i>Papaver tenuifolium</i> Boiss. & Hohen. ex. Boiss.	Th	IT
<i>Roemeria hybrida</i> (L.) DC.	Th	IT, M, SS
Plumbaginaceae		
<i>Acantholimon festucaceum</i> (Jaub. & spach.) Boiss	Ch	IT
<i>Acantholimon flexuosum</i> Boiss. & Hausskn. ex Bunge	Ch	IT
<i>Limonium iranicum</i> (Bornm.) Lincz.	He	IT
Poaceae		
<i>Aeluropus littoralis</i> (Gouan) Parl	Ge.r	IT, M, SS
<i>Agropyrum longe - aristatum</i> (Boiss.) Boiss.	Ge.r	IT
<i>Alopecurus apiatus</i> Ovcz.	Ge.r	IT, M, SS
<i>Boissiera squarrosa</i> (Banks & Soland.) Nevski	Th	IT
<i>Bromus danthoniae</i> Trin.	Th	IT
<i>Bromus squarrosus</i> L.	Th	IT, M
<i>Bromus tectorum</i> L.	Th	Cosm
<i>Eremopyrum bonaepartis</i> (Spreng.) Nevski	Th	IT
<i>Hordeum violaceum</i> Boiss. & Huet	He	
<i>Melica persica</i> Kunth.	Ge.r	IT, M

<i>Oryzopsis holciformis</i> (M. B.) Hack.	He	IT
<i>Pennisetum orientale</i> L. C. Rich.	Ge.r	IT
<i>Phragmites australis</i> (Cav.) Trin. ex Steud.	He	IT, M
<i>Poa bulbosa</i> L.	Ge.b	ES, IT, M
<i>Poa sinaica</i> Steud.	Ge.b	IT
<i>Psathyrostachys fragilis</i> (Boiss.) Nevski.	Ge.r	IT
<i>Stipa arabica</i> Trin. & Rupr.	He	IT
<i>Stipa barbata</i> Desf.	He	IT
<i>Stipagrostis plumosa</i> (L.) Munro ex T. Anders.	He	IT, SS, (M)
<i>Taeniatherum crinitum</i> (Schreb.) Nevski	Th	IT
Polygonaceae		
<i>Atraphaxis spinosa</i> L.	Ch	IT
<i>Polygonum afghanicum</i> Meisn.	He	IT
<i>Pteropyrum aucheri</i> Jaub. & Spach	Ch	IT
<i>pteropyrum olivieri</i> Jaub. & Spach	Cha	IT
Ranunculaceae		
<i>Ceratocephalus falcatus</i> (L.) Pers.	Th	M, IT
<i>Consolida persica</i> (Boiss.) Grossh.	Th	IT
Resedaceae		
<i>Ochradenus aucheri</i> Boiss.	Ph	SS
<i>Reseda lutea</i> L.	Th	M, IT, ES,SS
Rhamnaceae		
<i>Rhamnus pallasii</i> Fisch. & C. A. Mey.	Ph	IT
<i>Rhamnus persica</i> Boiss.	Ph	IT
Rosaceae		
<i>Amygdalus lycioides</i> (Spach.) var. lycioides	Ph	IT
<i>Amygdalus scoparia</i> Spach.	Ph	IT
<i>Amygdalus spinosissima</i> Bge.	Ph	IT
<i>Cotoneaster persica</i> Pojark	Ph	IT
<i>Cotoneaster racemiflous</i> C. Koch , Dendral	Ph	IT
Rubiaceae		
<i>Neogaillonia bruguiera</i> (A. Rich. ex DC.) Lincz.	He	IT
Rutaceae		
<i>Haplophyllum robustum</i> Bunge	He	IT
Scrophulariaceae		
<i>Bungea trifida</i> (Vahl) C. A. Mey.	Th	
<i>Linaria michauxii</i> Chav.	He	IT
<i>Scrophularia striata</i> Boiss	He	IT
Solanaceae		
<i>Hyoscyamus reticulatus</i> L.	He	IT
<i>Hyoscyamus senecionis</i> Willd.	He	IT
Tamaricaceae		
<i>Reaumuria cystoides</i> Adam.	Ch	
<i>Reaumuria alternifolia</i> (Labill.) Britten	Ch	IT

<i>Tamarix ramosissima</i> Ledeb.	Ph	ES, IT
<i>Thymelaeaceae</i>		
<i>Dendrostellera lessertii</i> (Wikstr.) Van. Tiegh	Ch	IT
Urticaceae		
<i>Parietaria judaica</i> L.	Ge.r	ES, IT, M
<i>Valerianaceae</i>		
<i>Valerianella tripalaris</i> Boiss. & Buhse	Th	IT
<i>Zygophyllaceae</i>		
<i>Fagonia bruguieri</i> DC.	He	SS, IT
<i>Peganum harmala</i> L.	He	IT, M, SS
<i>Zygophyllum atriplicoides</i> Fisch. & C. A. Mey.	Ph	IT, SS

Discussion

Watershed of Shirkooh to geographical location, specific climatic and diversity of geology, geomorphology, physiographic, including plains, regular slopes, rocky outcrops, rocky mountain rock sampling and Having an area of arid and semiarid climates, provided Conditions to create a rich and varied flora. Due to the variety of plant life, Hemicryptophytes, Therophytes and Chamephytes highest share among local herb, that representing the typical flora of the mountainous regions of central Iran. Furthermore, due to the high temperatures and

lack of rain during the summer season and also adaptation of Chamaephytes and Hemicryptophytes has led to such conditions as the most resistant forms of plant life, a high percentage of the area allocated to the permanent plants. On the other hand, Therophytes, Due to the dry conditions and environmental intolerance, shows lower tolerance to drought stress and heat from Compared with other life forms and they completed their life cycle and Fall to coincide with the peak heat, With increasing temperature and unsuitable climatic conditions, Therefore it is a good development in the area.

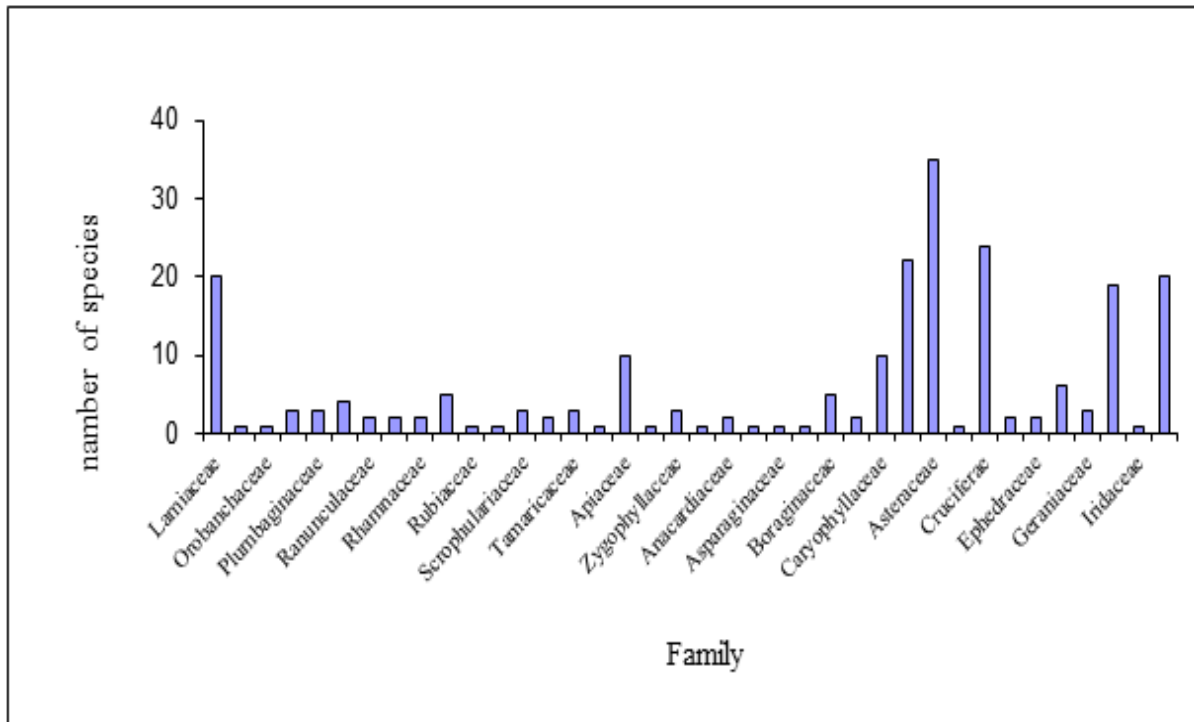


Fig. 1. Diagram of plant species belonging to the family.

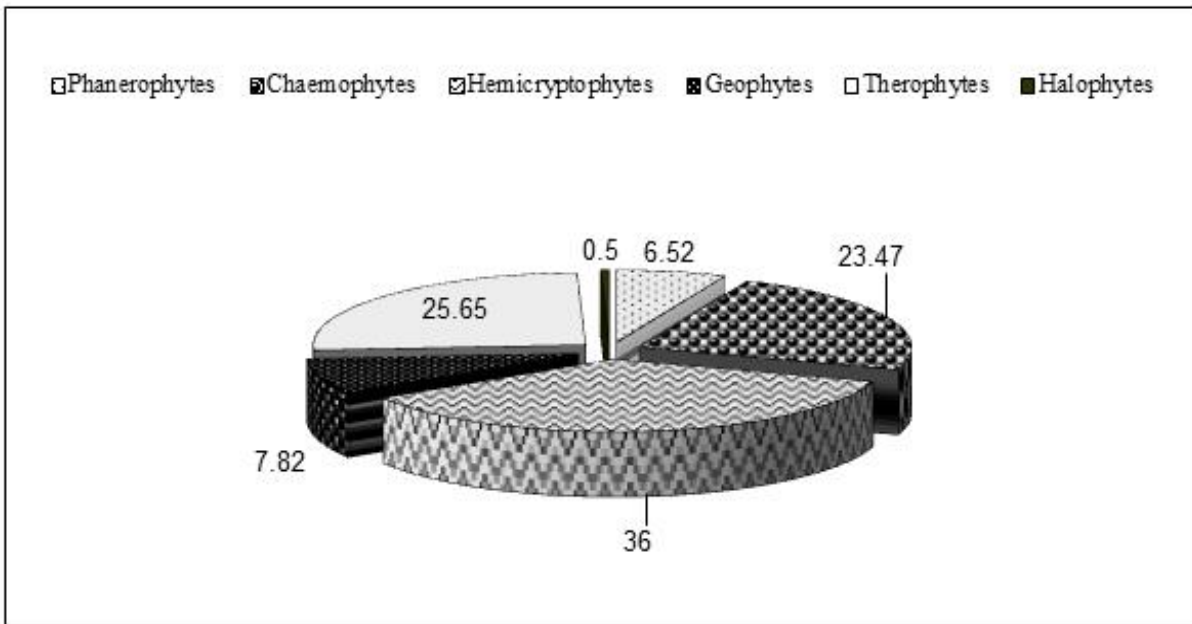


Fig. 2. Diagram of the frequency spectrum of plant life in the study area.

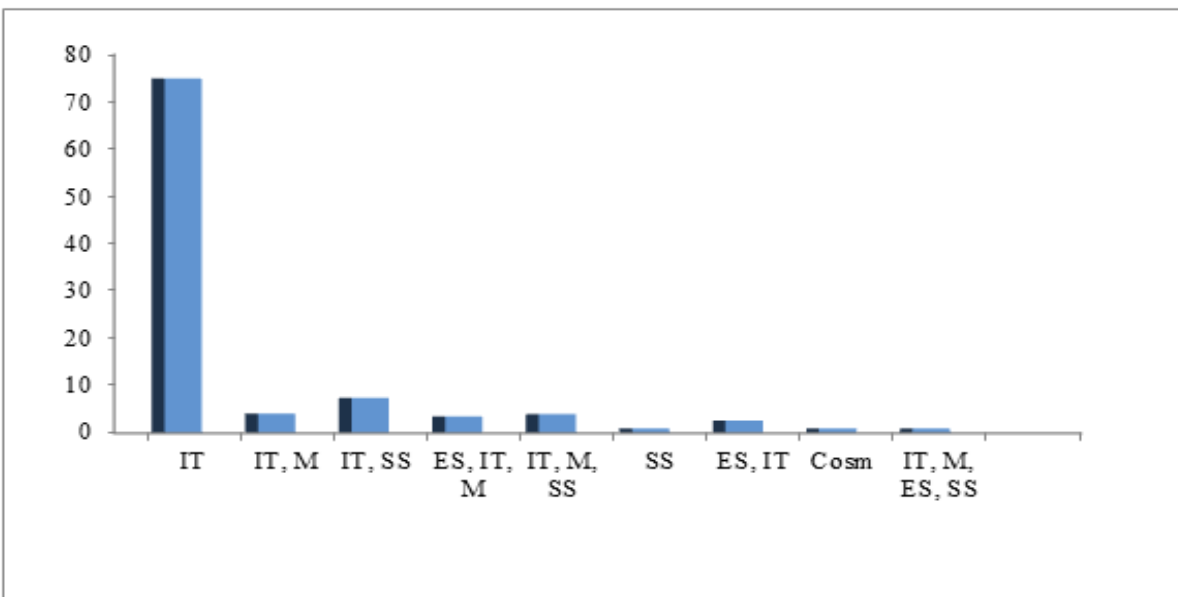


Fig. 3. Frequency histogram of the geographical distribution of plant species.

The results showed, More than 77 percent of the herb has Iran- Turanian Chorotype. Perhaps this is because Growing area near the Iranian- Turanian, The specific situation of the region, Provides the conditions given for the presence of other vegetation growing regions And the flora of the region 's richness and diversity is good.

Acknowledgements

The author appreciates, Mehdi soltani and other

Research Experts of Yazd Agricultural and Natural Resources Research and Education Center for his great helps in preparation of manuscript.

References

Assadi M, Maasoumi A, Khatamsaz M, Mozafarian V, Jamzad Z. 1989-2005. Flora of Iran. 1(52), Research institute of Forests and Rangelands.

Ghahraman A. 1978-1994. Flora Iranica. **1-13** Research Institute of Forests and Rangeland.

Khojasteh F, Zare Chahooki M, Azarnivand H. 2012. Study the biodiversity of grassland vegetation in the middle Taleghan. National Congress of genetic resources and biodiversity, 98-106 p.

Mobayen S. 1980-1996. Flora of Iran. **1(4)**, Tehran University Press.

Mozafarian V. 2007. Adictionary of Iranian Plant Names. Farhang Moaser Pub.

Parishani MR. 2003. Flora of Vanak Region of Semirom (Isfahan Province).MS Thesis, Shahid Chamran University, Ahvaz,Iran,86 p.

Raunchier C. 1934. The life forms of Plant and Statical Plant Geography. Clanrendon Press. OX Ford, 112-243 p.

Rechinger KH. 1963-1988. Flora Iranica, **1(165)**, Akademische druck - u. Verlagsanstalt Graz-Austria.

Shaikhi B. 2005. Floristic Study of Dalamper-West Azarbaijan, MSTesis, Urima University,Iran,73 p.

White F, Leonard J. 1991. Phytogeographycal Link between Africa and Southwest Asia. Flora et Vegetatio Mundi **9**, 229-246.

Zarezadeh A, Mirvakili SM, Mirhossaini A. 2007. Introduction to the flora, Life form and plant geographical distribution of Darrah Damgahan in Mehriz (Yazd province). Pajouhesh & Sazandegi **74**, 129-137.

Zohary M. 1973. Geobotanical Foundamental of the Middle East, 2 Vols. Stuttgart, 432-621 p.

Zohary M. 1963. On the Geobotanical Structure of Iran. Bulletin of the research council of Israel, Section D., Botany. Supplement, 85-102 p.