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Determination of the dominant families in Sharafaldin shabestar region, Eastern Azerbaijan province (Northwest of Iran)

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ABSTRACT

Systematic Knowledge or plant taxonomy is one of the very old and important branches of botany. By gathering plants, we can recognize rare species of plants or those which are facing extinction, so that we can find some ways to prevent them from destruction. In this research, all plants were gathered from Sharafaldin shabestar area which is located in East Azerbaijan province. Shabestar city is located in the north-west of Tabriz and the geographic coordinates 37 degrees and 42 minutes of north latitude and 45 degrees and 5 minutes and 46 degree and 9 minutes East longitude. Plant samples from Sharafaldin area as well, were obtained during winter of year 2009 to fall year 2010. Standard method was followed with regard to collection of plant materials, drying, mounting, preparation and preservation of plant specimens' .All the plant samples were pressed according to standard guides. If the plant samples were too long, then they were cut from several areas, so the sample contained the complete plant. At the next stage, samples were stick to the herbarium Cardboards and then were identified using floras, keys, illustrations and explanations which are available for different sources of plant Species. Dominant plant families consist of: Asteraceae (30 species), Brassicaceae (14 species), Fabaceae (10 species), Poaceae (23 species) Boraginaceae (8 species) and Polygonaceae (7 species).

Key words: Herbarium, systematic, flora.

INTRODUCTION

Plant systematic science provide tools to make a list of plants, the methods of identification, name and ordering, however, can be the basic knowledge for the biological science. Identification of a plant, introduces a specific way to determine the natural condition of that and bring about an introduction to recognize the relationship between different species. Collecting plants or

endangered plants likely helps to improve methods to save them and also revealers their far relationships with the well-known species. In sum, dominant species greatly affect both physical and biological conditions, and it makes sense to use them to examine community condition. The behavior of a dominant species and its relationship to other species are not necessarily constant, however. A dominant species can be highly competitive in a core habitat or able to tolerate stress in a peripheral habitat (Wisheu and Keddy 1992). Substantial information about both abiotic and biotic properties of a plant community is conveyed simply by identifying the dominant species (as in Clements 1916, Whittaker 1965). Through their architecture, physiology, growth, and phonology, dominant plants determine overall community structure, such as biomass and canopy strata (Richards 1996) and ecosystem engineering (Malmer *et al.* 2003); soil properties (Bardgett *et al.* 1999); ways of succession (Fastie 1995); ecosystem properties, such as nutrient cycling (Allison and Vitousek 2004) and fire regimes (Taylor 2000); micro-habitats for subordinate species (Grime 1998); and even hydrological conditions (Simberloff and Von Holle 1999). Dominant plants can exert strong influence by their abundance, height, shade, root and rhizome biomass, or chemistry (e.g., allelopathy). Iran, has a diversity of plant varieties which because of the specific geographic locations, great number of them are not known, therefore, the identification and name these plants is of a great importance.

MATERIALS AND METHODS

All the plant samples in this research were gathered from Sharafaldin shabestar area which is located in East Azerbaijan province. Shabestar city is located in the north-west of Tabriz and the geographic coordinates 37 degrees and 42 minutes of north latitude and 45 degrees and 5 minutes and 46 degree and 9 minutes East longitude. Plant samples from Sharafaldin shabestar area as well, were obtained during winter of year 2009 to fall in the year 2010. Standard method was followed with regard to collection of plant materials, drying, mounting, preparation and preservation of plant specimens (Shrestha and Dhillion, 2003). All the plant samples were pressed according to standard guides. If the plant samples were too long, then they were cut from several areas, so the sample contained the complete plant. At the next stage, samples were stick to the herbarium cardboards and they were identified using floras, keys, illustrations and explanations which are available for different sources of plant Species. Finally dominant plants were separated and introduced.

RESULTS

Result of survey show that Dominant plant families consist of: Asteraceae (30 species), Brassicaceae (14 species), Fabaceae (10 species), Poaceae (23 species) Boraginaceae (8 species) and Polygonaceae (7 species). Results showed as Tables 1.

Table1. Dominant plants in Sharafaldin shabestar region

Family	Genus	Species	Growth habite
Polygonaceae	Polygonum	P.convolvolus	Therophite
	Polygonum	P.patulum	Therophite
	Polygonum	P.persicaria	Therophite
	Pteropyrum	P.aucheri	Camephite

	Rumex	R.chalepensis	Hemicriptophite
	Rumex	R.conglomeratus	Hemicriptophite
	Rumex	R.crispus	Hemicriptophite
Brassicaceae	Alyssum	A.bracteatum	Hemicriptophite
	Alyssum	A.dasycarpum	Therophite
	Camelina	C.laxa	Therophite
	Capsella	C.bursa-pastoris	Therophite
	Descurainia	D.sophia	Therophite
	Erysimum	E.cuspidatum	Hemicriptophite
	Goldbachia	G.laevigata	Therophite
	Lepidium	L.latifulium	Therophite
	Malcolmia	M.africana	Therophite
	Malcolmia	M.behboudiana	Therophite
	Neslia	N.apiculata	Therophite
	Rapistrum	R.rugosum	Therophite
	Sisybrium	S.loeselii.L	Therophite
	Sisymbrium	S.irio	Therophite
Fabaceae	Alhagi	A.camelorum	Hemicriptophite
	Coronilla	C.balansae	Hemicriptophite
	Coronilla	C.varia subsp.varia	Hemicriptophite
	Medicago	M.sativa	Hemicriptophite
	Melilotus	M.albus Medicus	Hemicriptophite
	Melilotus	M.officinalis	Hemicriptophite
	Sophora	S.pachycarpa	كامفيت
	Trifolium	T.repens	Hemicriptophite
	Trifolium	T.repens var.macrorrhizum	Hemicriptophite
	Trigonella	T.avvantiaca	Therophite
Boraginaceae	Alkanna	A.bracteosa	Hemicriptophite
	Anchusa	A.italica.var.italica	Hemicriptophite
	Anchusa	A.ovata	Therophite
	Asperugo	A.procumbens	Therophite
	Heliotropium	H.ellipticum	Therophite
	Heterocarum	H.Szovitsianum	Therophite
	Lappula	L.barbata	Therophite
	Lappula	L.microcarpa	Therophite
Asteraceae	Achillea	A.micrantha	Hemicriptophite
	Achillea	A.tenuifolia	Hemicriptophite
	Achillea	A.vermicullaris	Hemicriptophite
	Acroptilon	A.repens	Hemicriptophite
	Arctium	A.lappa.L	Hemicriptophite
	Cardus	C.pycnocephalus	Therophite
	Carpesium	C.abrotanoides L	Hemicriptophite
	Carthamus	C.oxyacantha	Therophite

	Centaurea	C. aggregate	Hemicriptophite
	Centaurea	C.balsamita	Therophite
	Centaurea	C.cheiranthifolia	Hemicriptophite
	Centaurea	C.iberica	Hemicriptophite
	Centaurea	C.triumfetti	Hemicriptophite
	Cnicus	C.benedictus	Therophite
	Cichorium	C.intybus	Hemicriptophite
	Cirsium	C.osseticum	Hemicriptophite
	Cousinia	C.calcitrapa	Hemicriptophite
	Cousinia	C.calcitrapa	Hemicriptophite
	Cousinia	C.turcomanica	Hemicriptophite
	Crepis	C.sancta	Therophite
	Lactuca	L.serriola L.	Therophite
	Matricaria	M.recutita.L	Therophite
	Onopordon	O.leptolepis	Hemicriptophite
	Pulicaria	P.dysentarica	Hemicriptophite
	Senecio	S.mollis willd	Hemicriptophite
	Senecio	S.vulgaris	Therophite
	Sonchus	S.tenerrimus	Hemicriptophite
	Taraxacum	T.syriacum	Hemicriptophite
	Tragopogon	T.marginatus	Geophite
	Tragopogon	T. pratensis	Geophite
Poaceae	Aegilops	A.triuncialis	Therophite
	Agropyron	A.trichophorum	Hemicriptophite
	Arrhenatherum	A.kotschyi boiss	Hemicriptophite
	Avena	A.wiestii steud	Therophite
	Bromus	B.beneckenii	Geophite
	Bromus	B.tectorum	Therophite
	Catabros	C.aquatica	Hemicriptophite
	Cynodon	C.dactylon	Hemicriptophite
	Dactylis	D.glomerata	Hemicriptophite
	Desmostachya	D.bipinnata	Hemicriptophite
	Echinochloa	E.crus-galli	Therophite
	Eremopypum	E.confusum	Therophite
	Erenopypum	E.distans	Therophite
	Hordeum	H.glaucum	Therophite
	Imperata	I.cylindrica	Hemicriptophite
	Koeleria	K.cristata	Hemicriptophite
	Lolium	L.persicm	Therophite
	Phleum	P.iranicum	Hemicriptophite
	phleum	P.paniculatum	Therophite
	Phleum	P.phleoides	Hemicriptophite
	Poa	P.bulbosa	Hemicriptophite
	Setaria	S.glauca	Therophite
	Trachynia	T.distachya	Therophite

CONCLUSION

In this research dominant plants were detected. They were consist of these families: Asteraceae, Brassicaceae, Fabaceae, Poaceae, Boraginaceae and Polygonaceae. Determining the condition of a plant community is increasingly important as vegetation responds to anthropogenic stress, exotic species invasions, abiotic disturbances, and new management approaches (e.g., Godefroid and Koedam 2003, Abella and Covington 2004). Through their architecture, physiology, growth, and phenology, dominant plants determine overall community structure, such as biomass and canopy strata (Richards 1996) and ecosystem engineering (Malmer et al. 2003); A dominant species can be highly competitive in a core habitat or able to tolerate stress in a peripheral habitat (Wisheu and Keddy 1992). It can make up a majority of stems in a plot or less than the majority. Species richness can also vary with different dominants (Denslow and Hughes 2004). A particular species can vary in its dominance or dominate wherever it occurs (Lavoie et al. 2003). A few authors characterize dominant plants in relation to the number of co-occurring species. Some of scientists call those that coexist with many species, such as alpine tundra sedges, “conservative dominants.” (Theodose and Bowman 1997)In contrast, some of them (Hodgson et al. 1998) described abundant plants of speciespoor assemblages as “aggressive dominants.” Invasive or transformer species (Richardson et al. 2000), such as Phalaris arundinacea (reed canarygrass) and Typha x glauca (hybrid cattail), behave in this way, tending to exclude other species and create monotypic stands (Galatowitsch et al. 1999). While not quantitative, these distinctions begin to address the different roles and behaviors of dominant species. The presence or abundance of invasive species has also been suggested as an indicator of wetland quality. However, (Denslow and Hughes 2004) note that complex community interactions can allow a blurring of the distinction between native and exotic dominants, as native dominants become management issues and exotic dominants do not always decrease species diversity.

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