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(*Juniperus communis*-*Juniperus sabina*)

(*Carpinus orientalis*-*Quercus macranthera*)

EC pH

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(Rechinger 1963-98)

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Raunkiaer

-Frey & Probst
Plant Formations
-Klein
-Lacoste

Acantholimon pterostegium, *Onobrychis cornuta*, *Festuca Ovina*

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/ / / /) $c = \frac{2w}{a+b} \times 100$
a
b
w

Astragalus brachystachys, *Astragalus gossypinus*, *Stipa barbata*, *Cerasus Pseudoprostrata*, *Teucrium Polium*, *Cirsium arvense*, *Bromus tomentellus*, *Thymus caucasicus*, *Verbascum thapsus*.

Juniperus communis, *Juniperus sabina*, *Onobrychis cornuta*

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(EC)
(pH)

Festuca ovina, *Rosa iberica*, *Lonicera floribunda*, *Bromus tomentellus*, *Berberis vulgaris*, *Crataegus microphylla*, *Stipa barbata*.

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Exel

Acantholimon pterostegium, *Onobrychis cornuta*, *Astragalus spp.*

Sorenson

Astragalus gossypinus, *Astragalus brachystachys*, *Bromus tomentellus*, *Cirsium arvense*, *Acanthophyllum microphyllum*, *Stipa barbata*, *Teucrium Polium*, *Cerasus pseudoprostrata*.

Carpinus orientalis, *Quercus macranthera*

Festuca ovina, *Cerasus pseudoprostrata*, *Cirsium arvense*, *Phlomis persica*, *Acanthophyllum microphyllum*, *Teucrium polium*, *Bromus tomentellus*.

Juniperus polycarpus, *Onobrychis cornuta*, *Astragalus spp.*

Juniperus communis, *Acer campestre*, *Acer monspessulanum subsp. Ibericum*, *Crataegus microphylla*, *Rosa iberica*, *Lonicera floribunda*, *Agrostis gigantea*, *Dactylis glomerata*, *Bromus tomentellus*, *Berberis vulgaris*, *Digitalis nervosa*

Festuca Ovina, *Bromus tomentellus*, *Stipa barbata*, *Acanthophyllum microphyllum*, *Rosa iberica*, *Cerasus pseudoprostrata*, *Thymus caucasicus*.

Onobrychis cornuta, *Acantholimon pterostegium*, *Festuca ovina*.

	Acantholimon ptersotegium	12.63	0.16	20	3.28	10	-
	Acanthophyllum microphyllum	0.26	-	0.	1.59	0.42	-
	Acer cappestre	-	-	-	-	-	2.7
	Acer monspessulanum	-	-	-	-	-	1.6
	Agrophyron cristatum & Agrophyron elongatum	-	0.38	-	0.52	-	-
	Agrostis gigantea	-	0.5	-	0.2	-	3.3
	Arenaria polycnemifolia	-	0.33	-	0.37	0.03	-
	Astragalus brachystachys & Astragalus gossypinus	3.94	0.16	8.33	5.37	3.39	-
	Berberis vulgaris	-	2.1	-	-	-	0.98
	Bromus tomentellus	2.36	1	0.16	2.40	0.46	2.5
	Carpinus orientalis	-	-	-	-	-	50.6
	Ceratocapus arenarius	0.52	-	-	-	-	-
	Cerasus pseudoprostata	2.52	0.27	2.41	0.48	1.53	-
	Cirsium arvense	1.78	0.5	1.08	1.07	3.2	0.33
	Cichorium intybus	-	0.22	-	0.11	-	0.11
	Convolvulus arvensis	-	-	0.4	-	-	0.77
	Coronilla varia	-	-	-	-	0.03	0.8
	Crataegus glomerata	-	0.72	-	-	-	2.7
	Dactylis glomerata	-	-	-	0.59	-	2.22
	Dianthus orientalis	-	0.77	-	-	-	0.25
	Digitalis nervosa	-	-	-	-	-	1.5
	Eremostachys hyoscyamoides	0.15	-	0.12	-	-	-
	Eryngium bungei	-	-	-	0.07	-	0.11
	Euphorbia cheiradenia	0.31	-0.44	0.25	-	0.25	-
	Festuca ovina	18.15	13.61	12.70	6.29	11.07	0.5
	Galium verum	-	-	-	-	-	1.2
	Hordeum vulgare	-	-	-	0.66	-	0.52
	Juniperus communis	-	16.38	-	1.70	-	2.22
	Juniperus polycarpus	-	-	-	7.59	-	-
	Juniperus sabina	-	13.9	-	3.33	-	-

	<i>Lonicera floribunda</i>	-	0.38	-	0.29	0.17	1.1
	<i>Marrubium cordatum</i>	-	0.38	-	0.29	0.1	-
	<i>Melica persica</i>	-	-	-	-	0.25	-
	<i>Onobrychis cornuta</i>	10.26	13.3	14.37	12.59	10.35	-
	<i>Phlomis herba-venti</i>	-	-	-	-	0.1	-
	<i>Phlomis persica</i>	-	0.16	0.12	-	-	0.22
	<i>Plantago major</i>	-	-	-	-	-	0.88
	<i>Poa annua</i>	1.5	-	-	-	-	3.3
	<i>Polygonum aviculare</i>	0.15	-	-	-	-	1.1
	<i>Quercus macranthera</i>	-	-	-	-	-	8.5
	<i>Rosa ibrica</i>	0.52	0.44	-	0.18	-	2.5
	<i>Salvia aethiopsis</i>	0.78	-	0.5	0.18	0.17	-
	<i>Stachys byzanthina</i>	0.11	-	-	-	-	-
	<i>Stachys inflata</i>	0.52	0.27	0.2	-	-	0.22
	<i>Stipa barbata</i>	3.94	1.11	-	5.55	2.85	0.22
	<i>Taraxacum vulgare</i>	0.1	0.05	0.29	-	0.28	0.4
	<i>Teucrium polium</i>	1.05	0.23	1	0.23	0.17	-
	<i>Thymus caucasicum</i>	0.68	2.66	0.54	0.66	-	-
	<i>Trifolium repens</i>	-	-	-	-	-	0.22
	<i>Tunica saxifaga</i>	0.84	0.72	0.62	0.7	-	0.1
	<i>Verbascum thapsus</i>	-	-	-	-	-	0.33
	<i>Verbena officinalis</i>	-	-	-	-	-	2.3
	<i>Vicia vilosa</i>	-	-	-	-	-	0.22
	<i>Viola odorata</i>	-	-	-	-	-	0.22
	<i>Urtica dioica</i>						
		36	28	37	48	55	6
	Total	99.67	99.99	100.29	99.29	99.82	100.52

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$$D_x = \frac{L^2 + (DA)^2 - (DB)^2}{2L} \quad ()$$

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$$e = \sqrt{DA^2 - X^2} \quad (e)$$

	/	/	/	/	/	(e)

$$D_y = \frac{L^2 + (DA)^2 - (DB)^2}{2L} \quad ()$$

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EC pH

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Juniperus communis

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Juniperus sabina

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Archive of SID

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An Ecological Investigation of Vegetation Cover in Estival Rangelands of Hezarjarib (Behshahr)

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M.R. Tatian³

Abstract

By knowing and taking good care of highland mountainous ecosystems, one can better protect the natural habitats, biodiversity, soil and water of these susceptible areas. In this regard, it is necessary to understand and be aware of the effects of interaction between ecological biotic and abiotic factors on plants as efficient tools in planning and management.

The present research was carried out in Hezarjarib estival rangelands, Zarem rood of Tajan sub-watershed in (Alborz mountains) based on polar ordination (Berry & Curtis) and using Sorenson index in order to figure out the similarities between plant communities of the area which was determined by the floristic-physiognomic method. For better interpretation and understanding of plant distribution pattern, in addition to using isohyetal, height with respect to sea level and aspect maps, at least three soil profiles were studied in the direction of dominant slope to characterize the physico-chemical properties of soil.

In this research, six plant communities were recognized. The above communities were among three groups of shrub land deciduous scrub *Carpinus*, woodland evergreen *Juniperus* and cushion – grasses formation, based on the ordination. The analysis of the effects of ecological factors showed that with a reduction in rainfall, the *Carpinus* community was replaced by *Juniperus* communities and then by cushion-grasses formation ones. Also, this research showed that the ecological niche of the *Juniperus* communities had steeper slopes, low-depth soils with low amount of organic matter and high sand, gravel and lime percentages. However, the *Carpinus* community was distributed in deep soils with more organic matter and low percentages of sand, gravel and lime. The cushion-grasses formation communities were located on low and relatively flat slopes. The changes in Ec and pH of the soil were insignificant.

Keywords: Alborz mountains, Hezarjarib, Estival rangelands, Flora, Plant communities, Ordination, Ecological properties.

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