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Mohammadreza Tatian
Azad University, Iran

Muhammad Ali Bahmanyar
Sari Agricultural Sciences and Natural Resources University, Iran

Reza Tamartash
Sari Agricultural Sciences and Natural Resources University, Iran

Hamid Jalilvand
Sari Agricultural Sciences and Natural Resources University, Iran

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Investigation of affecting some climatic factors on distribution of plant societies in Eastern Alborz (IR-Iran)

Mohammadreza Tatian*¹, Muhammad Ali Bahmanyar², Reza Tamartash², Hamid Jalilvand²

¹ Post Graduate Student of Range Management (Ph.D.), Science and Research Unit of Tehran (Azad University),

² Faculty Members of Agriculture and Natural Resources of Sari University

* E-mail : mr_1979@yahoo.com, Sari, Mazandaran Province, P.O. Box : # 737, IR-Iran

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Introduction Climatic elements determine plant communities in each area, wherever important plant characteristics such as distribution, diversity and density are affected by climatic factors and different ecosystems are formed by these parameters. In fact, condition of vegetation in nature is affected from climatic factors and understanding of relationship between plant and climatic factors is important step in ecological management of rangeland ecosystems especially diverse mountain rangelands. Height effect moisture and temperature change which are the most important factors of distribution of plant associations (Song et al., 2006). The climatic factors with affection on soil moisture control changes of plant communities (Knapp et al., 2002). Plant communities due to affectability of climatic variations such as temperature and precipitation are created ecological plant groups of trees, bushy trees, shrubs and grasses (Taghipour, 2005). This research was done in order to recognizing and understanding of natural models between climatic factors and vegetation to determine ecological plant groups in mountain rangelands of eastern Alborz.

Materials and methods Mountain rangelands of eastern Alborz are located in Mazandaran Province in north of IR-Iran. Plant communities were identified by floristic-physiognomic method and were named based on dominant species. Sampling was done by randomized method. Data analysis was done with SAS statistical program and analysis of variance was done in completely randomized design with important degree factor of dominant species of plant communities.

Results and discussion The results of vegetation study showed five plant communities as follows : 1. *Festucaovina-Stipa barbata* with associate species such as : *Brumes tomentellus*, *B. tectorum*, *Agropyron elongatum*, *Melica persic*; 2. *Stipa barbata-Festuca ovina* with associate species such as : *B. tomentellus*, *A. elengatum*, *A. cristatum*, *Hordeum glaucum*; 3. *Acantholimon pterostegium-Astragalus gossypinus*, with associate species such as : *Astragalus brachystachys*, *Verbascum thapsus*, *Thymus caucasicus*, *Acanthophyllum pterostegium*; 4. *Onobrychis cornuta-Acanthophyllum pterostegium* with associate species such as : *Teucrium polium*, *Phlomis herba-venti*, *Astragalus aureus*, and 5. *Rosa iberica-Lonicera floribunda* with associate species such as : *Juniperus communis*, *Berberis integerrima*, *Cerasus pseudoprostrata*, *J. sabina*. Some study showed that distribution of grasses and shrubs is related to their humid needs in rangeland ecosystems (Jafari et al., 2001; Song et al., 2006). Also, the study of Walker et al (2005) showed that with increased of temperature, vegetation cover percentage and height of grass and shrub forms have.

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