

Abstract

The present study was conducted to investigate role of edaphic and topographic factors on distribution of plant species of geological formations in Kakan watershed where located 30 km northeast of Yasouj. First off, work unit maps were prepared to assess plant communities in geological formations (Pabdeh-Gurpi, Sarvak and Asmari-Jahrom). Then using work unit maps and field controlling, the plant species and vegetation types were identified. Sampling was done using random-systematic method with regard work unit and vegetation type area along 3-5 transects of 50 - 100m. So that along each transect five plots in the plot list of dominant species, species composition, canopy cover was determined. List of dominant plant species, plant composition, canopy cover were measured in plots along transects. According with the area of work unit around 1-3 soil sample was collected from depths of 0 to 30 cm and soil physical and chemical factors, including texture, pH, EC, organic carbon, nitrogen, phosphorus, potassium, magnesium, sodium and calcium carbonate were measured according standard methods. Determination of the most important factors affecting the distribution of vegetation types and relation between soil, environmental factors and vegetation cover was done through principal component analysis (PCA), canonical correspondence analysis (CCA) and cluster analysis of vegetation types and work unit using PC-ORD software. The influence of edaphic and environmental factors (slope, aspect, elevation) on the canopy was analyzed by use of GLM procedure SPSS16. In addition, one-way ANOVA was set to compare the formation of environmental factors (Duncan test). The results show 29 work units and 16 vegetation types. The results indicated that Pabdeh-Gurpi formation because of calcium carbonate and Asmari-Jahrom formation with the maximum area had significant difference because of potassium, organic carbon, nitrogen and magnesium. The data showed that among edaphic factors; texture, organic carbon, total nitrogen, magnesium and among topographic slope, aspect and elevation (respectively) had the most proportion on establishment and distribution of plant study of the area. However, effect of edaphic factors was more. Among topographic factors, slop and aspect had more impact on analyze of vegetation types. Though elevation influence some of vegetation types as in lower altitude the number of plant type was more and in high altitude was determine special plant. Overall, each plant species according to its growth site had correlation with some of environmental factors which can be noted to amendment and reclamation of plant cover of the study area and other similar areas.

Keywords: Plant Community, Physico-Chemical Soils Characteristic, Geological Formations, Kakan Watershed.



University of Zabol
Graduate school
Faculty of Water and Soil
Department of Range and Watershed Management

**The Thesis Submitted to for the Degree of M.Sc
(in the field of Range Management)**

Role of Edaphic and Topographic Factors in Distribution of Plant Species of Formations Watershed of Kakan in Kohkiloyeh and Boyerahmad.

Supervisor:
Dr. M. Ebrahimi

Advisor:
Dr. M. Armin

By:
M. Moradi Mansourkhani

February 2014