ABSTRCT

Present study was carried out to reach the relations between soli, geology and topography to establish vegetation of Sanib Taftan watersheds in Sistan-and-Balouchestan province. Initially, work unit map was prepared by consolidation of 4 maps of slope, direction, altitude classes and geology. Sampling in work units was carried out using linear transects method. Sampling plots size was specified by minimal surface method according to type and level of canopy, vegetation distribution and being mountainous. Totally, 70 transects and 350 plots were captured. Given the width in each work unit, 1-3 transects of 50-100 meters were located as random-systematic form in two directions of the general slope and perpendicular to the slope. In plots of 50 meters, the transects were located at 10 meters distances and this distance was increased to 20 meters in 100 meters transects. Then by logging available plants list, the corresponding data (including canopy percentage, stone and pebbles percentage, litter percentage, bare soil percentage) was estimated. Furthermore, the soil sampling was conducted in the units that according to width of each work unit, 1-3 soil samples were captured from depth of 0-30 cm as effective depth on plant establishment, growth and phenology. After drying, soil samples were sieved (2 mm sieve) in laboratory, their coarse particles were screened and the samples got ready for different tests. Totally, such factors as soil texture, pH acidity, soil electrical conductivity, organic carbon percentage, and nitrogen, phosphorus, potassium and lime percentage were measured by standard experimental methods.The assessment on the relation between environmental factors and distribution of existing plant types using Principal Components Analysis (PCA) and Canonical Correspondence Analysis (CCA) through PC-ORD4 software indicated that there is a close relationship between some environmental factors and plant types in the region. The most important and effective factors on vegetation distribution of the studied area are as follows: altitude, slope, soil texture (silt and sand) and nitrogen and the factors related to topography (i.e. altitude and slope) are more effective than those related to the soil.

Keywords: Plant community, physical and chemical properties of soil, environmental factors, Sanib Taftan watersheds

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