Vegetation analysis, phenological patterns and chorological affinities in Wadi Qena, Eastern Desert, Egypt

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Abstract:

The present study, which was conducted between 2009 and 2010, provides an analysis of the floristic composition, life forms, phenology, chorological spectrum and analysis of the vegetation in the deltaic part of Wadi Qena using multivariate analysis techniques. Twenty-five stands were sampled to represent, as much as possible, the vegetation variation in the study area. A total of 54 species (nineteen annuals and 35 perennials) belonging to 47 genera and nineteen families were recorded. The largest families were Fabaceae and Brassicaceae (nine and seven, respectively), Asteraceae and Poaceae (six for each), Chenopodiaceae (five), and Zygophyllaceae (four). Therophytes are the predominant life form (37%) followed by chamaephytes (24%), phanerophytes (18.5%), hemicryptophytes (9.29%) and cryptophytes (5.5%). Chorological analysis revealed that Saharo-Arabian (48%) and the Sudano-Zambezian (19.2%) chorotypes constitute the main bulk (67.2%) of the total flora of the studied area. The majority of the perennial species behave similarly to each other in their phenology, and usually perennials sprout at the end of February, become leafy in March, flower in April and produce fruits between April and July. Three main vegetation groups resulted from classification of the dominant vegetation. Canonical correspondence analysis revealed that magnesium, potassium and pH were the most effective soil variables.

Keywords:

Eastern Desert, vegetation, chorology flora, phenological patterns, multivariate analysis

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