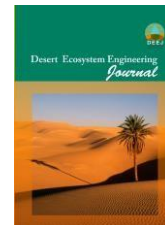




University of Kashan

Desert Ecosystem Engineering Journal

Journal homepage: <http://deej.kashanu.ac.ir>

## Autecology of range plant species *Bromus kopetdaghensis* Drobov in Khorasan Razavi province

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Received: May/16/2015

Accepted: Sep/08/2015

### Abstract

Ecological studies are principal methods for scientific maintenance and utilization of natural resources and environment. In this research the study of range plant species autecology has been performed in Khorasan Razavi province. Ecological factor such as topography, soil characteristic and climate were studied. Associated species, the presence of species in vegetation, root system and phenology were studied. The results showed that *B. kopetdaghensis* was distributed in 1300-2600 m range of altitude and 20-75% of slope. The average of precipitation varies from 325.8 mm in Shamkhal station to 351.3 mm in Zoshk station and the average of annual temperature was about 8.6 °C. Soil analysis showed that *Bromus kopetdaghensis* appears in sandyloam, loamy and silty-loam soil with pH of 6.5-7.8. The amount of crude protein at vegetative stage was 72% more than reproductive stage. Phonological studies showed that vegetative growth was started from late March and continued until May. Flowering stage was beginning from Late May until June. Seedling and seed ripening was continued until the mid-July. Seed weight varied between 7.8-3.4 gr and optimum temperature for germination was 20 °C and germination power reach to 95%. Seeds could preserve their germination vigor and they can germinate under suitable condition. The studies of phytomass showed that root to shoot ratio was higher and it would increase in arid years. General and absolute recognition of ecological characteristic for main range lands species or autecology in order to accurate range lands management, planning improvement and utilization would be necessary.

**Keywords:** autecology, phenology, ecological demand, *Bromus kopetdaghensis*, Khorasan Razavi province.

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