

## Changing of Vegetation properties on the grazed and protected rangeland sites (Kocapınar Rangeland/Isparta)

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**Abstract:** Rangelands are wide and open areas where grasses and other herbaceous plants are dominant. Rangelands have many benefits, such as the provision of forage for livestock, protection and conservation of soil and water resources, provision of wildlife habitat, and contribution to the attractiveness of the landscape. The objective of this study is to determine the some vegetation properties in Kocapınar Rangeland of Kozağacı Highlands of Davraz Mountain (Isparta) during 2011-2012. The measurements were carried out for a period of two years during the months of June and September of the grazed and protected rangeland areas. "Line intercept (transect)" method was used for the determination of plant-covered area whereas "quadrante method" was used to determine dry forage yield. Aim of the study was collect the data which will form a basis to the rangeland improvement works in the region and to provide the required information about the rangeland vegetation. The results obtained were summarized as follows. A total of 30 families and 140 plant species were identified in the rangeland areas. The families that have the most taxa in the site are Asteraceae with 25 taxa, Lamiaceae with 14 taxa, Brassicaceae and Fabaceae with 12 taxa. With respect to the botanic composition of the vegetation of the research area, total ratio of Poaceae family, Fabaceae family, and the plant species belonging to the other families were found as 60.9 % and 58.7 %, 14.4 % and 18.0 %, 24.7 % and 23.3 % in the grazed and protected areas, respectively. The ratio of plant covered area was found as on average 24.3 % in the grazed area and 30.5 % in the protected area. Besides, the range quality degree, which was on average 3.478 in the grazed areas, was found as 3.787 in the protected ones. Above-ground biomass proved to be on average 208.24 kg/da in the grazed area and 256.49 kg/da in the protected area, while the under-ground biomass was determined to be 347.88 kg/da and 454.41 kg/da, respectively. The grazing capacity for an area of 1 ha was found as on average 0.39 animal units in the grazed areas and 0.48 animal units in the protected ones. Current grazing management practices leads to overgrazing pressure on the rangeland; therefore, developing a suitable grazing management plan are necessary to provide sustainable use of these rangelands.

**Keywords:** Rangeland vegetation, Range condition, Botanical composition, Grazing capacity, Isparta.

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