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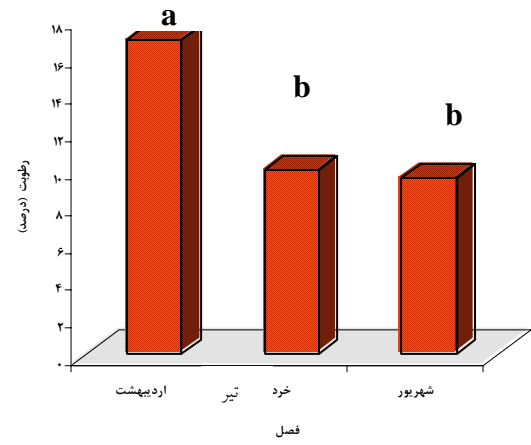
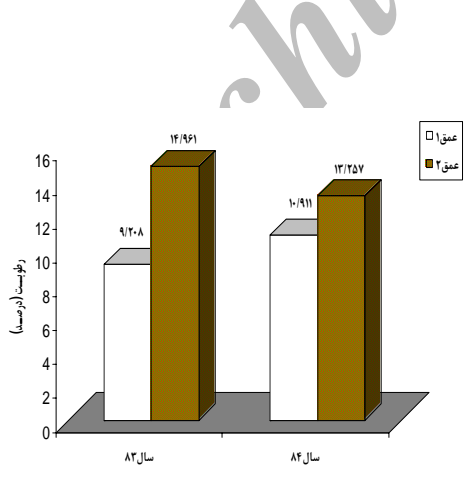
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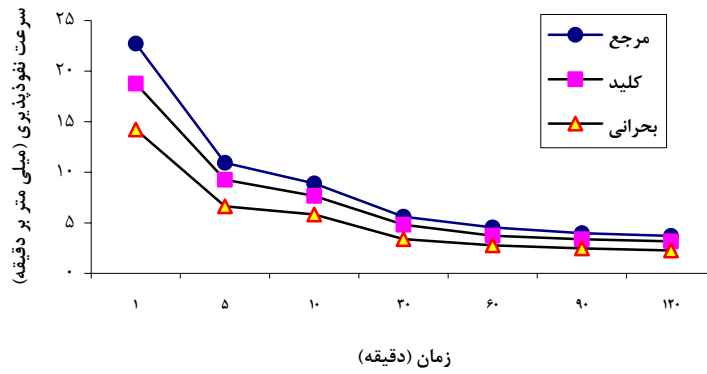
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Ceratocarpus sp.

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Br.tectorum Br.danthoniae, Hordeum sp.

(forb)

Rosa persica Peganum harmala

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Effect of Different Grazing Intensities on Plant Cover Composition, and on Moisture Content, Mechanical Resistance and Infiltration Rate of the Soils, Savojbolagh Rangelands

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Abstract

Mechanical resistance, infiltration and moisture content of soil are some of the important parameters that affect plant cover composition in rangelands. The effects of different livestock grazing intensities on plant cover composition, mechanical resistance, infiltration and moisture content of soil in reference (control), moderate and heavily grazed areas located in Savojbolagh (Iran) rangeland was investigated during years 2004-2005. Results showed spatially different mechanical resistance; mechanical resistance was the highest in heavily grazed areas (1085.3kpa), while lowest in reference area (717kpa) and it was higher for the depth 15-30 Cm as compared to 0-15 cm. There was a trend if increasing soil mechanical resistance observed as the grazing period increased. The average soil mechanical resistance increased from 850.2 Kpa at the beginning to 910.4 Kpa at the end of the grazing period. Soil moisture content followed a decreasing trend from control to heavily grazed areas while a reverse trend was observed in moisture content from 0-15 cm to 15-30 cm soil depth. There were significant differences observed in water infiltration rate among different grazing intensities. Infiltration rate decreased from control to heavily grazed area by 3.7, 3.2 and 2.3 ^{mm}/_{min} for control, moderately and heavily grazed, respectively. As the grazing intensity increased the gramineae plants, (43.7%) bushes (51.8%) decreased while forbs increased (26.5%) in plant composition in heavily grazed area, as compared to reference. The vegetative plant cover in heavily grazed area is finally comprised of invader forb species such as *Rosa harmala*, *Rosa persica*, *Ceratocarpus sp* which clearly indicates the destructive effect of heavy grazing on plant community and rangeland productive capacity.

Keywords: Plant composition, Mechanical resistance, Infiltration, Soil moisture, NPK, PCA, grazing intensity

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