Effect of imformanced grazing on Vegetation and soil in Delarestagh Summer ranglands of Amol

Abstract

Mountain ranges of delarestagh with plenty ecological resource have important rule to soil and water conservation; so the effect of livestock grazing vegetation and soil in this rangelands investigated by three grazing treatments included light grazing (refrence area), moderate grazing (key area) and heavy grazing (critical area). We sampled soil to 40 cm depth in each area and assessed the factors as soil texture, structure, Ph, total N and soil organic C of three areas with 6 replications and infiltration was measured by double ring with 5 replications. The factors of vegetation cover litter and bare soil estimated by 5 transects (long 50 m) in each area. Production (biomass yield) measured by double sampling method with 10 replications, density by point centered quarter method and diversity by Shannon-wiener function (1949). Root vertical and horizontal extension of three species estimated with 5 replications in each area. Data were analyzed as a analysis variance one way (ANOVA) and homogeneity Duncan test. Our statically analysis data indicated that, grazing did not have significant effect on soil texture. Grazing intensity significantly interacted with area in affecting infiltration rate. Significantly reduction infiltration was observed with the heavy grazing compared to light and moderate grazing. Significantly higher N and soil organic C was measured in heavy grazing area and significantly higher pH was observed in moderate grazing and lower it was in heavy grazing. Root horizontal extension of dominant perennial grasses significantly reduced with increasing grazing pressureT and vertical extension of root in critical area was more than refrence area. Data analysis showed that significantly highest was measured with moderate grazing. Grazing intensity did not have significant effect on vegetation cover percentage. Litter and bare soil percentage respectively significantly reduced and increased with increasing grazing pressure.

We concluded that grazing management is necessary for conservation both of soil and vegetation and it needed strategies for implementation grazing systems in rangelands.

Key words: Grazing, Livestock, Vegetation, Soil, mountain ranges, Delarestagh.

University of Zabol

Graduate School

Faculty of Water and Soil Science

Department of Range and Watershed Management

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Supervisor:

Dr. E. Rouhi Moghadam

Advasors:

H. Hakimpuor

R. Mahdavi

:By

S.Ebrahimzade Omran

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