

Abstract

One of the components of rangeland ecosystems is litter production and decomposition. In rangelandecosystem, litter and soil organic matter play a major role in adding soil fertility. The aim of this study was to compare the litter quality of three range plant species including reed (*Phragmites australis*), Bonnie (*Aeluropus lagopides*) and Crete (*Desmostachya bipinnata*) in terms of chemical composition (carbon, nitrogen, phosphorus, potassium, phenol, lignin, and the carbon to nitrogen ratio). The study area was in southern and northern edge of the Hamoon wetland, Southeastern Iran. At the end of the growing season, Reed and Bonnie were sampled from the southern edge of the wetland near the village of Golkhanaki in Hamoon –e- Sabury and Crete in the northern edge of the wtland near Mount Khajeh. Sampling was done with randomized - systematic method along three two-hundred meters transects. Six-square-meter plots were established along each transect. The chemical composition of litter, including carbon, nitrogen, phosphorus, potassium, phenol, lignin and carbon to nitrogen ratio were measured using standard methods. Data were analyzed with ANOVA and Duncan test was performed to compare mean values. The results showed that in *Phragmites australis* chemical elements such as nitrogen, potassium and phenol were more than two other species. In *Aeluropus lagopides*, carbon and carbon to nitrogen ratio were more than the two other plant species, but in *Desmostachya bipinnata* phosphorus was higher than other plant species. Also, carbon to nitrogen ratio of *Desmostachya bipinnata* was lower than two other species. Consequently, litter quality of *Desmostachya bipinnata* was greater than other species and it hss more effects on soil quality.

Key words: Litter quality, Hamoon wetland, Litter decomposition, Graminae



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**Comparison of litter quality of *Phragmites australis*, *Aeluropus lagopides* and
Desmostachya bipinnata in marginal rangeland of Hamoon wetland**

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