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S. A. Javadi  
*Islamic Azad University, Iran*

H. Arzani  
*Islamic Azad University, Iran*

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## Variation in forage quality of three rangeland species in different phenological stages

S.A .Javadi and H .Arzani

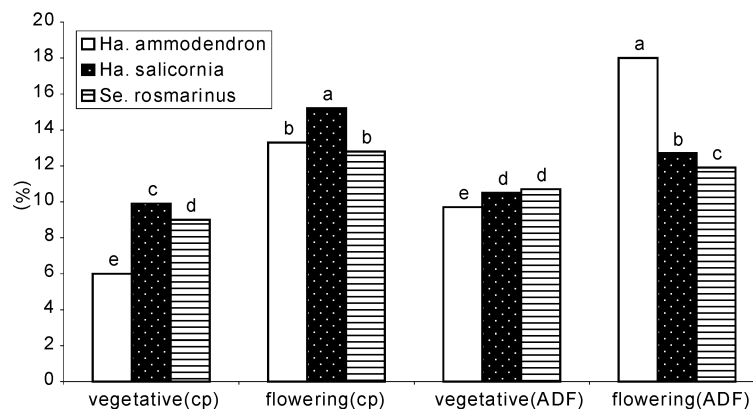
Islamic Azad University , Science and Research branch , Tehran , Iran . E-mail : sadynan@yahoo .com

**Key words :** forage quality ,phenological stages ,crude protein .

**Introduction** Information on the nutritive value of forage could help range managers choose suitable grazing times and stocking rate to achieve higher animal performance without damage to vegetation . Phenological stage has the greatest effect on forage quality with most of the qualitative indices decreasing with the progress of phenological stage (Holecheck et al . ,2001) . In this study , the forage quality of three species in two phenological stages (vegetative and flowering) was determined and compared .

**Materials and methods** Samples (*Haloxylon ammodendron* , *Hammada salicornia* , *Seidlitzia rosmarinus*) were collected from Tabas region of Iran . Plant samples were dried and milled in the laboratory and analyzed for important qualitative factor such as : crud protein (CP) , acid detergent fiber (ADF) and metabolisable energy (ME) (AOAC ,1990) .

**Results** There were significant differences ( $p < 0.01$ ) between different species and phenological stages (Figure 1) . In all species CP and ADF were higher at flowering than vegetative stage . *H. salicornia* had the highest CP (12.5%) and *H. ammodendron* had the lowest CP (9.6%) and highest ADF (13.85%) . There were no significant differences ( $p < 0.01$ ) , based on ME , between *H. salicornia* and *S. rosmarinus* but *H. ammodendron* had the less value for ME (9.2%) .



**Figure 1** value of CP and ADF at two Phenological stages for different forage species .

**Conclusion** The most suitable time to begin grazing these rangeland is at the flowering stage due to a better quality when compared to the vegetative growth stage .

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