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Masoume Amirkhani
University of Agricultural Sciences, Iran

Mansour Mesdaghi
University of Agricultural Sciences, Iran

E. Bagheri Rad
University of Agricultural Sciences, Iran

A. R. Mahmoodi
University of Agricultural Sciences, Iran

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An investigation on forage quality of three grasses (*Aeluropus lagopoides*, *A. littoralis*, *Puccinellia distans*) in saline and alkaline habitats of the Caspian Sea

M. Amirkhani, M. Mesdaghi, E. Bagheri Rad, and A. R. Mahmoodi

Department of Range Management, College of Natural Resources, University of Agricultural Sciences, Gorgan, Iran. E-mail: maasoom_e_amirkhani@yahoo.com

Key words: *Aeluropus lagopoides*, *A. littoralis*, *Puccinellia distans*, forage quality

Introduction *Aeluropus lagopoides*, *A. littoralis* and *Puccinellia distans* are perennial grasses which are adapted to saline and alkaline habitats of sea shores, salt flats and marginal area of the rivers around the Caspian Sea. These species have significant roles in providing good forage quality for domestic sheep and goats on local rangelands. These grasses occur at altitude of 10 m with annual rainfall of 180 mm. The objectives of this study were to determine forage quality of these species in two phenological stages in saline and alkaline habitats.

Material and methods The foliage of five plants of each species was harvested at two stages, vegetative growth (VG) and seed ripening (SR), and then analyzed for nitrogen (N), acid detergent fiber (ADF), and crude fiber (CF). Crude protein (CP), dry matter digestibility (DMD), and metabolizable energy (ME) were then calculated using equations of: $\%N=0.16CP$, $\%DMD=83.58-0.824 \cdot ADF+2.626\%N$, and $ME=0.17\%DMD-2$ (Standing Committee on Agriculture, 1990) and analyzed statistically by using ANOVA.

Results The chemical compositions of the three species at two stages are shown in Figure 1.

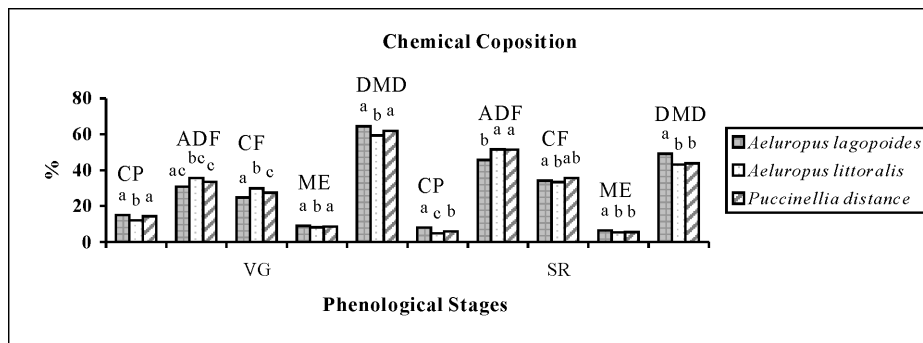


Figure 1 The chemical compositions of these three grasses at two phenological stages. Harvesting was accomplished at stage of vegetative growth for *A. lagopoides* and *A. littoralis* in late Feb to late May and at stage of seed ripening in early June to late July. Harvesting of *Puccinellia distans* was at stage of vegetative growth in late March to late April, and for seed ripening was at late June to late of July.

There were significant differences in chemical compositions of three species ($P < 0.05$). With advances in maturity, CP decreased, ADF and CF increased. In both phenological stages for all factors *A. lagopoides* was better than *A. littoralis* ($P < 0.05$). In vegetative growth, *P. distans* had the same quality as *A. lagopoides*, but in seed ripening had the same quality as *A. littoralis* ($P > 0.05$). In general, *A. lagopoides* has better quality than the two other species.

Conclusions These species have high potential in relation to forage quality on rangelands in the study area. Further research is needed to understand the requirements for seeding these species in the areas.

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