Animal Unit Weight and Daily Requirement of Sangsary Sheep Breed

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Key words : range, animal unit, daily requirement, Sangsary sheep breed

Introduction Sangsary sheep is one of the 27 sheep breeds grazing on rangelands of Iran. Body weight is a suitable index for animal unit determination (Vision, 1959, Stoddart et al, 1975). Arzani et al (2005) believed that information on forage quality is essential for understanding animal requirements on rangelands. Dry matter requirement depends on grazing season, phenological stage and ratio of plant parts in available forage. The main objective of this research was determination of Sangsary breed unit weight, and its daily dry mater requirement considering forage quality of rangelands in highland and lowland of Semnan province.

Material and methods Two herds of Sangsary sheep were selected. Forty animals; 15 three year old and 15 four year old ewes and 5 three and 5 four year old rams were weighed on lowland and highland rangelands. In highlands 20 three and six month old lambs were also weighed. For determination of forage quality of each palatable species, 5 samples consisting of 5 individual plants were collected. Crude protein (CP), acid detergent fiber (ADF), dry mater digestibility (DMD) and metabolisable energy (ME) were estimated for 10 species from highland and 5 species from lowlands.

Results and discussion Animal unit weight was 36.98 kg and animal unit equivalent for rams, 6 and 3 months old lambs were 1.26, 0.73, 0.53 respectively. Average body weight is shown in (Table 1) and forage quality is illustrated in (Table 2&3). Two seasons of winter and summer, sex of animals (ewes and rams) and two herds differed significantly ($p<0.05$). According to Tukey s test forage quality differed significantly between species and phonological stages ($p<0.05$). The same finding was also reported by Arzani et al. (2004). Considering topography and distances from watering points and villages that animal had to walk every day; 50% was added to animal requirement. Animal requirement in highland and lowland based on NRC tables and forage quality were 0.65 and 0.95 kg dry matter respectively.

Table 1 *Average body weight (Kg) of different classes of Sangsary sheep.*

Type of animal	Age (year or month)	Highland	Lowland
Sheep	3	37.16±0.48	33.51±0.46
Ram	3	50.1±0.84	46.7±0.84
Sheep	4	40.53±0.48	36.8±0.5
Ram	4	51±0.84	47.2±0.84
Lamb	6	24±0.68	
Lamb	3	15.75±0.65	

Table 2 *Forage quality (% CP & ME) of plant species in lowlands.*

Species	% CP	ME (MJ/kg DM)
Salsola rigida	6.27 ± 0.20	8.90 ± 0.25
Artemisi sieberi	3.41 ± 0.40	3.77 ± 0.99
Anabasis anova	5.82 ± 0.30	12.41 ± 0.13
Anabasis setifera	7.66 ± 0.60	10.56 ± 0.74
Seidlitzia rosmarinus	7.26 ± 0.14	10.53 ± 0.51

Table 3 *Forage quality (% CP & ME) of plant species in highland.*

Species	% CP	ME
Plantago lavendolata	9.78±0.35	9.44 ± 0.22
Achillea berbersttini	12.53 ± 1.04	11.22 ± 0.67
Secale montanum	4.29 ± 0.43	9.02 ± 0.19
Eurotia ceratoides	8.79 ± 0.42	10.76 ± 0.43
Medicago sativa	8.08 ± 2.06	8.94 ± 0.79
Agropyron elongatum	4.15 ± 0.63	7.07 ± 0.18
Festuca ovina	3.78 ± 0.13	7.34 ± 0.38
Salvia hypoleuca	11.1 ± 0.44	10.09 ± 0.31
Agropyron trichophorum	3.59 ± 0.21	7.25 ± 0.14
Agropyron pectiniformis	4.61 ± 0.44	8.12 ± 0.04

Conclusions Animal requirement estimation is essential for grazing capacity determination. Dry matter requirement depends on body size of animal, and quality of available forage which is affected by range vegetation composition and phenological stages. Finding of this research facilitate grazing capacity assessment in Semnan province rangelands where this breed is dominant.