Effect of Grazing Intensity and Time on Diet Composition and Intake of Herbage in Grazing Sheep

Honglian Hu
Inner Mongolian Academy of Animal Sciences, China

Dexun Lu
Inner Mongolian Academy of Animal Sciences, China

Yongzhi Liu
Inner Mongolian Academy of Animal Sciences, China

Yakui Li
Hebei North University, China

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Hu Honglian[1,2] *,Lu Dexun*[1] *,Liu Yongzhi*[1] *,Li Yakui*[3]
[1] *Inner Mongolian Academy of Animal Sciences , Inner Mongolian ,Huhhot ,010030 China .* [2] *Inner Mongolian Agriculture University , Inner Mongolian , Huhhot ,010018 China .* [3] *Husbandry Engineering Department . Hebei North University ; Zhangjiakou ,Hebei 075000 China .Corresponding author's E-mail :ludexun@126 .com*

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Introduction Nutrient intake is the major determinant of nutritional status and production performance for grazing animals , The nutrient status of the herbivore depends on the nutritive value of the pasture available , botanical composition of the consumed diet and the intake of animal(DOVE ,1996) . In order to utilize pasture efficiently , both the quality of the herbage and the quantity consumed by animals should be known . Objectives of the present experiment were study the effect of stocking rate and time of grazing on diet composition and intake of herbage .

Materials and methods The study was conducted in semi-desert grassland in Siziwang Banner of Inner Mongolia . the total number of plant species recorded was about twenty species . *Stipa breviflora Griseb* , *Artemisia frigida Willd* and *Cleistogenes songorica Ohwi* were the dominant plant species in this area .

Treatments comprised two stocking rates (1 .82 and 2 .71sheep/hm^2) and three separate occasions (June , September and November) . 12 sheep (35kg liveweight) were grazed on natural grassland in 2004 .Pasture intake and diet composition for each sheep were determined by the n-alkanes technique (Mayes et al ,1986) .The animals were dosed twice daily with gelatine capsules containing 120mg of n-alkane C_{32} for fifteen days prior to and during the fours days of faecal collection . Alkane concentrations (C27 , C29 ,C31 , C32 and C33) were determined in faecal samples and pasture by gas chromatography . Non-negative least-squares procedure was used for assessing diet composition .

Results and discussion under the same grazing period , pasture intake of grazing sheep decreased with increase of the stocking rates ,The lowest intake was observed in November with heavy stocking . under the same stocking rates ,pasture intake decreased with pasture growth , Probably because of the lack of pasture on offer and its low quality during the winter .in addition Seasonal changes in botanical composition of herbage also affected intake of grazing sheep . The results showed that herbage intake was affected by grazing management ,herbage intake was higher for moderate grazing compared to heavy grazing , Grazing season had a relatively great effect on herbage intake .

Table 1 *Pasture intake of grazing sheep under two stocking rates(kg/d) .*

Item	1 .82sheep/hm^2			2 .71sheep/hm^2		
	June	September	November	June	September	November
Intake	1 .77±0 .11^{ab}	1 .71±0 .03^{ab}	1 .14±0 .14^{c}	1 .82±0 .06^{ab}	1 .52±0 .01^{b}	1 .07±0 .03^{c}

^{a,b,c} within a row means with different superscripts($p<0.05$)

Figure 1 showed the proportions of each dietary component averaged over the period from June to November 2004 .At two stocking rates grazing sheep had significantly high proportion of *Artemisia frigida Willd* 、*Cleistogenes songorica Ohwi* and low proportion of *convolvulus ammannii Desr* . *Stipa breviflora Griseb* was found lowest and almost not present in the diet in November .This could be related to diet selection by grazing sheep . The n-alkane technique revealed that grazing sheep had a predominant *Artemisia frigida Willd* diet ,The proportion of *Artemisia frigida Willd* in the diet achieved above levels of 0 .80 at two stocking rates .

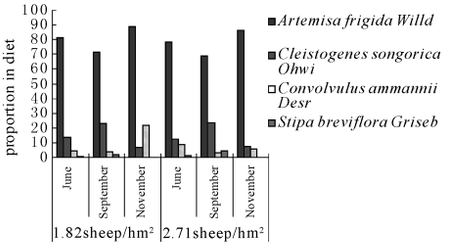

Figure 1 *Grazing sheep diet composition .*

Conclusions Grazing intensity and time had important role on diet composition and herbage intake in grazing sheep ,and grazing time had a relatively great effect .

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