

Change of regrowth of *Seripidium transiliensis* Poljak . in different grazing disturbance

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Introduction *Seripidium transiliense* , super xerophyte semi-shrub , whose distribution center in Xinjiang of China (Lin , et al , 1991) , was widely distributed 500~1500 m above sea level in north Xinjiang , and was constructive species of desert and desert steppe communities . The *S. transiliense* desert was not only the important spring-autumn pasture in Xinjiang , but also the serious degenerate pasture . In order to establish reasonable grazing intensities , the change of regrowth of *S. transiliense* were studied .

Materials and methods The study site was located low mountain of north slope of Bogeda mountain in Urumqi , Xinjiang (E87° 46'~87° 47' , N43° 49'~43° 53' , 840~1110 m above sea level , annual mean temperature is 6.4°C , rainfall is 236 mm) . Simulated grazing treatments were initiated on 1 of April to 1 of June in 2006 . Four grazing intensities were designed , namely light grazing (mowing with stubble height of 5 cm , LG) , moderate grazing (mowing with stubble height of 2 cm , MG) , heavy grazing (mowing with stubble height of 0cm , excluding lignified old stem , HG) , extreme grazing(mowing with stubble height of 0cm , including lignified old stem , EG) . Each plots of simulated grazing intensities were 1 m² , replicate 5 . Dry weight , regeneration height of *S. transiliense* and density of community was measured in all experiments every 15d . Analysis of variance (ANOVA) was performed for differences through Duncan .

Results and discussion

Dry weight of *S. transiliense* under different grazing intensity was showed in Table 1 . The dry weight of *S. transiliense* had significant difference among four grazing intensities($p < 0.05$) and the order was EG>HG>MG≈LG (Table 1) . The dry weight on EG , HG was higher (compared with MG , respectively significant increase of 880% , 474%) , but it was unadvantageous to the continual utilization of *S. transiliense* desert .

Table 1 Dry weight of *S. transiliense* under different grazing intensities(g/m^2) .

| Treatment | Date of grazing(day/month) | | | | |
|-----------|----------------------------|--------------------|--------------------|--------------------|---------------------|
| | 1/4 | 15/4 | 1/5 | 15/5 | 1/6 |
| LG | 0.57 ^c | 2.50 ^c | 1.67 ^c | 8.66 ^c | 21.19 ^c |
| MG | 3.63 ^c | 9.94 ^c | 10.78 ^c | 20.37 ^c | 32.90 ^c |
| HG | 68.23 ^b | 83.93 ^b | 54.67 ^b | 82.88 ^b | 56.71 ^b |
| EG | 165.0 ^a | 121.6 ^a | 112.4 ^a | 129.2 ^a | 114.93 ^a |

Regeneration speed of *S. transiliense* appeared similar para-bola trend with the increase of grazing intensity , and the highest was at MG (Figure 1) , which indicated that moderate grazing could promote the vegetative growth of forage (Yang , et al , 2005 ; Wu , et al , 2005) . Compared with that of between 15th April and 1st May , Regeneration speed of *S. transiliense* between 1st May and 15th May on LG , MG , HG , EG respectively increased 82% , 21% , 49% , 232% , which was possibly correlative to temperature and rainfall .

Grazing intension had a little effect on the species of *S. transiliense* desert , and the density of subordinate grass increased with grazing intensity . After grazing on 15th May , the density of *S. transiliense* on LG , HG , EG decreased 26.76% , 22.75% , 82.03% , but that increased 12.21% on MG (Figure 2) , as further indicated MG was fit to the continual development of desert .

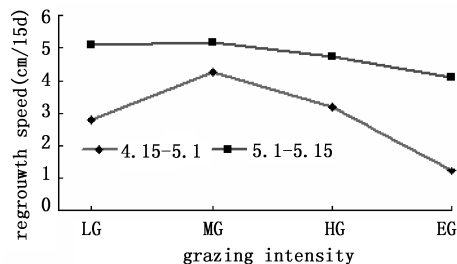


Figure 1 Different regeneration speed after simulate grazing .

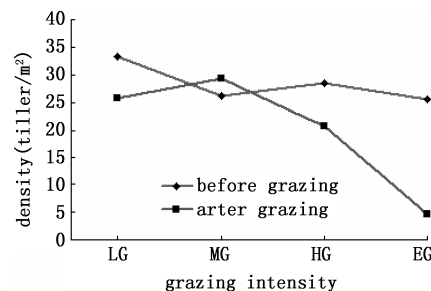


Figure 2 Density of *S. transiliense* contrast before and after grazing .

Conclusions Compared with dry weight , regeneration speed of *S. transiliense* , density and species of community among four grazing intensities , moderate grazing was propitious to the continual development of *S. transiliense* desert pasture .

Reference

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