# Change of Regrowth of *Seripidium transiliensis* Poljak in Different Grazing Disturbance

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

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**Key words :** *Seriphidium transiliense* ,disturbance of grazing ,regeneration ,dry yield ,density

**Introduction** *Seriphidium 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℃ , 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 $m^2$ , 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$^{e}$ | 2 .50$^{e}$ | 1 .67$^{e}$ | 8 .66$^{e}$ | 21 .19$^{e}$ |
| MG | 3 .63$^{e}$ | 9 .94$^{e}$ | 10 .78$^{e}$ | 20 .37$^{e}$ | 32 .90$^{e}$ |
| 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 15$^{th}$ April and 1$^{st}$ May , Regeneration speed of *S . transiliense* between 1$^{st}$ May and 15$^{th}$ 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 15$^{th}$ 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 .

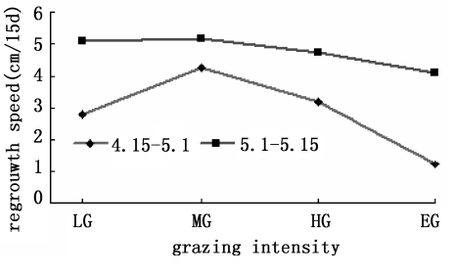


**Figure 1** *Different regeneration speed after simulate grazing .*

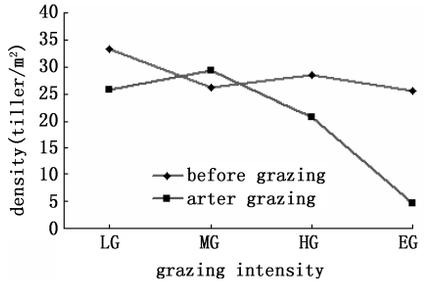


**Figure 2** *Density of* S . transiliense *contrust before and after grazing .*

**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**

Lin You-run , (1991) . Flora Reipublicae Popularis Sinicae (vol . 76) . Beijing : Science Press , 261 .