

研究简报

冷蒿 (*Atemisia frigida*) 种群在放牧干扰下构件的变化

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摘要 对放牧干扰下冷蒿种群构件的变化进行了研究。结果表明: 在放牧干扰下, 冷蒿种群营养枝和生殖枝高度在轻度放牧时缓慢下降, 在中度、重度放牧后, 枝条高度迅速下降。随着放牧强度的增加, 冷蒿种群的营养枝密度和不定根密度增加, 分枝密度和个体大小之间存在一定补偿特性, 营养枝密度的回归曲线表明重牧下冷蒿的营养枝密度已接近补偿阈值。随着放牧强度的增加, 冷蒿种群匍匐茎长度显著地增加; 生殖枝密度在轻度放牧增加, 到中度放牧后生殖枝数急剧减少, 重度放牧下生殖枝基本消失。枝条的性别分化发生变化, 生殖枝的分化率(生殖枝密度/总枝条密度)降低。与此同时, 营养枝的分化率却随着放牧强度的增加而增加。伴随之, 冷蒿种群繁殖格局也发生了重大的调整。

关键词 [冷蒿种群](#); [放牧干扰](#); [构件](#)

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Changes of model of *Atemisia frigida* populations under the disturbance of grazing

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Abstract Experiments was done in early, middle and late growth period from 2000 to 2002. The experimental plant materials *Artemisia frigida* were collected from a series of grazing gradient of *Leymus chinensis* steppe near the Inner Mongolia Grassland Ecosystem Research Station, the Chinese Academy of Science. The location is 43°33'N and 116°40'E. The altitudes range from 1200 to 1250m. The mean annual temperature is -0.4°C. The annual precipitation is 350mm. The evaporation is four times as much as precipitation. The zonal soil is chestnut soil. Four grazing pressure gradients (sampling site) were chosen on a section from herdsmen residence to the research station (enclosed for 20 years), that is no grazing (CK enclosure site), light grazing (LG), moderate grazing (MG) and heavy grazing (HG). Changes of model of *Atemisia frigida* populations under the disturbance of grazing were studied. The results showed: height of vegetative shoots and reproductive shoot decreased slowly in light grazing, but decreased rapidly in middle and heavy grazing. With the increase of grazing intensity density of vegetative shoots and adventitious roots increased. The increase of density of vegetative shoots can compensate for the decrease of height of shoots. But regression curve of vegetative shoot density of *A. frigida* population under different grazing intensities showed that the increase of density of vegetative shoots in heavy grazing had approached to compensational limit. With the increase of grazing intensity length of stolon increased, density of reproductive shoots and the differentiation ratio of reproductive shoots (density of reproductive shoots/density of total shoots) tended to decrease. In the meanwhile, differentiation ratio of vegetative shoots increased. With the increase of grazing intensity the reproductive pattern change

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d from sexual and asexual reproductive to asexual reproductive mainly, which helps *A. frigida* population to become constructive species under heavy grazing.

Key words [Artemisia frigida population](#) _ [disturbance of grazing](#) _ [model](#)

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