松嫩平原肥披碱草种群不同抽穗时间生殖分蘖株表型可塑性

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Reproductive tillers phenotypic plasticity of *Elymus excelsus* population at different earring time in Songnen Plain of Northeast China.

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摘要

每隔4 d对松嫩平原肥披碱草种群进入抽穗初期的生殖分蘖株进行大样本随机挂签,于籽实蜡熟期取样,分析5次采集样本生殖分蘖株数量性状的差异及其与缩短生殖生长时间的关系.结果表明: 生殖分蘖株各数量性状指标均随生殖生长时间的缩短逐渐减小.生殖生长时间的缩短不利于生殖分蘖株的生殖生长、生殖分配和结实.抽穗时间越晚,对生殖分蘖株结实与生殖分配的影响越大.抽穗时间相差16 d,籽实生物量、结实率、生殖分配Ⅰ和生殖分配Ⅱ分别下降99.4%、98.8%、54.3%和99.2%.随生殖生长时间的缩短,株高呈直线函数下降,花序生物量、生殖分配Ⅰ和结实率呈指数函数下降,分株生物量、花序长、小花数呈幂函数下降,籽实生物量、籽实数和生殖分配Ⅱ呈对数函数下降.

关键词: 肥披碱草 生殖生长 生殖分配 数量性状 抽穗时期

Abstract:

The reproductive tillers of *Elymus excelsus* population in Songnen Plain were randomly marked with labels every other four days (five times in total) at early earring stage, and the marked tillers were harvested at dough stage, with the differences of their quantitative characteristics as well as the relationships between the quantitative characteristics and the shortened time of reproductive growth were analyzed. With the shortened time of reproductive growth, the quantitative characteristics of the reproductive tillers decreased gradually, which was not beneficial to the reproductive growth, reproductive allocation, and fruiting of reproductive tillers. The later the earring time, the larger the impact on fruiting and reproductive allocation was. When the reproductive growth time was shortened by 16 days, the grain biomass, setting penentage, reproductive allocation Ⅰ, and reproductive allocation Ⅱ decreased by 99.4%, 98.8%, 54.3%, and 99.2%, respectively. With the shortened time of reproductive growth, the tiller height decreased linearly, spike biomass, reproductive allocation Ⅰ, and setting penentage decreased exponentially, tiller biomass, spike length, and floret number decreased powerly, and grain biomass, grain number, and reproductive allocation Ⅱ decreased logarithmically.

Key words: *Elymus excelsus* reproductive growth reproductive allocation quantitative characteristics earring stage

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