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研究报告

不同刈割强度对牧草地上部和地下部生长性状的影响

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摘要

研究了不同刈割强度对牧草地上部和地下部生长状况的影响.结果表明，适度刈割可提高牧草地上部植株的再生能力.刈割后牧草再生叶片的叶绿素总量变化不大，而叶绿素a/b比值有所增加，轻刈割和重刈割的牧草叶绿素a/b比值分别增至1.59∶1和1.52∶1、不刈割为1.22∶1，有利于增强植物的光合作用.与不刈割处理相比,在刈割初期，重刈割处理下柱花草根系总长、总表面积和平均直径分别下降了54.9%、66.5%和27.2%，根系活力显著下降；但在中后期,刈割处理的牧草地下部根系形态指标活力可恢复到更高的水平.从一年两次收获的累计生物量来看，以轻刈割最高，为3 179.8 g·m^{-2}，重刈割次之，为3 006.1 g·m^{-2}，不刈割最低，为2 936.98 g·m^{-2}，说明一年两次刈割可以提高牧草产量.

关键词 刈割,牧草,生理生态,根系,生物量

分类号

Effects of different cutting intensities on above-and underground growth of Stylosanthes guianensis

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Abstract

The study on the effects of different cutting intensities on the eco-physiological characteristics and growth status of Stylosanthes guianensis showed that moderate cutting could promote the regrowth capacity of the grass.The total content of leaf chlorophyll had no significant difference between zero,light-and heavy cutting,but the ratio of leaf chlorophyll a/b increased to 1.59∶1 and 1.52∶1 under light-and heavy cutting,respectively, compared with 1.22∶1 under zero-cutting,which could be very helpful for the plant to over-compensate itself.Cutting also affected the growth status and activities of plant roots.At the earlier stage of heavy cutting,the total length, total surface area and mean diameter of plant roots decreased by 54.9%, 66.5% and 27.2%,respectively,and root activities also decreased greatly,in comparing with zero-cutting.But,the above-mentioned indices could be recovered to a higher level under different cutting treatments than under zero-cutting at the later growth period of the grass.As for the total annual yield of the grass,it was 3 179.8 g·m^{-2} under light-cutting,3 006.1 g·m^{-2} under heavy-cutting,and 2 936.98 g·m^{-2} under zero-cutting,indicating that rational cutting could improve grass productivity.

Key words

Cutting Forage grass Eco-physiological characteristics Root system Biomass

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