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皖草2号和墨西哥玉米氮肥利用效率分析

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Nitrogen utilization efficiency of Wancao 2 and Zea mexicana

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摘要 | 参考文献 | 相关文章

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摘要 采用^{15}N同位素示踪技术,进行了皖草2号和墨西哥玉米两种饲料作物对氮素的吸收、积累、分配规律以及氮素利用特性的研究。结果表明,生育期内两者的氮积累量逐渐增加;氮在叶片中的分配比例最高,且随刈割次数的增加逐渐减少,茎鞘中氮分配比例逐渐增加;氮素吸收强度皖草2号逐渐增加,墨西哥玉米呈单峰曲线变化。墨西哥玉米再生草吸收氮素来自肥料的比率为97.6%1～00.0%,在整个生育期呈斜“Z”字型变化;皖草2号逐渐减少。氮肥处理间比较,头茬草一次性施肥处理吸收肥料氮比分次施肥处理分别高18.2%和19.3%;再生草的氮素吸收强度以分次施肥效果较好;氮收获指数两处理间差异不显著。皖草2号各次收获草干重、全氮含量、氮累积量和氮回收率均高于墨西哥玉米,且分次施肥处理高于一次性施肥处理,而墨西哥玉米则相反。生产上皖草2号品种应采用分次施用氮肥,而墨西哥玉米则采用一次性施肥的方式,这样既可提高氮肥利用效率,还可获得优质的牧草。

关键词: 氮素吸收 氮回收率 氮素收获指数 皖草2号 墨西哥玉米 氮素吸收 氮回收率 氮素收获指数 皖草2号 墨西哥玉米

Abstract: A pot experiment was conducted to study the nitrogen uptake,accumulation,distribution and utilization efficiency characteristics on Wancao 2(Sorghum Sudangrass hybrid)and *Zea mexicana* using ^{15}N labeled technique. The results showed that nitrogen accumulation of these two cultivars increased gradually during the growth season.The nitrogen distribution ratio of leaves was the highest and reduced with harvest times increasing,while that of stalks increased gradually.Nitrogen uptake intensity of Wancao 2 enhanced gradually,and that of Zea mexican presented an odd peak curve.The ratio of nitrogen derived from fertilizer for *Zea mexicana* was about 97.6% to 100%,and it took on "Z" cure trend, but it decreased gradually for Wancao 2.Comparison between the two modes of nitrogen application showed that nitrogen of two grasses in the first harvest derived from basel nitrogen fertilier was 18.2% and 19.3% higher than that from nitrogen fertilizer applied at three times,and the nitrogen uptake intensity of regrowth grass was higher when nitrogen split applied at three times,however,there were no statistical difference of nitrogen harvest index between these two treatments(P=0.05).Wancao 2 could gain higher dry weight of each harvested grasses,nitrogen accumulation,content and use efficiency than *Zea mexicana*.In conclusion,in order to increase grass nitrogen use efficiency(NUE) and reap high quality forage grasses in practice,nitrogen should be applied at three times for Wancao 2 and as base fertilizer for Zea mexicana.

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