

研究报告

硒肥对豆科牧草圆叶决明生长和植株养分含量及其固氮能力的影响

翁伯琦¹ 黄东风² 熊德中³ 应朝阳¹ 黄毅斌¹ 罗涛²

¹福建省农业科学院生态农业研究中心,福州 350013; ²福建省农业科学院土壤肥料研究所,福州 350013; ³福建农林大学资源与环境学院,福州 350002

收稿日期 2004-3-18 修回日期 2005-2-21 网络版发布日期 接受日期

摘要

通过田间小区试验,研究了施用不同量硒肥对种植于南方红壤的圆叶决明植株生长、牧草品质和根瘤固氮能力的影响.结果表明,1 hm²施用硒肥75 g(S1)、150 g(S2)、225 g(S3)、300 g(S4)处理的圆叶决明植株株高、分枝数、根干重和茎叶干重分别比不施硒肥的对照(S0)处理提高0.3%~6.2%、65.1%~79.5%、155%~252%和23.5%~70.6%,其中以S2处理最佳.施用4种水平硒肥处理(S1~S4)的植株全氮、全磷和全钾吸收量分别比对照(S0)处理提高21.79%~41.46%、20.74%~34.67%和34.3%~62.4%;而圆叶决明植株粗蛋白、粗脂肪、粗纤维和氨基酸含量则分别比对照(S0)处理提高了21.79%~41.46%、1.4%~89.6%、34.1%~56.6%和6.33%~63.24%,其中以S2处理对提高圆叶决明植株营养成分含量的效果最为明显.S4处理的圆叶决明植株体硒含量最高,达0.695 mg·kg⁻¹,比不施硒肥的S0处理提高了0.658 mg·kg⁻¹.在S2处理中,圆叶决明的根瘤重、根瘤数和根瘤固氮酶活性均呈现为最大值,分别比对照(S0)提高了131.7%、114.3%和1 417.9%.

关键词 [硒,圆叶决明,植株生长,养分含量,固氮能力](#)

分类号

Effects of selenium on *Chamaecrista rotundifolia* growth,nutrient absorption and nitrogen-fixing ability

WENG Boqi¹,HUANG Dongfeng²,XIONG Dezhong³,YING Zhaoyang¹,HUANG Yibin¹,Luo Tao²

¹Research Center of Ecological Agriculture,Fujian Academy of Agricultural Sciences,Fuzhou 350013,China;²Institute of Soil and Fertilizer,Fujian Academy of Agricultural Sciences,Fuzhou 350013,China;³Department of Resource and Environment,Fujian University of Agriculture and Forest,Fuzhou 350002,China

Abstract

In this paper,a field experiment was conducted on a red soil of South China to study the effects of applying selenium fertilizer on the growth,forage quality and nitrogen-fixing ability of *Chamaecrista rotundifolia*. The results showed that applying 75,150,225 and 300 g Se·hm⁻² could increase the plant height,branch number,dry root weight and dry forage yield by 0.3%~6.2%,65.1%~79.5%,155%~252% and 30.6%~54.1%,respectively. The total nitrogen,total phosphorus and total potassium contents of plant were increased by 21.79%~41.46%,20.74%~34.67% and 34.3%~62.4%, respectively,and the raw protein,raw fat,raw fiber and amino acid contents were increased by 21.79%~41.46%,1.4%~89.6%,34.1%~56.6% and 6.33%~63.24%,respectively. Among the 4 doses,150 g Se·hm⁻² was the most effective and suitable application amount. The selenium content in plant after applying 300 g

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(436KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“硒,圆叶决明,植株生长,养分含量,固氮能力”的相关文章](#)

▶ 本文作者相关文章

· [翁伯琦](#) [黄东风](#) [熊德中](#) [应朝阳](#) [黄毅斌](#) [罗涛](#)

Se·hm⁻² (S4) was 0.695 mg·kg⁻¹, with an increase of 0.658 mg·kg⁻¹ compared to no selenium fertilization. There was a significantly positive correlation between plant selenium content and applied selenium ($R^2=0.9666^{**}$). The root nodule weight, number and nitrogenase activity in treatment 150 g Se·hm⁻² (S2) were respectively 131.7%, 114.3% and 1 417.9% higher than those of no selenium fertilization. The correlation between applied selenium and nitrogenase activity was also significant ($R^2=0.9606^*$).

Key words

[Selenium](#) [Chamaecrista rotundifolia](#) [Growth](#) [Nutrient content](#) [Nitrogen fixing ability](#)

DOI:

通讯作者