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土壤-青蒿系统中镉(Cd)迁移规律及Cd对青蒿生长和青蒿素含量的影响

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中文摘要:目的:研究环境中镉(Cd)在青蒿中的转运规律,及其对青蒿生长发育及其青蒿素含量的影响。方法:设置Cd的质量浓度为0.5,1.5,4.5 mg·kg⁻¹,以Cd(NO₃)₂·4H₂O的形式加入土壤中,在盆栽条件下进行研究。结果及结论:不同Cd水平均抑制了青蒿的生长,整个生长期中,Cd处理组青蒿均表现为生长缓慢,生物量及各项农艺指标降低,Cd在青蒿体内绝大部分保留在根部,向地上部分迁移的较少,当Cd为1.5,4.5 mg·kg⁻¹时,青蒿根部和地上部分的Cd含量比值分别达到 1.8 : 1, 2.3 : 1;当Cd为0.5 mg·kg⁻¹时,青蒿素的合成积累显著提高,但其他Cd浓度下青蒿素含量与空白组没有差异。

中文关键词:青蒿 青蒿素 Cd Cd迁移

Accumulation and translocation of cadmium in soil and plant and its effectson growth of *Artemisia annua* and artemisinin content

Abstract:Objective: To study the accumulation and translocation of cadmium in the soil and *Artemisia annua*, and observe its effects on growth of *A. annua* and artemisinin content. Method: *A. annua* were cultivated in pots with Cd concentration at 0.5, 1.5,4.5 mg·kg⁻¹ level, respectively. Result and Conclusion: The growth of *A. annua* was inhibited at all the Cd levels characterized by the decreases of biomass and agronomic parameters; Most of Cd was accumulated in the roots of *A. annua*, and the ratios of Cd concentrations in roots and aerial part were 1.8 : 1 and 2.3 : 1 at 1.5,4.5 mg·kg⁻¹ Cd level, respectively. Artemisinin content increased significant at 0.5 mg·kg⁻¹ Cd level, but there were no significant changes comparing with control group other Cd levels.

keywords: *Artemisia annua* artemisinin cadmium translocation of cadmium

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