

## 重金属污染土壤生态工程修复的试验研究

### Ecological engineering remediation of heavy metal polluted soil

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中文摘要:

该文研究了细叶香薷(*Moslem chinensis Maxim*)和构树(*Broussonetia papyrifera*(Linn.) Vent.)对Cu、Zn污染土壤的修复及污染土壤对植物生理性状的影响。研究表明:随着盆栽土壤中重金属浓度的增高,植物体内吸收重金属的浓度相应增大。Cu在细叶香薷体内的含量是地上部<地下部,Zn含量却是地上部>地下部;重金属Cu、Zn在构树体内的浓度都是根部>叶部>茎部。细叶香薷的富集系数基本大于1,对Cu的最大富集系数是2.42;构树的富集系数都在0.5以下,但由于其地上部生物量很大,从土壤中移除的重金属量也很可观,而且构树能产生经济价值,建议把构树和细叶香薷组成一个立体的生态工程修复模式,既能修复污染土壤又能恢复污染地区的生态环境和土壤微生物环境,产生经济和环境效益。

英文摘要:

Remediation of Cu and Zn from a contaminated soil by Herba Elsholtziae and Papermulberry and impacts of Cu and Zn pollutant in soil on physiological characteristics of the plants were analyzed. Results show that heavy metal concentrations in the plant tissue increase with the increase of heavy metals in the soil in pot experiment. For Herba Elsholtziae, concentration of Cu is the aboveground part < the underground part while concentration of Zn is the aboveground part > the underground part. However, for Papermulberry, concentrations of both Cu and Zn are as follows: root>leaf>stem. In general, the accumulation coefficient in the Papermulberry is more than 1, especially the greatest accumulation coefficient is 2.42 for Cu. Although the accumulation coefficient for Papermulberry is less than 0.5, the biomass in the aboveground part is huge, therefore, the content of heavy metals removed from the soil is considerable. In addition, the Papermulberry has good economic value. Combined the Herba Elsholtziae with the Papermulberry form, a three-dimensional model of ecological engineering remediation is established. The model would be able to remove heavy metals from the contaminated soil, to restore ecological environment and microorganism environment of soil and to bring economic and environmental benefit.

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