

# 水生态学杂志

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贵州高原生态浮床6种水生植物水质改善效果研究

## Research on Water Quality Improvement Effect by 6 Kinds of Aquatic Plants on Simulate Ecological Floating Bed

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中文摘要:

为了研究贵州高原麦西河库湾水质改善生态修复工程示范区内生态浮床适合种植何种水生植物, 以及植物对水质改善的效果, 选择水蓼 (*Polygonum hydropiper* L.)、水芹菜 (*Oenanthe javanica* D.C.)、空心菜 (*Ipomoea aquatica*)、慈菇 (*Sagittaria sagittifolia* L.)、菖蒲 (*Acorus calamus*)、美人蕉 (*Canna generalis* Bailey) 6种贵州高原常见的水生植物进行室内模拟试验。结果表明: (1) 6种水生植物对总氮去除率为40.0%~90.9%, 总磷去除率为53.1%~87.1%, 氨氮、CODCr等其余指标变化也很明显, 去除效果均较好; (2) 从植物的生长情况来看, 菖蒲和空心菜的净增生物量最大, 水蓼最小; (3) 植物的地上部分氮磷含量较高, 可以定时收割地上部分以转移水中的营养盐。通过对比分析, 认为菖蒲和空心菜是比较适合高原水库和湖泊生态浮床上种植的水生植物。

英文摘要:

6 kinds of common aquatic plants on Guizhou Plateau were chosen to do laboratory experiment to investigate which kind(s) of plants could be suitable to employ on ecological floating bed in the demonstration project of ecological restoration of Maixi River and what was the effect of water quality improvement. The plants included *Polygonum hydropiper* L., *Oenanthe javanica* D.C., *Ipomoea aquatica*, *Sagittaria sagittifolia* L., *Acorus calamus* and *Canna generalis* Bailey. Results: (1) The removal rates of total nitrogen of the plants above ranged between 40.0% and 90.9%, those of total phosphorus were between 53.1% and 87.1%. Other indexes such as ammonia nitrogen and chemical oxygen demand also varied obviously and showed well effect of removal. (2) *Acorus calamus* and *Ipomoea aquatica* had larger net increase of biomass while *Polygonum hydropiper* L. had the smallest. (3) The content of nitrogen and phosphorus in overground parts of the plants were higher, thus the nutrient could be transferred from water body by reaping the overground parts. It was recognized that *Acorus calamus* and *Ipomoea aquatica* could be appropriate to employ on the ecological floating bed on Guizhou Plateau.

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