

复合立体生物浮床技术对微污染水体氮磷的去除效果

张毅敏, 高月香, 吴小敏, 陈楚星, 魏京玲

环境保护部南京环境科学研究所

Effect of the Technique of Complex Three-Dimensional Ecological Floating-Bed in Removing N and P From Slightly Polluted Water Body

ZHANG Yi-Min, GAO Yue-Xiang, WU Xiao-Min, CHEN Chu-Xing, WEI Jing-Ling

Nanjing Institute of Environmental Sciences, Ministry of Environmental Protection

[摘要](#)[参考文献](#)[相关文章](#)Download: [PDF \(686KB\)](#) [HTML 1KB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要 复合立体生物浮床技术是一种有效的水体污染控制技术。利用竹子制成网格状的立体框架,安放植物、螺蚌等,同时配以弹性材料,形成复合生物浮床。选用芋头、慈姑、荸荠、水芹、薤菜和美人蕉作为浮床植物,研究其在夏季和秋季对微污染水体中氮磷的去除效果。结果表明,在夏季试验中,薤菜浮床>美人蕉浮床、荸荠浮床、芋头浮床>慈姑浮床、水芹浮床;在秋季试验中,芋头浮床>慈姑浮床、美人蕉浮床、薤菜浮床>荸荠浮床、水芹浮床。在夏季、秋季试验中,芋头浮床的除氮效果一直很好,对总氮的最大去除率分别达71%和62%;而薤菜浮床的除磷效果一直很好,对总磷的最大去除率分别达30%和81%。比较了复合立体浮床与传统平面浮床对总氮、总磷处理效果的差异,指出复合立体浮床技术在微污染水体的生态修复方面具有较好的应用前景。

关键词: 复合立体生物浮床 氮 磷 去除效果 微污染水体

Abstract: The technique of complex three-dimensional ecological floating-bed is an effective water pollution control technology. The complex floating-bed is composed of a framework with grids made of bamboo, plants and mollusks, such as snails and mussels, on the grids, an elastic material placed on or under the framework. *Colocasia esculenta*, *Sagittaria sagittifolia*, *Eleocharis dulcis*, *Oenanthe javanica*, *Ipomoea aquatica* and *Ganna generalis* were used as subjects in the research on their effect in removing nitrogen and phosphorus from slightly polluted water body in summer and fall. Results show that the N and P removing effects of the six floating-beds different in plant on the bed followed the order of *Ipomoea aquatica*>*Ganna generalis*, *Eleocharis dulcis*, *Colocasia esculenta*>*Sagittaria sagittifolia*, *Oenanthe javanica* in summer and *Colocasia esculenta*>*Sagittaria sagittifolia*, *Ganna generalis*, *Ipomoea aquatica*>*Eleocharis dulcis*, *Oenanthe javanica* in fall. Obviously *Colocasia esculenta* showed good N-removing effect in both summer and fall, with maximum removal rate reaching 71% and 62%, respectively, of total N, while *Ipomoea aquatica* is good in P removing with maximum removal rate reaching 30% and 81%, respectively, of total P. Comparison between the new floating-bed with the traditional flat floating bed in N and P removing effect demonstrates that the former enjoys a bright prospect in application to ecological remediation of slightly polluted water bodies.

Keywords: complex three-dimensional ecological floating-bed nitrogen phosphorus removal effect slightly polluted water body

Received 2010-11-05;

Fund:

国家“十一五”重大科技专项(2008ZX07101-007), 国家“十五”重大科技专项(2002AA601012-4)

About author: 张毅敏(1965—), 女, 黑龙江齐齐哈尔人, 研究员, 博士, 主要研究方向为面源污染控制、湖泊富营养化与水体生态修复。E-mail: zym@nies.org

引用本文:

张毅敏, 高月香, 吴小敏, 陈楚星, 魏京玲. 复合立体生物浮床技术对微污染水体氮磷的去除效果[J] 生态与农村环境学报, 2010, V26(增刊1): 24-29

ZHANG Yi-Min, GAO Yue-Xiang, WU Xiao-Min, CHEN Chu-Xing, WEI Jing-Ling. Effect of the Technique of Complex Three-Dimensional Ecological Floating-Bed in Removing N and P From Slightly Polluted Water Body[J] Journal of Ecology and Rural Environment, 2010, V26(增刊1): 24-29

Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

作者相关文章

- ▶ [张毅敏](#)
- ▶ [高月香](#)
- ▶ [吴小敏](#)
- ▶ [陈楚星](#)
- ▶ [魏京玲](#)
- ▶ [张毅敏](#)
- ▶ [高月香](#)
- ▶ [吴小敏](#)
- ▶ [陈楚星](#)
- ▶ [魏京玲](#)