

研究简报

人工湿地污水处理系统三种红树植物抗性生理特性

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摘要 研究了淡水条件下潜流型人工湿地污水处理系统中红树植物海桑、桐花树和木榄的抗性生理特性. 结果表明,在为期1年的试验中,人工湿地污水处理系统3种红树植物超氧化物歧化(SOD)、过氧化物酶(POD)和过氧化氢酶(CAT)活性持续升高并维持在较高水平,脯氨酸含量在7~9月达到最高水平,质膜透性没有明显的变化规律.对人工湿地与深圳福田自然保护区3种红树植物抗性生理指标进行比较,前者SOD、POD和CAT活性明显低于后者,脯氨酸含量前者明显高于后者,而丙二醛(MDA)含量和质膜透性则两者没有差别.3种红树植物能较好地适应淡水条件下潜流型人工湿地污水处理系统.

关键词 [红树林](#) [潜流型人工湿地](#) [海桑](#) [桐花树](#) [木榄](#) [抗性生理](#)

分类号

Resistant physiology of three mangrove species in a constructed wetland sewage treatment system

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Abstract

This paper studied the resistant physiology of three mangrove species, *Sonneratia caseolaris*, *Aegiceras corniculatum* and *Bruguiera gymnorrhiza* in a subsurface flow constructed wetland sewage treatment system under freshwater condition. The results showed that in a year period, the superoxide dismutase (SOD), peroxidase (POD) and catalase (CAT) activities of three mangrove species increased gradually and maintained at a high level, the proline content reached the maximum from July to September, while the plasma membrane permeability did not show any obvious change. In comparing with those grown in the Futian Nature Reserve of Shenzhen, three mangrove species in the test sewage treatment system had lower SOD, POD and CAT activities and higher proline content, while no significant difference was observed in the malondialdehyde (MDA) content and plasma membrane permeability. It was suggested that three mangrove species could adapt to the subsurface flow-constructed wetland sewage treatment system under freshwater condition.

Key words [Mangrove](#) [Subsurface flow-constructed wetland](#) [Sonneratia caseolaris](#) [Aegiceras corniculatum](#) [Bruguiera gymnorrhiza](#) [Resistant physiology](#)

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