**《Separation and Purification Technology》杂志刊登“不同曝气量下曝气生物滤池同时去除饮用水中的氨氮和锰离子的效果分析”**

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关键词：曝气；曝气生物滤池；溶解氧；优化处理

摘要：在不同曝气量情况下，本文对曝气生物滤池同时处理饮用水中氨和锰的效果进行了研究。水样为向饮用水中分别添加不同浓度的COD和锰离子配制而成。对于高度污染的饮用水，随着曝气量的增加，曝气生物滤池对COD的去除效果无明显提高。2.0 L/min（溶解氧为5.26 mg/L）的曝气量能够使氨氮的去除率达到99.3%，出水浓度低于规定浓度标准（<1.5 mg/L）。但是，在曝气量为0.3 L/min（溶解氧为2.94 mg/L）时，锰的去除率最高，为99.1%。对于低度污染的饮用水，在曝气量为为0.1 L/min（溶解氧为4.68 mg/L）时，氨氮和锰的去除率分别可以达到98.4%和82.9%。对于高度污染饮用水，去除氨氮和锰的最佳条件分别是曝气量为2.0 L/min和0.3 L/min时，而对于低度污染的饮用水，同时去除氨氮和锰的最佳条件是曝气量为0.1L/min。

**Simultaneous NH4+-N and Mn2+ removal from drinking water using a biological aerated filter system: Effects of different aeration rates**

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Key word: Aeration; Biological aerated filter; Dissolved oxygen; Optimisation of treatment

Abstract: The performance of a biological aerated filter (BAF) system was studied to assess the effects of different aeration rates on simultaneous ammonium and manganese (Mn2+) removal from drinking water. Samples of drinking water with simulated high and low strengths of pollution with chemical oxygen demand (COD), and Mn2+ were used to evaluate the bio-filtration system. For high-strength polluted drinking water, the BAF system showed insignificant COD removal with increased aeration rate (AR). An AR of 2.0 L/min (dissolved oxygen: 5.26 mg/L) led to higher (99.3%) removal of and an effluent concentration below the regulated concentration limit (<1.5 mg/L). However, higher manganese removal (99.1%) was achieved at an AR of 0.3 L/min (dissolved oxygen: 2.94 mg/L). Furthermore, for low-strength polluted drinking water, up to 98.4% of and 82.9% of Mn2+ were removed simultaneously at an AR of 0.1 L/min (DO: 4.68 mg/L). The best conditions for simultaneous and Mn2+ removal from high-strength polluted drinking water were achieved at ARs of 2.0 L/min and 0.3 L/min, respectively, while their removal from low-strength polluted drinking water was optimised with an AR of 0.1 L/min.

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