漁產廢水生物膠凝吸附與沉澱處理程序之研究

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摘 要

本研究採用生物膠凝吸附(bio-flocculation-adsorption)沉澱程序取代傳統二級處理的初沉池，改善漁業廢水的處理效率。生物膠凝吸附沉澱程序的影響參數包括曝氣時間與混合液懸浮固體濃度(MLSS, mixed liquor suspended solids)。最佳條件的曝氣時間與混合液懸浮固體濃度分別為0.5立方公尺/小時/立方公尺(20分鐘)，4公克/公升。沉澱時間則為1.5小時。本研究顯示生物處理前生物膠凝吸附沉澱程序的總懸浮固體去除率為84.64%，而單純沉澱51.43%，硫酸鋁化學沉澱86.29%。但就全處理系統(含活性污泥程序)而言，生物膠凝吸附沉澱程序BOD(5天)去除率93.8%，優於單純沉澱64.36%與硫酸鋁化學沉澱73.54%。推斷生物膠凝吸附過程具有污泥馴化與生物降解的功效。基於廢水處理效率與成本考量，生物膠凝吸附沉澱程序與活性污泥系統的組合是處理漁業廢水的可行方案。

關鍵詞 : 生物膠凝、生物吸附、活性污泥、漁業廢水

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