生物絮凝劑之生產及影響絮凝作用因子之探討

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摘 要

本研究第一部分係利用自行篩選菌株Bacillus subtilis DYU1作為生產生物絮凝劑 (聚麩胺酸(polyglutamic acid, PGA)) 生產菌株，於5-L發酵槽中探討不同攪拌速率對於PGA生產之影響。在37 ℃、攪拌速率300 rpm、曝氣量1 vvm以及初始pH值為8的培養條件下，可獲得最佳的PGA產量為12.6 g/L。B. subtilis DYU1生產之生物聚合物 (biopolymer) 經核磁共振 (nuclear magnetic resonance spectrometry, NMR) 與胺基酸分析 (amino acid identification) 得知生物聚合物主要結構為PGA。第二部分係影響生物絮凝劑(PGA) 絮凝影響因子之探討。Bacillus subtilis DYU1生產的PGA對澱粉廢水、SiO2廢水、活性污泥、Chlorella sp. Y8-1懸浮液(淡水條件下)具有良好的絮凝能力。在所有的絮凝對象添加三價陽離子Fe3+或Al3+明顯地促進PGA的絮凝活性。此外，根據實驗觀察到的結果提出並描述絮凝劑在絮凝過程中的機制。

關鍵詞 : 生物絮凝劑、聚麩胺酸

目錄

 表目錄

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