碳酸氫鈉濃度對擬球藻生長之影響

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摘 要

本實驗所使用之擬球藻(Nannochloropsis.sp.)是一株海洋微藻，具有累積油脂的特性。研究目的在找出最適合擬球藻生長的碳酸氫鈉的濃度，以利於大量藻體生質的生產。實驗中的主要變數為培養基中之碳酸氫鈉濃度，其濃度範圍由1~30 g L-1 。實驗培養基為經修改之Walne培養基，含有2.5% 之NaCl及50 mg L-1 之N03-N。批次培養的其他條件：初始pH=8，連續照光強度12000 Lux。 實驗結果顯示在碳酸氫鈉濃度為14 g L-1 時，擬球藻經8小時批次培養其生質濃度可達0.8 g-dry-wt L-1，生質生產速率達0.56 g-dry-wt L-1 d-1，而二氧化碳的固定率為85%，隨培養時間增加，擬球藻生長速率開始下降，主要原因：(1)培養基的pH上升，並超過9.5，(2)培養基離子強度增加。由批次培養的結果，初始碳酸氫鈉濃度與比生長速率的關係，可以Haldane模式表示之。依據此模式可計算出擬球藻最佳碳酸氫鈉生長濃度為15 g L-1。

關鍵詞 : 擬球藻、碳酸氫鈉、Haldane模式

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