二階段醱酵時不同生長條件對綠殭菌產孢之影響

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摘 要

蟲生真菌綠殭菌能感染30多種鱗翅目害蟲，特別對夜蛾科幼蟲致病力強，其分生孢子對害蟲具感染性，是極具開發潛力的殺蟲微生物。本研究以Nomuraea rileyi CCRC 35515為試驗菌株，探討二階段醱酵時不同生長條件對綠殭菌產孢之影響。於醱酵中途加入營養源試驗中，液態醱酵第五天時加入20 mL氮源(80% V8 juice及0.6%玉米浸粉)，液態醱酵至第六天接種至固態基質其產孢量可達6.97×109 conidia/g-dry material。 此外在添加界面活性劑於液態培養基試驗中，以添加全透力於液態培養基，菌體生長至第五天時菌體濃度最高可達0.0453 g/mL。在產量方面，亦是以添加全透力產孢量最高達4.89×109 conidia/g-dry material。研究結果發現，在搖瓶試驗中，使用棉花塞(瓶塞32 mm、棉花塞重量約4.8 g)為封瓶者，菌體濃度較使用橡皮塞(瓶塞中心之通氣孔洞，直徑約4 mm，孔隙中填充0.25 g棉花)佳，可達0.03 g/mL，產量亦是以棉花塞者最佳達1.11×1010 conidia/g-dry material。此外在添加幾丁聚醣試驗中，以添加1%幾丁聚醣於固態基質中最佳，產孢量達5.69×109 conidia/g-dry material。生物檢定中對三齡期之甜菜夜蛾死亡率並無助益，死亡率為45%±3.1%。

關鍵詞 : 二階段醱酵、綠殭菌、分生孢子、幾丁聚醣

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