

The Studies on Protease and Immobilization of *Bacillus cereus* YQ-308

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ABSTRACT

Bacillus cereus YQ-308 was isolated from soils collected at central part in Taiwan. The culture supernatant has inhibitory activity to the growth of plant pathogens. Maximum protease activity was obtained when *Bacillus cereus* YQ-308 was grown aerobically at 25 °C for 1 day in a medium consisting 4% chitosan, 0.3% lactose, 0.2% polypeptone, 0.1% K₂HPO₄, 0.05% MgSO₄ at pH 7. After concentration of the culture supernatant by precipitation with ammonium sulfate, a fungicide was purified by ion-exchange chromatography. The optimum pH and temperature were 9 and 50 °C, respectively. The pH and temperature stability was analyzed and exhibited more stable at pH 5~9 and 50~60 °C. Antifungal activity of the culture supernatant was found when using assay based upon inhibition of hyphal extension and spores germination of the fungal *F. oxysporum*. Make use of the marine wastes to produce antifungal substance was displayed powerfully inhibition on plant pathogens. Expect that the fungicide could apply to the agriculture in the future.

Keywords : *Bacillus cereus*, chitosan, protease, immobilization.

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