

CHAPTER 5

CONCLUSIONS

From 45 isolates, 29 isolates produced protease enzyme and showed clear zone around their colonies when incubated on LB medium containing 1.0% (w/v) skim milk. The best protease producer was isolate ECM04. The isolate ECM04 was identified to be *Bacillus amyloliquefaciens* on the basis of morphology, biochemical properties and 16S rDNA sequence analysis.

The optimal medium for protease production by isolate ECM04 were consisted of 7% crab shell powder, 0.1% K_2HPO_4 , 0.05% $MgSO_4 \cdot 7H_2O$, and 0.75% carboxymethyl cellulose, pH9-10 and temperature 37°C. The highest protease activity was increased from 2.64 to 3.74 U/ml calculated as 5 fold. The effective pH and temperature for protease activity of isolate ECM04 were 8 and 37°C respectively.

The liquid phase fermentation was the most effective green technology for protein removal of crab shell. The deproteinization increases up to 79.65% on 3 days.