CHAPTER 5

CONCLUSIONS

1. *Bacillus* sp. FAS001 was the most favorable strain for protease production. The enzyme is capable of hydrolyzing soy protein isolate at pH 6.8 and 39.5°C with high stability either at pH 3.0 or at elevated temperatures, and less susceptibility to soybean trypsin inhibitor
2. The highest protease production of *Bacillus* sp. FAS001 was achieved by inoculating 0.6 ml of 15-h seed to the 20 ml of optimum medium, containing 2.0% SBM, 1.0% rice flour, 0.05% $MgSO_4$ $7H_2O$, 0.1% K_2HPO_4 and 1.5% $CaCl_2$ in 125-Elermenyer flask. The media was adjusted to pH 5.0 before inoculating and aerobically incubated at 37°C for 36 h on a rotary shaker (200 rpm).
3. Corn flour was the most favorable carrier for enzyme immobilization.
4. Crude protease powder was stable (>12 weeks) during storage at 4°C or ambient temperature, with no effect of air exposure.
5. Crude protease powder from FAS001 contained not only protease but also other carbohydrase and phytase activities.
6. Overall, the *in vitro* digestibility demonstrated that crude protease supplement improved digestibility of DM, CP, CF, EE and Ash compared with IE.
7. The average daily gain (ADG) and the feed conversion ratio (FCR) was improved with the protease supplement ($P<0.05$), whereas the average daily feed intake (ADFI) of pig offered diet with different sources of enzyme was not statistically different ($P>0.05$).