

CHAPTER FIVE

Conclusion

- The present study is the first report of chitinase enzyme from *Geomyces* spp. strains isolated from King George Island. All strains of *Geomyces* showed chitinase activity with 3.85-0.8 cm of clear zone. The best strain was *Geomyces* sp. 5 (AK07KGI102 R1-4) with the biggest size of clear zone at both psychrotrophic and psychrophilic temperatures.
- RA values varies among different strain of the *Geomyces* spp. (1.49 to 0.4). *Geomyces* sp. 5 (AK07KGI102 R1-4) showed highest RA value as compared to another strains, followed by *Geomyces* sp. 1 (AK07KGI601 R3-1), *Geomyces* sp. 2 (AK07KGI902 R1-1), *Geomyces* sp. 1 (AK07KGI402 R1-1), *Geomyces* sp. 1 (AK07KGI501 R2-1) and *Geomyces* sp. 4 (AK07KGI902 R1-1).
 - From six strains of *Geomyces* spp. only two strains *Geomyces* sp. 5 (AK07KGI102 R1-4) and *Geomyces* sp. 1 (AK07KGI601 R3-1), which highest RA value, have been tested for protein concentration and enzyme assay based on sugar reduction. The value of soluble protein ranged between, 0.0028-0.0020 mg/ml, and production rate of *N*-acetylglucosamine, ranged between 0.673-0.553 $\mu\text{mol/ml/hr}$.
 - Optimum condition for chitinase activity was obtained at pH 6.5 and incubation temperature at 37 °C.