CHAPTER 5

Conclusions

1. The suitable extraction method for isoflavone glucosides extraction was high-power ultra sonication using 80% ethanol extraction and temperature of 80°C for 160 minutes. The extracted soy germ composed of isoflavone glucosides at 595.93 mg/100 gram of soy germ.

2. The optimal medium and conditions for culture of *B.coagulans* PR03 of peptone, beef extract, glucose, magnesium sulfate were 2.00, 14.84, 2.00 and 0.10, respectively at incubation temperature at 30°C, pH 7.96 to harvesting of β-glucosidase at 18 hours of incubation was the highest β-glucosidase activity (4.01 mU/ml).

3. The appropriate condition for isoflavone aglycones production with the ratio of isoflavone glucosides, *Bacillus coagulans* PR03 and deionize water were 1: 1: 8 at 37.50°C for 120 hours. Additionally, using the soluble of Amberlite XAD-4 resin 100 g using 100 g per 100 ml isoflavone aglycones solution could be purified (42.22 %).

4. In the development of beverage product from aglycones, the suitable ingredients were of purified isoflavone, passion fruit, fructose syrup and inulin powder were 1 ml, 55.78 ml, 11.22 ml and 2 g, respectively.

5. The developed isoflavone aglycones beverage composed (1 serving size = 70 ml) composed of isoflavone of 23.07 mg, energy level was 75.39 Kcal. The moisture, protein, total fat, carbohydrate and ash contents were 94.75%, 0.67%, 0.33%, 4.02% and 0.26%, respectively. Considering, the factors that affect the overall acceptability on isoflavone aglycones beverage such as gender, age, education and salaries of the consumers using chi-square test showed that gender, age, education and salary were not correlated on isoflavone aglycones beverage by chi-square ($\lambda^2 \geq 0.05$). Consumer acceptability (n=200) of product. The preference of color was in range of like

moderately (6.02). While the preference of odor, viscosity, sweetness, sourness and overall acceptability were in range of like slightly to like moderately (5.52-5.86).