CHAPTER 10
CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

This study could be concluded as follows:

1. The composition of corn milk was varied according to genetic differences and harvest period. Based on presences of yield and composition, corn milk extracted from the ATS-5 sweet corn that harvested on the 23rd day after silking was considered as the best corn milk for yogurt making.

2. Distilled water added to corn milk at a ratio of 1:2 was a suitable quantity for production of corn milk yogurt.

3. Fortification the corn milk with 4.0% (w/v) sodium caseinate produced yogurt with the most acceptability. The yogurt had high counts of starter cultures, low whey drainage and homogeneous protein networks with small pore size.

4. Lactose addition promoted the growths of *S. thermophilus* and *L. delbrueckii* subsp. *bulgaricus*, and enhanced acid production in both fermented corn milk and corn milk yogurt. The optimum level of additional lactose was 2% (w/v). Adding 2% lactose to corn milk was not affected the physical properties and textural profile parameters of corn milk yogurt.

5. Fortification of gelatin to corn milk yogurt caused an increase in acidity and most of TPA parameters. The optimum level of additional gelatin which could yield the most acceptability was 0.4% (w/v).

6. Using the mixed cultures of *S. thermophilus* and *L. delbrueckii* subsp. *bulgaricus* at a ratio of 1:1 was the better procedure for making corn milk yogurt than using the individual culture. The yogurt inoculated with mixed cultures obtained the high number of starter cultures, 11.84 log CFU/ml.

7. The inoculation quantity affected the growth of starter cultures in the corn milk yogurt. The maximum growth of 2% (v/v) starter cultures of corn milk yogurt attained at the optimum fermentation time of 4 h. The maximum counts of *S.*

thermophilus and *L. delbrueckii* subsp. *bulgaricus* were 11.82 and 9.61 log CFU/ml, respectively.

8. Corn milk yogurt had health benefit over the commercial cow's milk yogurt. Corn milk yogurt contained higher protein. Fat content of corn milk yogurt was lower than those of cow's milk yogurt about 10 times. The corn milk yogurt was harder and more consistency than commercial cow's milk yogurt. Appearance, color and flavor scores from sensory evaluation of corn milk yogurt and commercial cow's milk yogurt was not significant differences. Fatty acid esters were special flavor compounds of corn milk yogurt whereas fatty acid esters were not found in the commercial yogurt. The amounts of *S. thermophilus* and *L. delbrueckii* subsp. *bulgaricus* in corn milk yogurt were higher than those in commercial yogurt. Shelf lives of corn milk yogurt and commercial yogurt were 21 and 28 days at 5°C, respectively.

10.2 RECOMMENDATIONS

1. Texture of corn milk yogurt should be improved by homogenization of milk based before pasteurization.

2. Taste of corn milk yogurt was too sour. The sour taste could be reduced or masked by fortification of sweetening agents. Glucose is recommended because it is not allergic by most consumers.

3. To improve the taste, corn milk yogurt should be prepared as stirred yogurt by adding syrup and stirring after fermentation.