CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

The study of extracting agar from red seaweed, Gracilaria from southern Thailand can be concluded as follows:

1. The optimum conditions of extraction are pH between 5.5-6.5, heated at 90°- 100°C with stirring for 2 hrs.

2. Acid sodium phosphate buffer was proved to be the best pH controller.

3. The maximum agar yield of 26 wt % (dry basis) was obtained from extracting seaweed from Ranong.

4. The alkali pretreatment of seaweed before extraction is necessary to improve gel strength of the extracted agar.

5. The agar obtained was in a form of a thin spongy sheet with light weight, and transparent like glass.

6. The quality of extracted agar from this experiment was resonably good in comparison with the agar commercially available.

7. The gel strength of extracted agar was rather low.

8. The agar yield of seaweed from southern Thailand was about 20-26 % (dry basis) viz. 21-26 % from Ranong, 20-23 % from Songkla and 18-21 % from Suratthanee.

6.2 Recommendations for Future Study

The experiment, described in the previous pages, is only the first step in studying the extraction of agar from red seaweed, genus Gracilaria from southern Thailand in a laboratory scale. This study is presently considered to be the appropriate one. However, additional in formation is essential in order to develop a proper processing method for large scale agar production. The recommended future investigations are listed below:

1. Determination of monthly yield of Gracilaria from southern Thailand over a period of one year to study the effect of seasonal variation on its agar yield.

2. To conduct further studies on the methods of drying agar such as Spray drying, Drum drying or Infrared drying to obtain a good powder agar.

3. To study other methods of extraction such as extraction with glycerol, anhydrous ammonia or other solvents, pressure extraction, and the use of alcohols and other flocculants to avoid the freezing operation.

4. To study the method of harvesting and drying the seaweeds to obtain better weeds for extraction which will yield a good quality agar.