5. CONCLUSION AND SUGGESTION

5.1. Conclusion

Different combination of water ratio, boiling time, and boiling repetition gives various responses. An optimal boiling condition is able to improve the quality of *nata de coco*, as it increase the thickness, reduced the hardness, and makes the *nata* color become lighter. Response surface methodology enabled the determination of optimal boiling conditions for obtaining greater *nata de coco* quality. The R^2 value for all responses is very low. The significant regression was found only in thickness and hardness. Results of lack of fit test indicate the inadequacy ($P>0.05$) of the fitted response surface model, except for hardness ($P>0.1$). The optimal boiling conditions for all response that predicted in this research are possible to be implemented by the company. However, the optimal boiling condition should be picked by compromising the adequacy of the model. Since all of the response models except for hardness were lack of fit, it was decided to select the optimum boiling conditions for optimizing hardness. Hardness of *nata de coco* was predicted to be 367.849 gf for *nata* and water ratio of ≈1:5, boiling time ≈6.5 minutes, and boiling repeated ≈1 times. The critical value of water ratio and boiling time obtained in this research is giving an improvement for the company in setting standardize of time and amount of water used in the boiling process. The critical value of boiling repetition in this research suggests that the company actually can reduce the boiling repetition used from 5-6 times up to 1.

5.2. Suggestion

The validity of optimal boiling condition obtained in this research need to be proven by carrying out further experiments using the critical values obtained. In order to obtain a better model explaining the relationship of water ratio, boiling time, and boiling repetition to quality of *nata de coco*, the number of the center point should be increased to 6 for uniform precision or 9 for orthogonal designs.