CHAPTER V
CONCLUSION AND RECOMMENDATION

V.1 Conclusions

From the result of biodiesel production from chicken fat with combination subcritical methanol and water process, it can be concluded that:

1. ANOVA result shows the temperature and molar ratio gave significant influence to FAME or biodiesel yield which give P-Value below 0.05
2. Optimum condition obtained from Response Surface Methodology are temperature 160.4^{o}C and molar ratio 1:81.6 with theoretical FAME yield up to 106.23%
3. FAME component at optimum condition are Tridecanoic Acid Methyl Ester (C13:0), Myristoleic Acid Methyl Ester (C14:1), cis-10-Pentadecenoic Acid Methyl Ester (C15:1), Linoleic Acid Methyl Ester (C18:2n6c), Linolelaidic Acid Methyl Ester (C18:2n6t), cis-11-Eicosenoic Acid Methyl Ester (C20:1n9), Erucic Acid Methyl Ester (C22:1n9), Lignoceric Acid Methyl Ester (C24:0), cis-4,7,10,13,16,19-Docosahexaenoic Acid Methyl Ester (C22:6n3), and Nervonic Acid Methyl Ester (C24:1n9).

V.2 Recommendations

In the subcritical method, both variable temperature and molar ratio affect the time process in the transesterification process which is a reversible reaction. In the future, researchers hope that the effect of processing time can be studied and the technology can be applied on industrial scale so that, can reduce the use of fossil fuels.

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