APPENDIX C

SAMPLE CALCULATION OF SOME PARAMETERS

C.1 Calculation of Moisture Loss

Moisture loss was calculated according to Eq.(3.19). For treatment at m = 0.5 kg, power level = medium high, irradiation time = 16 minutes, and weight of initial bunch fruit = 0.5 kg. The weight of oil palm bunch after microwave irradiation = 0.33 kg. Moisture loss was calculated as follow:

$$\%\ Moisture\ Loss = \left[\frac{M1-M2}{M1}\right] x\ 100\%$$

$$\%\ Moisture\ Loss = \left[\frac{0.5-0.33}{0.5}\right] x\ 100\%$$

$$\%\ Moisture\ Loss = 34\%$$

C.2. Calculation of Stripping Efficiency

Stripping efficiency was calculated according to Eq.(3.21). For treatment at m = 0.5 kg, power level = medium high, irradiation time = 16 minutes, and number of single fruit in the bunch = 50. The study obtained number of fruit remained in the bunch after microwave irradiation = 10. Stripping efficiency was calculated as follow:

$$\%\ Stripping\ efficiency = \left[\frac{N1 - N2}{N1}\right] x\ 100\%$$

$$\%\ Stripping\ efficiency = \left[\frac{50 - 10}{50}\right] x\ 100\%$$

$$\%\ Strippability = 80\%$$

C.3 Calculation of FFA

FFA was determined according to Eq.(3.22). For treatment at m = 0.5 kg, power level = medium high, irradiation time = 16 minutes, weight of sample palm oil = 2.62 g, and volume of NaOH = 0.4 ml. FFA was calculated as follow:

$$FFA(\%) = \frac{V(ml) x\ 25.6\ x\ 0.1M\ (NaOH)}{W\ (g)}$$

$$FFA(\%) = \frac{0.4x\ 25.6\ x\ 0.1}{2.62}$$

$$FFA(\%) = 0.39\%$$

C.4 Calculation of Lipase Activity

Lipase activity was determined according to Eq.(3.20). For treatment at m = 0.5 kg, power level = medium high, irradiation time = 16 minutes. Volume of NaOH after sample titration = 0.25 ml, while volume NaOH after blank titration = 0.1 ml. The lipase activity hydrolyzed palm oil sample for about for 45 minutes was calculated as follow:

$$Lipase\ activity = \frac{(A-B)x(N)x1000}{t}$$

$$Lipase\ activity = \frac{(0.25-0.1)x(0.1)x1000}{45}$$

$$Lipase\ activity = 0.333 \text{ U/ml}$$