# APPENDIX

## 1. Analisa Bahan baku

### a. Analisa Kadar Air Biji Wijen

$$Kadar\ Air = \frac{W_0 - W_1}{W_0}\ x\ 100\ \%$$

$$Kadar\ Air = \frac{50{,}0108\ gram - 47{,}6678\ gram}{50{,}0108\ gram}\ x\ 100\ \%$$

$$Kadar\ Air = 4{,}685\%$$

### b. Analisa Kadar Abu Biji Wijen

$$Kadar\ Abu = \frac{Berat\ Abu}{Berat\ Sampel}\ x\ 100\ \%$$

$$Kadar\ Abu = \frac{0{,}2512\ gram}{8{,}0882\ gram}\ x\ 100\ \%$$

$$Kadar\ Abu = 3{,}106\%$$

## 2. Perhitungan Optimasi Bilangan Camp

### a. Perhitungan Bilangan Reynold (NRe)

$$NRe = \frac{D_i^2\ n\ \rho}{\mu}$$

$$NRe = \frac{6cm^2 \text{ x } 1{,}6667 \text{ rps x } 0{,}679 \text{ gr}/cm^3}{0{,}00369\ gr/cm.s}$$

NRe = 11046,34

Jadi dapat disimpulkan bahwa aliran tersebut adalah turbulen

### b. Perhitungan daya yang dibutuhkan (P)

Dikarenakan aliran turbulen maka persamaan rushton aliran turbulen :

$$P = K_T\ n^3\ D_i^5\ \rho$$

$$P = 2{,}75\ x\ 1{,}6667\ rps^3\ x\ 6\ cm^5\ x\ 0{,}679\ \text{gr}/cm^3$$

$$P = 67225{,}03\ gr.cm^2/s^3$$

### c. Perhitungan Gradien kecepatan (G)

$$G = \sqrt{\frac{P}{\mu.V}}$$

$$G = \sqrt{\frac{67225{,}03\ gr.cm^2/s^3}{0{,}00369\ gr/cm.s\ x\ 400\ cm^3}}$$

G = 22385,35 1/s

**d. Perhitungan bilangan CAMP (CAMP)**

CAMP = G x td

CAMP = 22385,35 1/s x 1200 s

CAMP = 256160

**3. Analisa Kualitas Minyak wijen**

**a. Berat Jenis**

$$Berat\ Jenis = \frac{Wm - Wp}{Vp}$$

$$Berat\ Jenis = \frac{20{,}47\ gram - 11{,}56\ gram}{10\ ml}$$

$Berat\ Jenis =$ 0,891 gr/ml

**b. Yield (%)**

$$Yield\ (\%) = \frac{Total\ Berat\ Minyak}{berat\ bahan\ awal}\ x\ 100\%$$

$$Yield\ (\%) = \frac{29{,}22\ gram}{80\ gram}\ x\ 100\%$$

Yield (%) = 36,52 %

**c. Viskositas ($\mu$)**

$$\mu = \mu_0\ \frac{t.\rho}{t_0.\rho_0}$$

$$\mu = 0{,}00899\ g/cm.s\ \frac{1{,}82\ s\ x\ 0{,}913\ gr/ml}{0{,}44\ s\ x\ 0{,}978\ gr/cm^3}$$

$\mu =$ 0,03471 $g/cm.s$