LAMPIRAN

Lampiran 1. Tabel Hasil Pengamatan

Tabel 6. Tabel hasil analisa warna minyak biji mahoni

Variabel	Suhu (C^o)	Warna
1	35	Kuning Gelap
2	35	Kuning Gelap
3	35	Kuning Gelap
4	45	Kuning Gelap
5	45	Kuning Gelap
6	45	Kuning Gelap
7	55	Kuning Kecoklatan
8	55	Kuning Kecoklatan
9	55	Kuning Kecoklatan

Tabel 7. Analisa sifat fisik minyak biji mahoni

Variabel	Variabel Berubah		Rendemen (%)	Kadar Air (%)	Densitas (gr/ml)	Viskositas (cp)
	Suhu Pemanasan Awal (˚C)	Tekanan (kg/cm^2)				
1	35	125	16.2875	3,0	0,924	32,705
2	35	150	18.485	2,6	0,919	32,345
3	35	175	23.585	2,9	0,913	32,065
4	45	125	17.54	2,9	0,905	30,650

5	45	150	19.82	2,5	0,902	30,481
6	45	175	24.0275	2,5	0,902	30,41
7	55	125	21.0575	2,4	0,9	30,346
8	55	150	23.4325	2,4	0,897	30,140
9	55	175	25.4375	2,3	0,897	30,102

Tabel 8. Analisa sifat kimia minyak biji mahoni

Variabel	Variabel Berubah		Angka Asam (mg KOH/g)	Angka Penyabunan (mg KOH/g)
	Suhu Pemanasan Awal (^oC)	Tekanan (kg/cm^2)		
1	35	125	6,436	151,871
2	35	150	6,714	150,780
3	35	175	7,496	148,084
4	45	125	7,315	147,534
5	45	150	7,712	148,024
6	45	175	7,961	145,537
7	55	125	7,480	143,99
8	55	150	7,880	144,471
9	55	175	8,005	144,471

Lampiran 2. Hasil Perhitungan

6.2.1 Persentase Rendemen

% Rendemen = $\frac{massa\ minyak\ yang\ terekstrak\ (gr)}{massa\ sampel\ (gr)}$ x 100 %

Variabel 1 = $\frac{65{,}15\ gr}{400\ gr}\ x\ 100\ \% = 16{,}2875\ \%$

Variabel 2 = $\frac{73{,}94\ gr}{400\ gr}\ x\ 100\ \% = 18{,}485\ \%$

Variabel 3 = $\frac{94{,}34\ gr}{400\ gr}\ x\ 100\ \% = 23{,}585\ \%$

Variabel 4 = $\frac{70{,}16\ gr}{400\ gr}\ x\ 100\ \% = 17{,}54\ \%$

Variabel 5 = $\frac{79{,}28\ gr}{400\ gr}\ x\ 100\ \% = 19{,}82\ \%$

Variabel 6 = $\frac{96{,}11\ gr}{400\ gr}\ x\ 100\ \% = 24{,}0275\ \%$

Variabel 7 = $\frac{84{,}23\ gr}{400\ gr}\ x\ 100\ \% = 21{,}0575\ \%$

Variabel 8 = $\frac{93{,}73\ gr}{400\ gr}\ x\ 100\ \% = 23{,}4325\ \%$

Variabel 9 = $\frac{101{,}75\ gr}{400\ gr}\ x\ 100\ \% = 25{,}4375\ \%$

6.2.2 Kadar Air Minyak Biji mahoni

$\%\ Kadar\ air =$

$\frac{(masa\ cawan + sampel\ sebelum\ dipanaskan) - (masa\ cawan + sampel\ setelah\ dipanaskan)gr}{massa\ sampel\ (gr)}$ x

100%

Variabel 1 = $\frac{(35{,}79 - 35{,}52\ )gr}{9{,}1\ gr}$ x 100% = 3,00 %

Variabel 2 = $\frac{(43{,}62\ -43{,}36)gr}{10{,}1\ gr}$ x 100% = 2,6 %

Variabel 3 = $\frac{(47{,}63\ -47{,}35\ )gr}{9{,}7\ \ gr}$ x 100% = 2,9 %

Variabel 4 = $\frac{(37{,}15-36{,}91\ )gr}{8{,}3\ gr}\ x\ 100\% =$ 2,9 %

Variabel 5 = $\frac{(35{,}69-35{,}47\ )gr}{8{,}6\ gr} x\ 100\% =$ 2,5 %

Variabel 6 = $\frac{(37{,}35-37{,}05\ )gr}{1{,}2\ \ gr} x\ 100\%\ =$ 2,5 %

Variabel 7 = $\frac{(37{,}42-37{,}21\ )gr}{8{,}7\ \ gr} X\ 100\%\ =$ 2,4 %

Variabel 8 = $\frac{(37{,}35-37{,}13)gr}{9{,}3\ \ gr} x\ 100\% =$ 2,4 %

Variabel 9 = $\frac{(36{,}03-35{,}81\ )gr}{9{,}7\ gr} x\ 100\% =$ 2,3 %

6.2.3 Densitas Minyak Biji mahoni

$$\rho = \frac{(massa\ pikno\ isi\ minyak - massa\ pikno\ kosong)gr}{volume\ pikno\ yang\ digunakan\ (ml)}$$

Variabel 1 = $\frac{(19{,}16-9{,}92)gr}{10\ ml}$ = 0,924 gr/ml

Variabel 2 = $\frac{(19{,}11-9{,}92)gr}{10\ ml}$ = 0,919 gr/ml

Variabel 3 = $\frac{(19{,}05-9{,}92)gr}{10\ ml}$ = 0,913 gr/ml

Variabel 4 = $\frac{(18{,}97-9{,}92)gr}{10\ ml}$ = 0,905gr/ml

Variabel 5 = $\frac{(18{,}94-9{,}92)gr}{10\ ml}$ = 0,902 gr/ml

Variabel 6 = $\frac{(18{,}94-9{,}92)gr}{10\ ml}$ = 0,902 gr/ml

Variabel 7 = $\frac{(18{,}92-9{,}92)gr}{10\ ml}$ = 0,900 gr/ml

Variabel 8 = $\frac{(18{,}89-9{,}92)gr}{10\ ml}$ = 0,897 gr/ml

Variabel 9 = $\frac{(18{,}89 - 9{,}92)gr}{10\ ml}$ = 0,897 gr/ml

6.2.3 Viskositas Minyak Biji mahoni

$$i_x = \frac{t_x d_x}{t_0 d_0} . i_0$$

Variabel 1 = $\frac{42{,}39\ s\ x\ 0{,}924\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 32,705 Cp

Variabel 2 = $\frac{42{,}15\ s\ x\ 0{,}919\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 32,345 Cp

Variabel 3 = $\frac{42{,}06\ s\ x\ 0{,}913\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 32,065 Cp

Variabel 4 = $\frac{40{,}56\ s\ x\ 0{,}905\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 30,650 Cp

Variabel 5 = $\frac{40{,}47\ s\ x\ 0{,}902\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 30,481 Cp

Variabel 6 = $\frac{40{,}38\ s\ x\ 0{,}902\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 30,410 Cp

Variabel 7 = $\frac{40{,}38\ s\ x\ 0{,}9\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 30,346 Cp

Variabel 8 = $\frac{40{,}24\ s\ x\ 0{,}897\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 30,140 Cp

Variabel 9 = $\frac{40{,}19\ s\ x\ 0{,}897\ gr/ml}{1{,}2\ s\ x\ 0{,}998\ gr/ml} . 1{,}004\ cP$ = 30,102 Cp

6.2.4 Angka Asam Minyak biji mahoni

Angka asam = $\frac{56{,}1\ x\ ml\ KOH\ yang\ dibutuhkan\ x\ normalitas\ KOH}{massa\ sampel\ (gr)}$

Variabel 1 = $\frac{56{,}1\ x\ 5{,}3\ ml\ x\ 0{,}1\ N}{4{,}562\ gr}$ = 6,436 mg KOH/g

Variabel 2 = $\frac{56{,}1\ x\ 5{,}5\ ml\ x\ 0{,}1\ N}{4{,}595\ gr}$ = 6,714 mg KOH/g

Variabel 3 = $\frac{56{,}1\ x\ 6{,}1\ ml\ x\ 0{,}1\ N}{4{,}656\ gr}$ = 7,496 mg KOH/g

Variabel 4 = $\frac{56{,}1\ x\ 5{,}9\ ml\ x\ 0{,}1\ N}{4{,}525\ gr}$ = 7,315 mg KOH/g

Variabel 5 = $\frac{56{,}1\ x\ 6{,}2\ ml\ x\ 0{,}1\ N}{4{,}51\ gr}$ = 7,712 mg KOH/g

Variabel 6 = $\frac{56{,}1\ x\ 6{,}4\ ml\ x\ 0{,}1\ N}{4{,}51\ gr}$ = 7,961 mg KOH/g

Variabel 7 = $\frac{56{,}1\ \ x\ 6{,}0\ ml\ x\ 0{,}1\ N}{4{,}5\ gr}$ = 7,480 mg KOH/g

Variabel 8 = $\frac{56{,}1\ x\ 6{,}3\ ml\ x\ 0{,}1\ N}{4{,}485\ gr}$ = 7,880 mg KOH/g

Variabel 9 = $\frac{56{,}1\ x\ 6{,}4\ ml\ x\ 0{,}1\ N}{4{,}485\ gr}$ = 8,005 mg KOH/g

6.2.5 Angka Penyabunan Minyak Biji Mahoni

Angka Penyabunan = $28{,}05\ x\ \frac{(titrasi\ blanko - titrasi\ sampel)ml}{massa\ sampel\ (gr)}$

Variabel 1 = $28{,}05\ x\ \frac{(29-4{,}3)ml}{4{,}562\ gr}$ = 151,871 mg KOH/g

Variabel 2 = $28{,}05\ x\ \frac{(29-4{,}3)ml}{4{,}595\ gr}$ = 150,780 mg KOH/g

Variabel 3 = $28{,}05\ x\ \frac{(29-4{,}9)ml}{4{,}565\ gr}$ = 148,084 mg KOH/g

Variabel 4 =$28{,}05\ x\ \frac{(29-5{,}2)ml}{4{,}525\ gr}$ = 147,534 mg KOH/g

Variabel 5 = $28{,}05\ x\ \frac{(29-5{,}2)ml}{4{,}51\ gr}$ = 148,024 mg KOH/g

Variabel 6 = $28{,}05\ x\ \frac{(29-5{,}6)ml}{4{,}51\ gr}$ = 145,537 mg KOH/g

Variabel 7 = $28{,}05\ x\ \frac{(29-5{,}9)ml}{4{,}5\ gr}$ = 143,99 mg KOH/g

Variabel 8 = $28{,}05\ x\ \frac{(29-5{,}9)ml}{4{,}485\ gr}$ = 144,471 mg KOH/g

Variabel 9 = 28,05 $x \frac{(29-5,9)ml}{4,485\ gr}$ = 144,471 mg KOH/g

Lampiran 3. Foto Praktikum

1. Foto Bahan

(a) (b)

Gambar 11. (a) Biji mahoni, (b) Biji mahoni setelah dioven

2. Foto Kegiatan Praktikum

Gambar 12. Pengambilan minyak

3. Foto Hasil Praktikum

35^{o}C, 125 kg/cm^{2}

35^{o}C, 150 kg/cm^{2}

35^{o}C, 175 kg/cm^{2}

45^{o}C, 125 kg/cm^{2}

45^{o}C, 150 kg/cm^{2}

45^{o}C, 175 kg/cm^{2}

55^{o}C, 125 kg/cm^{2}

55^{o}C, 150 kg/cm^{2}

55^{o}C, 175 kg/cm^{2}