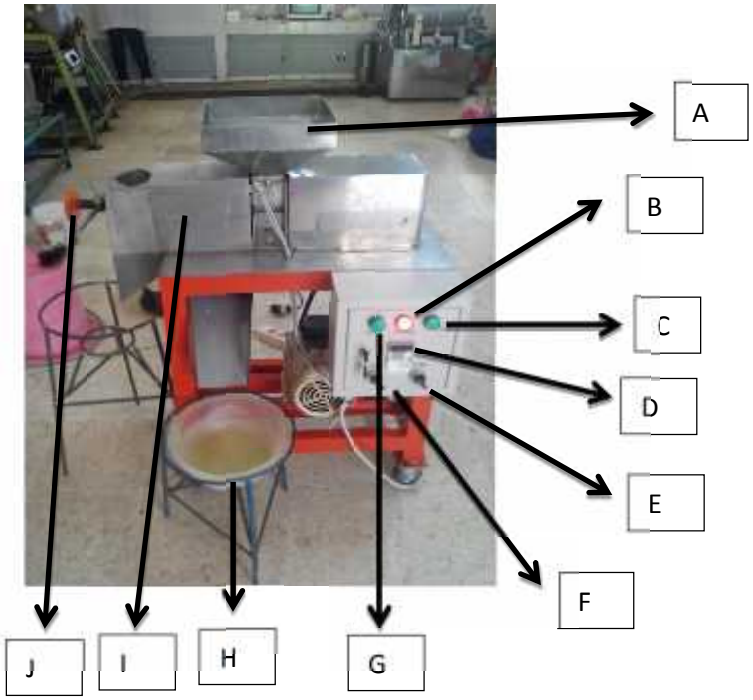
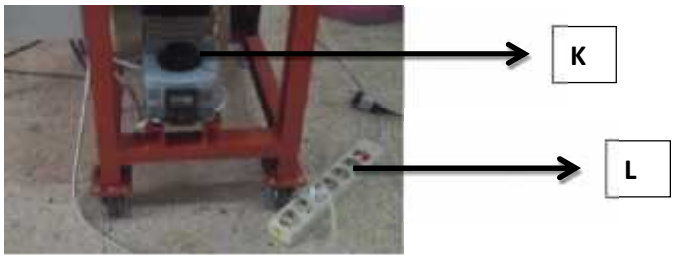
LAMPIRAN

Lampiran I. Spesifikasi dan Gambar Alat

Fungsi	:	Mengepres biji untuk mempreoleh minyak nabati
Material	:	Baja profil
Kapasitas	:	10 kg/jam
Motor		
Tipe	:	Elektro motor 1HP
Tegangan	:	220 volt
Dimensi Alat		
Panjang	:	600 mm
Lebar	:	400 mm
Tinggi	:	500 mm





Keterangan :

A = Hopper

B = Indikator On-Off

C = Indikator suhu

D = Pengatur Set Point

E = Knop Suhu

F = Knop rpm

G = Pengatur Set Point

H = Knop Suhu

I = Knop rpm

J = Pemutar Pangkal Ulir

K = Regulator

L = Stop Kontak

Lampiran II. Perhitungan

I. Rendemen

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

Variabel 1 = $\frac{7\ gr}{250\ gr} \times 100\% = 2{,}8\ \%$

Variabel 2 = $\frac{8\ gr}{250\ gr} \times 100\% = 3{,}2\ \%$

Variabel 3 = $\frac{11\ gr}{250\ gr} \times 100\% = 4{,}4\ \%$

Variabel 4 = $\frac{15\ gr}{250\ gr} \times 100\% = 6\%$

Variabel 5 = $\frac{12\ gr}{250\ gr} \times 100\% = 4{,}8\ \%$

Variabel 6 = $\frac{14gr}{250\ gr} \times 100\% = 5{,}6\ \%$

Variabel 7 = $\frac{19\ gr}{250\ gr} \times 100\% = 7{,}6\ \%$

Variabel 8 = $\frac{17\ gr}{250\ gr} \times 100\% = 6{,}8\ \%$

II. Kadar Air

$$\text{Rumus} = \frac{massa\ minyak\ awal\ (gr) - massa\ minyak\ setelah\ dipanaskan(gr)}{massa\ minyak\ awal\ (gr)}$$

Variabel 1 = $\frac{6{,}88 - 5{,}53\ gr}{6{,}88\ gr}$ x 100% = 19,47 %

Variabel 2 = $\frac{7{,}92\ gr - 6{,}3\ gr}{7{,}92\ gr}$ x 100% = 20,4 %

Variabel 3 = $\frac{9{,}6\ gr - 7{,}78\ gr}{9{,}6\ gr}$ x 100% = 18, 96 %

Variabel 4 = $\frac{11{,}02\ gr - 9{,}14\ gr}{11{,}02\ grr}$ x 100% = 17,5 %

Variabel 5 = $\frac{10{,}17\ gr - 8{,}2\ gr9}{10{,}17\ gr}$ x 100% = 18,49 %

Variabel 6 = $\frac{10{,}88\ gr - 8{,}93\ gr}{10{,}88\ gr}$ x 100% = 17,92 %

Variabel 7 = $\frac{14,65\ gr - 12,23\ gr}{14,65\ gr}$ x 100% = 16,52 %

Variabel 8 = $\frac{12,87 gr - 10,64\ gr}{12,87\ gr}$ x 100% = 17,33 %

III. Densitas

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

Variabel 3 = $\frac{(21,84-12,56)gr}{10\ ml} = 0,928\ ^{gr}/_{ml}$

Variabel 4 = $\frac{(21,83-12,56)gr}{10\ ml} = 0,927\ ^{gr}/_{ml}$

Variabel 5 = $\frac{(21,82-12,56)gr}{10\ ml} = 0,926\ ^{gr}/_{ml}$

Variabel 6 = $\frac{(21,83-12,56)gr}{10\ ml} = 0,927\ ^{gr}/_{ml}$

Variabel 7 = $\frac{(21,81-12,56)gr}{10\ ml} = 0,925\ ^{gr}/_{ml}$

Variabel 8 = $\frac{(21,81-12,56)gr}{10\ ml} = 0,925\ ^{gr}/_{ml}$

IV. Viskositas

$$\eta_x = \frac{t_x d_x}{t_0 d_0} \cdot \eta_0$$

Variabel 3 = $\frac{70\ s \times 0,928\ ^{gr}/_{ml}}{1,7\ s \times 0,998\ ^{gr}/_{ml}} \cdot 1,004\ cP$ = 38,44 cp

Variabel 4 = $\frac{76\ s \times 0,926\ ^{gr}/_{ml}}{1,7\ s \times 0,998\ ^{gr}/_{ml}} \cdot 1,004\ cP$ = 41,65 cp

Variabel 5 = $\frac{77\ s \times 0,927\ ^{gr}/_{ml}}{1,7\ s \times 0,998\ ^{gr}/_{ml}} \cdot 1,004\ cP$ = 42,24 cp

Variabel 6 = $\frac{73\ s \times 0,928\ ^{gr}/_{ml}}{1,7\ s \times 0,998\ ^{gr}/_{ml}} \cdot 1,004\ cP$ = 40,09 cp

Variabel 7 = $\frac{78\ s \times 0,927\ ^{gr}/_{ml}}{1,7\ s \times 0,998\ ^{gr}/_{ml}} \cdot 1,004\ cP$ = 42,78 cp

Variabel 8 = $\frac{81\ s \times 0{,}925\ ^{gr}/_{ml}}{1{,}7\ s \times 0{,}998\ ^{gr}/_{ml}} \cdot 1{,}004\ cP$ = 44,34 cp

V. Angka Asam

$$\text{Rumus} = \frac{56{,}1 \times ml\ KOH\ yang\ dibutuhkan \times normalitas\ KOH}{massa\ sampel\ (gr)}$$

Variabel 3 = $\frac{56{,}1 \times 32{,}6\ ml \times 0{,}1\ N}{5\ gr}$ x 100 % = 0,365

Variabel 4 = $\frac{56{,}1 \times 32{,}4\ ml \times 0{,}1\ N}{5\ gr}$ x 100 %= 0,363

Variabel 5 = $\frac{56{,}1 \times 30{,}7\ ml \times 0{,}1\ N}{5\ gr}$ x 100 % = 0,344

Variabel 6 = $\frac{56{,}1 \times 31{,}8\ ml \times 0{,}1\ N}{5\ gr}$ x 100 % = 0,356

Variabel 7 = $\frac{56{,}1 \times 28{,}9\ ml \times 0{,}1\ N}{5\ gr}$ x 100 % = 0,324

Variabel 8 = $\frac{56{,}1 \times 29{,}3\ ml \times 0{,}1\ N}{5\ gr}$ x 100 % = 0,328

VI. Angka Penyabunan

$$\text{Rumus} = \frac{(titrasi\ blanko - titrasi\ sampel)ml \times N\ HCl\ X\ 56{,}1}{massa\ sampel\ (gr)}$$

Variabel 4 = $\frac{(50-19{,}4)\ ml\ X\ 0{,}5\ N\ X\ 56{,}1}{5\ gr}$ = 171,66

Variabel 6 = $\frac{(50-18{,}7)\ ml\ X\ 0{,}5\ N\ X\ 56{,}1}{5\ gr}$ = 175,59

Variabel 7 = $\frac{(50-16{,}3)\ ml\ X\ 0{,}5\ N\ X\ 56{,}1}{5\ gr}$ = 189,06

Variabel 8 = $\frac{(50-17{,}8)\ ml\ X\ 0{,}5\ N\ X\ 56{,}1}{5\ gr}$ = 180,64

Lampiran III. Hasil Percobaan

Run 1

Run 2

Run 3

Run 4

Run 5

Run 6

Run 7

Run 8