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LAMPIRAN

Lampiran 1 Rumus Pembuatan Reagen

1. Larutan Natrium Tiosulfat ($Na_2S_2O_3$) 0,1 N sebanyak 1 L

   Diketahui:

   Normalitas $Na_2S_2O_3$ = 0,1 N (grek/L)

   Volume $Na_2S_2O_3$ = 1 L

   $$\text{BE} = \frac{BM\ (\frac{gram}{mol})}{a(grek)}\ \frac{248(\frac{gram}{mol})}{1(grek)} = 248\ \left(\frac{gram}{grek}\right)$$

   Perhitungan

   Berat $Na_2S_2O_3$ (gram) $N = \frac{gram}{\text{BE} \times \text{L}}$

   $$0{,}1\ \text{N} = \frac{gram}{248\left(\frac{gram}{grek}\right) \times 1\text{L}}$$

   $$gr = \frac{0{,}1N}{248\left(\frac{gram}{grek}\right) \times 1\text{L}}$$

   = 24,8 gram

   Jadi, $Na_2S_2O_3$ yang akan digunakan 24,8 gram.

2. Larutan KIO_3 0,1 N sebanyak 100

   Diketahui:

   Normalitas KIO_3 = 0,1 N (grek/L)

   Volume KIO_3 = 100 mL = 0,1 L

   $$\text{BE} = \frac{BM\ (\frac{gram}{mol})}{a(grek)} = \frac{214(\frac{gram}{mol})}{6(grek)} = 35{,}7\ \left(\frac{gram}{grek}\right)$$

   Perhitungan :

   Berat KIO_3 $\text{N} = \frac{gram}{BE \times L}$

   $$0{,}1\text{N} = \frac{gram}{35{,}7\left(\frac{gram}{grek}\right) \times 0{,}1L}$$

   $$\text{gram} = \frac{0{,}1N}{35{,}7\left(\frac{gram}{grek}\right) \times 0{,}1L}$$

   Berat KIO_3 = 0,357 gram

Jadi, larutan KIO_3 yang dibutuhkan sebanyak 0,357 gram.

3. Larutan KI 10% sebanyak 100 mL

   Diketahui:

   %KI = 10% b/v

   Volume KI = 100 mL

   Perhitungan

   W = % *x V*

   0,1 (gr/mL) x 100 mL

   = 10 gram

   Jadi, serbuk KI yang digunakan sebanyak 10 gram serbuk KI dalam 100mL aquadest.

4. Larutan amilum 1% sebanyak 100 mL

   Diketahui :

   %amilum = 1% b/v

   Volume amilum = 100 mL Perhitungan

   W = % x V

   = 0,01 (gram/mL) × 100 mL

   = 1 gram

   Jadi, serbuk amilum 1% yang digunakan sebanyak 1 gram serbuk amilum dalam 100 mL aquadest.

5. Larutan Indikator pp 1% sebanyak 100 mL

   Diketahui :

   %fenolftalein = 1%b/v

   Volume = 100 mL

   Perhitungan

   W = % *x V*

   0,01 × 100 mL

   = 1gr

Jadi, serbuk fenolftalein yang akan digunakan sebanyak 1gram serbuk fenolftalein dalam 100 Ml etanol 95%.

6. Larutan KOH 0,1 N sebanyak 500mL

   Diketahui:

   Normalitas KOH = 0,1 N

   Volume = 500 mL = 0,5 L

   BE $= \frac{BM\ (\frac{gram}{mol})}{a(grek)} = \frac{248\ (\frac{gram}{mol})}{1\ (grek)} = 56{,}1$

   Perhitungan

Berat KOH (gram) $= N = \frac{gram}{BE\ X\ L}$

$0.1N = \frac{gram}{56{,}1\ X\ 0{,}5}$

$= 2{,}805$ gram

Jadi, KOH yang akan digunakan sebanyak 2,805 gram.

Lampiran 2 Cara Pembuatan Reagen

1. Larutan Tiosulfat 0,1 N sebanyak 1 L
    a. Ditimbang 24,8gram $Na_2S_2O_3.5H_2O$ dengan menggunakan neraca elektrik, kemudian dipindah dalam beaker glass.
    b. Ditambahkan aquadest secukupnya.
    c. Diaduk perlahan menggunakan batang pengaduk hingga larut.
    d. Setelah larut, dimasukan kedalam labu ukur 1000 mL.
    e. Kemudian ditambahkan aquadest sampai tanda batas yaitu 1000 mL.
    f. Homogenkan, kemudian dipindahkan kedalam botol reagen dan ditutup rapat serta beri label.
2. Larutan KIO_3 sebanyak 100 mL
    a. Kristal KIO_3 ditimbang menggunakan neraca elektrik sebanyak 0,357 gram lalu dimasukan kedalam beaker glass.
    b. Ditambahkan aquadest secukupnya.
    c. Diaduk menggunakan batang pengaduk hingga larut.
    d. Seteah larut, dimasukan kedalam labu ukur 100 mL.
    e. Kemudian ditambahkan aquadest sampai tanda batas yaitu 100 mL.
    f. Homogenkan, lalu dipindahkan kedalam botol reagen yang telah diberi label dan ditutup rapat.
3. Larutan KI 10% sebanyak 10 mL
    a. KI 10% ditimbang menggunakan neraca elektrik sebanyak 10 gram dan dimasukan kedalam beaker glass.
    b. Ditambahkan aquadest secuukupnya.
    c. Diaduk menggunakan batang pengaduk hingga larut.
    d. Setelah larut, dimasukan kedalam labu ukur 100 mL

e. Kemudian ditambahkan aquadest sampai tanda batas yaitu 100 mL.

f. Homogenkan, lalu dipindahkan kedalam botol reagen yang telah diberi label dan ditutup rapat.

4. Larutan amilum 1% sebanyak 100 mL

   a. Serbuk amilum ditimbang menggunakan neraca elektrik sebanyak 1 gram dan masukan kedalam beaker glass.

   b. Ditambahkan aquadest secukupnya.

   c. Diaduk menggunakan batang pengaduk hingga larut.

   d. Dipanaskan sampai amilum larut sempurna.

   e. Setelah larut, dimasukan kedalam labu ukur 100 mL.

   f. Kemudian ditambahkan aquadest sampai tanda batas yaitu 100 mL.

   g. Homoogenkan, lalu dipindahkan kedalam botol reagen yang telah diberi label dan ditutup rapat.

5. Larutan indikator pp 1% sebanyak 100 mL

   a. Serbuk fenolftalein ditimbang menggunakan neraca elektrik sebanyak 1 gram dan dimasukan kedalam beaker glass.

   b. Ditambahkan alkohol (etanol) 95% sebanyak 50 mL.

   c. Diaduk hingga homogen.

   d. Kemudian tambahkan aquadest sampai batas 100 mL.

   e. Dipindahkan kedalam botol reagen yang telah diberi label dan ditutup rapat.

   f. Larutan KOH 0,1 N sebanyak 500 mL

   g. KOH ditimbang menggunakan neraca elektrik sebanyak 2,805 gram dan dimasukan kedalam beaker glass.

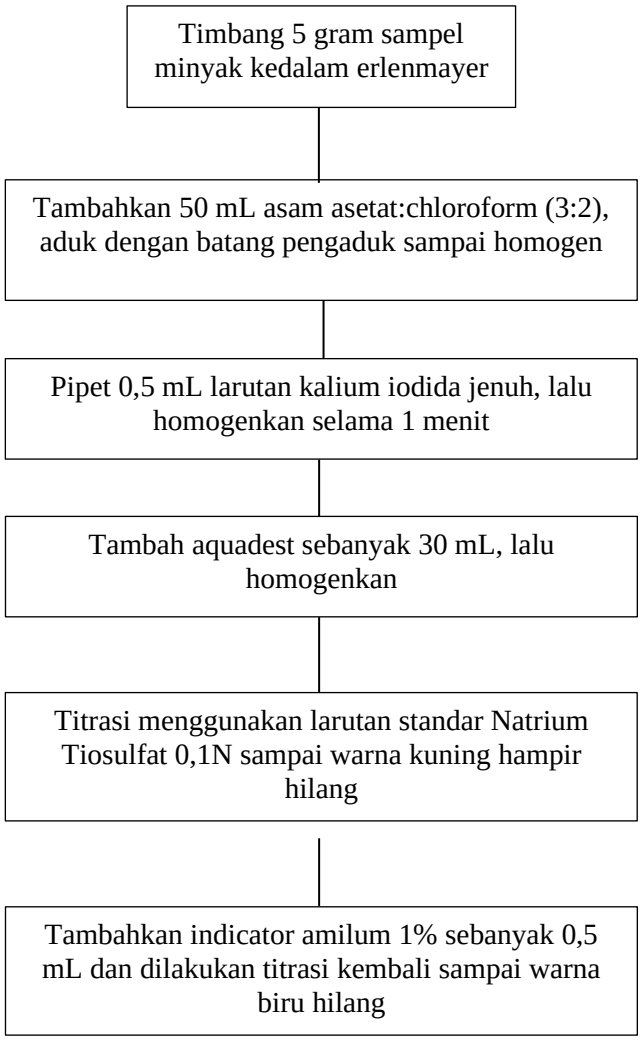
   h. Ditambahkan aquadest secukupnya dan diaduk sampai larut.

   i. Kemudian ditambahkan sampai tanda batas yaitu 100 mL.

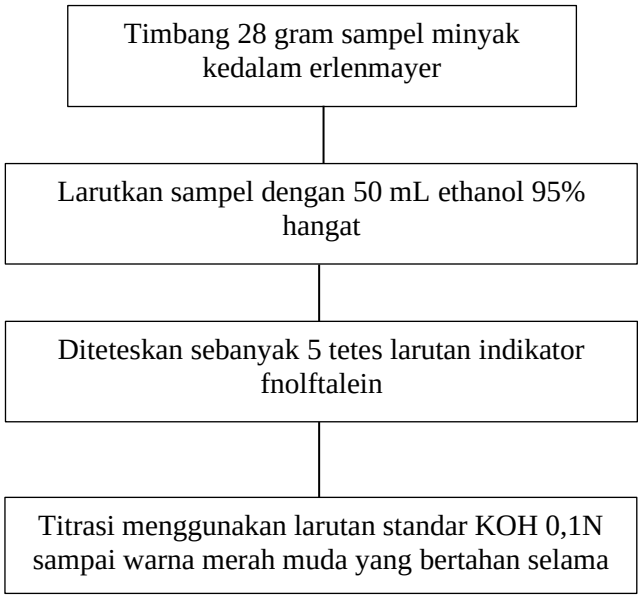
   j. Lalu dipindahkan kedalam botol reagen yang telah diberi label dan ditutup rapat.

Lampiran 3 Skema Kerja

1. Bilangan Peroksida



2. Bilangan Asam Lemak Bebas



Lampiran 4 Perhitungan

1. Perhitungan Standarisasi

a. Standarisasi Bilangan Peroksida

V_1 (mL) × N_1 (grek/L) = V_2 (mL) × N_2 (grek/L)

10 (mL) × 0,1 (grek/L) = 10,6 (mL) × N_2 (grek/L)

$$N_2 \text{ (grek/L)} = \frac{10\ (\cancel{mL}) \times 0{,}1N\left(\frac{grek}{L}\right)}{10{,}6\ (\cancel{mL})}$$

= 0,0943 N (grek/L)

b. Standarisasi Bilangan Asam Lemak Bebas

V_1 (mL) × N_1 (grek/L) = V_2 (mL) × N_2 (grek/L)

10 (mL) × 0,1 (grek/L) = 10,10 (mL) × N_2 (grek/L)

$$N_2 \text{ (grek/L)} = \frac{10\ (\cancel{mL}) \times 0{,}1N\left(\frac{grek}{L}\right)}{10{,}10\ (\cancel{mL})}$$

= 0,0990 N (grek/L)

2. Perhitungan Bilangan Peroksida

a. Sampel A

1) Pengulangan 1x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\ (mL) - V1\ (mL)\,)}{w\ (gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}89\ (mL) - 0\ (mL)\,)}{5\ (gram)}$$

= 16,758 mek/kg

2) Pengulangan 2x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\ (mL) - V1\ (mL)\,)}{w\ (gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}90\ (mL) - 0\ (mL)\,)}{5\ (gram)}$$

= 16,974 mek/kg

3) Pengulangan 3x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\ (mL) - V1\ (mL)\,)}{w\ (gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}89\ (mL) - 0\ (mL)\,)}{5\ (gram)}$$

= 16,758 mek/kg

b) Sampel B

1) Pengulangan 1x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}95\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

$$= 17{,}917 \text{ mek/kg}$$

2) Pengulangan 2x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}95\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

$$= 18{,}105 \text{ mek/kg}$$

3) Pengulangan 3x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}92\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

$$= 17{,}351 \text{ mek/kg}$$

b) Sampel C

1) Pengulangan 1x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}85\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

$$= 16{,}031 \text{ mek/kg}$$

2) Pengulangan 2x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}88\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

$$= 16{,}596 \text{ mek/kg}$$

3) Pengulangan 3x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}90\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 16,974 mek/kg

c) Sampel D

1) Pengulangan 1x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}87\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 16,408 mek/kg

2) Pengulangan 2x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}88\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

=16,596 mek/kg

3) Pengulangan 3x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}90\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 16,974 mek/kg

d) Sampel E

1) Pengulangan 1x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,1{,}0\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 18,86 mek/kg

2) Pengulangan 2x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}98\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

=18,482 mek/kg

3) Pengulangan 3x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,0{,}99\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 18,482 mek/kg

e) Sampel F

1) Pengulangan 1x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,1{,}1\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 20,746 mek/kg

2) Pengulangan 2x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,1{,}0\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

=18,86 mek/kg

3) Pengulangan 3x

$$\text{(mek O2/kg)} = \frac{1000\left(\frac{g}{kg}\right) \times N\left(\frac{mek}{mL}\right) \times (\,V0\,(mL) - V1\,(mL)\,)}{w\,(gram)}$$

$$= \frac{1000\left(\frac{g}{kg}\right) \times 0{,}0943\ N\left(\frac{mek}{mL}\right) \times (\,1{,}1\,(mL) - 0\,(mL)\,)}{5\,(gram)}$$

= 20,746 mek/kg

2. Perhitungan Bilangan Asam Lemak Bebas

a. Sampel A

1) Pengulangan 1x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 4{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}380\%$$

2) Pengulangan 2x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 4{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}326\%$$

3) Pengulangan 3x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 4{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}389\%$$

b. Sampel B

1) Pengulangan 1x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\ \left(\frac{g}{grek}\right) \times\ 5{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\ \left(\frac{g}{grek}\right) \times\ 5{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\ \left(\frac{g}{grek}\right) \times\ 5{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}470\%$$

2) Pengulangan 2x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\ \left(\frac{g}{grek}\right) \times\ 5{,}5\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\ \left(\frac{g}{grek}\right) \times 5{,}5\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\ \left(\frac{g}{grek}\right) \times\ 5{,}5(\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}497\%$$

3) Pengulangan 3x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\ \left(\frac{g}{grek}\right) \times\ 5{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\ \left(\frac{g}{grek}\right) \times\ 5{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\ \left(\frac{g}{grek}\right) \times\ 5{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}479\%$$

c. Sampel C

1) Pengulangan 1x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}6\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}6\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 6{,}6\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}597\%$$

2) Pengulangan 2x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}4\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}4\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 6{,}4\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}579\%$$

3) Pengulangan 3x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}7\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}7\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 6{,}7\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}606\%$$

d. Sampel D

1) Pengulangan 1x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 5{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 5{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 5{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}452\%$$

2) Pengulangan 2x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 5{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 5{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 5{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}470\%$$

3) Pengulangan 3x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 5{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 5{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 5{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}479\%$$

e. Sampel E

1) Pengulangan 1x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 6{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}543\%$$

2) Pengulangan 2x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}1\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}1\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 6{,}1\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}552\%$$

3) Pengulangan 3x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 6{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 6{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}570\%$$

f. Sampel F

1) Pengulangan 1x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 4{,}2\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}380\%$$

2) Pengulangan 2x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 4{,}0\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

$$= 0{,}326\%$$

3) Pengulangan 3x

$$\text{ALB} = \frac{BM\ asam\ plamitat\left(\frac{g}{grek}\right) \times V(\ mL) \times N\left(\frac{grek}{mL}\right)}{w\ (gram) \times 1000} \times 100\%$$

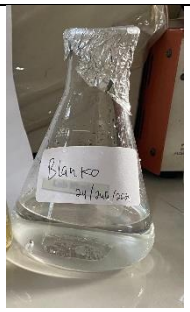
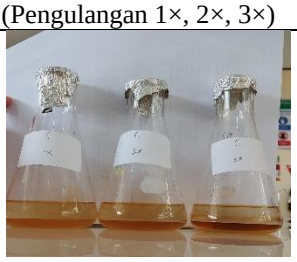
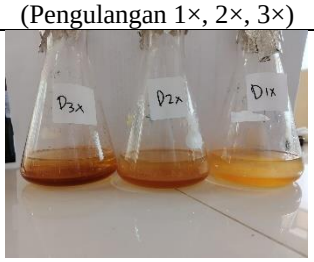
$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 1000} \times 100\%$$

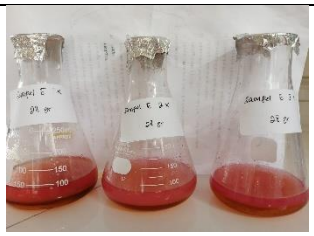
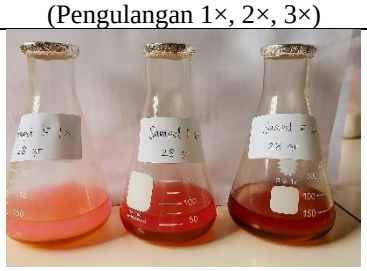
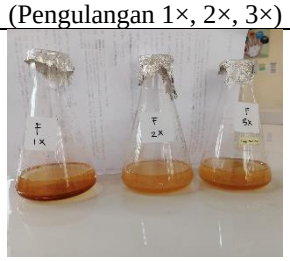
$$= \frac{256\left(\frac{g}{grek}\right) \times\ 4{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram) \times 10}$$

$$= \frac{25{,}6\left(\frac{g}{grek}\right) \times\ 4{,}3\ (\ mL) \times 0{,}0990\ \ N\left(\frac{grek}{mL}\right)}{28\ (gram)}$$

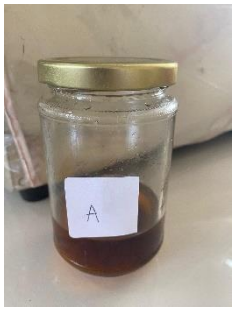
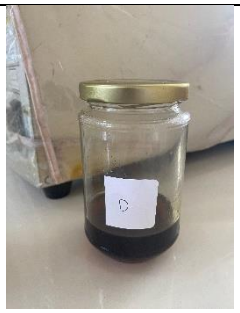
$$= 0{,}389\%$$

Lampiran 5 Dokumentasi Penelitian

KODE SAMPEL	Bilangan Asam Lemak Bebas	Bilangan Peroksida
Blanko	 Blanko bilangan Asam lemak bebas	 Blanko bilangan peroksida
A	 Sampel A Bilangan Asam Lemak Bebas (Pengulangan 1×, 2×, 3×)	 Sampel A Bilangan Peroksida (Pengulangan 1×, 2×, 3×)
B	 Sampel B Bilangan Asam Lemak Bebas (Pengulangan 1×, 2×, 3×)	 Sampel B Bilangan Peroksida (Pengulangan 1×, 2×, 3×)
C	 Sampel C Bilangan Asam Lemak Bebas (Pengulangan 1×, 2×, 3×)	 Sampel C Bilangan Peroksida (Pengulangan 1×, 2×, 3×)
D	 Sampel D Bilangan Asam Lemak Bebas (Pengulangan 1×, 2×, 3×)	 Sampel D Bilangan Peroksida (Pengulangan 1×, 2×, 3×)

E	 Sampel E Bilangan Asam Lemak Bebas (Pengulangan 1×, 2×, 3×)	 Sampel E Bilangan Peroksida (Pengulangan 1×, 2×, 3×)
F	 Sampel F Bilangan Asam Lemak Bebas (Pengulangan 1×, 2×, 3×)	 Sampel F Bilangan Peroksida (Pengulangan 1×, 2×, 3×)

Dokumentasi Cara Kerja

 Pembelian sampel A	 Pembelian sampel B	 Pembelian sampel C	 Pembelian sampel D
 Pembelian sampel E	 Pembelian sampel F	 Sampel A	 Sampel B
 Sampel C	 Sampel D	 Sampel E	 Sampel F

 Minyak sebelum dipakai	 Penimbangan reagen	 Pembuatan reagen	 Reagen yang siap digunakan

Bilangan Peroksida				
 Menimbang sampel minyak sebanyak 5 gram	 Menambahkan 50mL campuran asam asetat:Kloroform (3:2)	 Memipet 0,5mL KI jenuh homogenkan ±1 menit, lalu tambahkan aquadest sebanyak 30 mL	 Melakukan titrasi menggunakan Natrium Tiosulfat 0,1N sampai warna kuning hampir hilang	 Meambahkan indicator amilum 1% sebanyak 0,5mL dan melakukan titrasi kembali hingga mendapatkan warna biru hilang

Bilangan Asam Lemak Bebas			
 Menimbang sampel 28 gram	 Melarutkan sampel dengan 50 mL ethanol 95% hangat	 Menambahkan 5 tetes indikator fnolftalein	 Mentitrasi dengan KOH 0,1N hingga terbentuk warna merah muda yang bertahan selama 30 detik