

LAMPIRAN

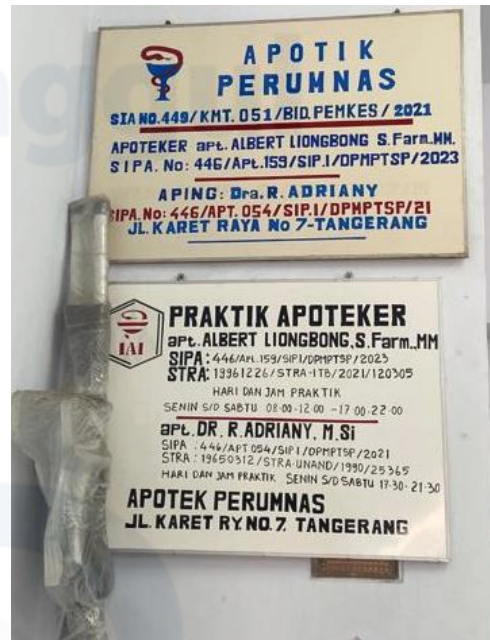
Lampiran 1. Survei Lokasi

a. Pembelian Obat pada toko obat di Pasar Pramuka



b. Pembelian Obat di Apotek Resmi





Lampiran 2. Perhitungan Pembelian Sediaan

a. Evaluasi Sediaan

Minggu	Evaluasi Sediaan (mL)				Kebutuhan Botol
	Organoleptik	Kejernihan	pH	Viskositas	
0	15	10	15	50	2
1	15	10	15	50	2
2	15	10	15	50	2
3	15	10	15	50	2
Jumlah Botol					8
Cadangan					2
Total Botol					10 x 3 suhu berbeda = 30 Botol

b. Penetapan Kadar

Minggu	Penetapan Kadar (mL)								
	2-8° C			15-30° C			<40° C		
	S1	S2	S3	S1	S2	S3	S1	S2	S3
0	5	5	5	5	5	5	5	5	5
1	5	5	5	5	5	5	5	5	5
2	5	5	5	5	5	5	5	5	5
3	5	5	5	5	5	5	5	5	5
Jumlah	1 botol x 4 minggu			1 botol x 4 minggu			1 botol x 4 minggu		
Cadangan	2 Botol			2 Botol			2 Botol		
Total Botol = 18 Botol									

Lampiran 3. Sertifikat Pengujian Ambroxol HCl

BADAN POM RI
SERTIFIKAT PENGUJIAN
AMBROKSOL HIDROKLORIDA
No. Kontrol 111042

Tujuan Penggunaan:
Ambroxol Hidroklorida Baku Pembanding Farmakope Indonesia no. Kontrol 111042 dapat digunakan sebagai pembanding dalam identifikasi secara spektrofotometri inframerah, uji senyawa sejenis secara kromatografi cair kinerja tinggi, serta penetapan kadar secara spektrofotometri ultraviolet dan kromatografi cair kinerja tinggi.

Pemerian: Serbuk hablur putih.

Identifikasi:
Spektrofotometri inframerah: Dispersi lebih kurang 2 mg zat dalam lebih kurang 200 mg kalium bromida menunjukkan spektrum inframerah seperti yang tercantum dalam gambar 1.

Kromatografi Cair Kinerja Tinggi (KCKT): Menunjukkan satu puncak tajam pada waktu retensi tertentu.

Susut pengeringan: 0,02% (n = 3, SD = 0,006%)

Uji senyawa sejenis secara kromatografi cair kinerja tinggi: Memenuhi kriteria. Jumlah semua cemaran adalah 0,03%, dengan kromatogram seperti tercantum dalam gambar 2.

Penetapan kadar:
Spektrofotometri ultraviolet: 99,56% $C_{17}H_{19}Br_2ClN_2O$ (n = 6, RSD = 0,67%) dihitung terhadap zat yang telah dikeringkan, dengan spektrum seperti yang tercantum dalam gambar 3.
Kromatografi cair kinerja tinggi: 100,44% $C_{17}H_{19}Br_2ClN_2O$ (n = 6, RSD = 0,33%) dihitung terhadap zat yang telah dikeringkan, dengan kromatogram seperti yang tercantum dalam gambar 4.

Kesimpulan: Ambroxol Hidroklorida no. Kontrol 111042 dapat dinyatakan sebagai Baku Pembanding Farmakope Indonesia sesuai dengan tujuan penggunaannya.

Wadah dan Penyimpanan: Dalam wadah tertutup rapat, terlindungi dari cahaya, lebih baik disimpan pada suhu 5°C.

Kepala Pusat Pengujian Obat dan Makanan Nasional
u.b. Manajer Teknis Laboratorium Bahan Baku Pembanding

[Signature]
Dra. Dini Prapti Karyani, M.Si
NIP. 19601223 199503 2 001

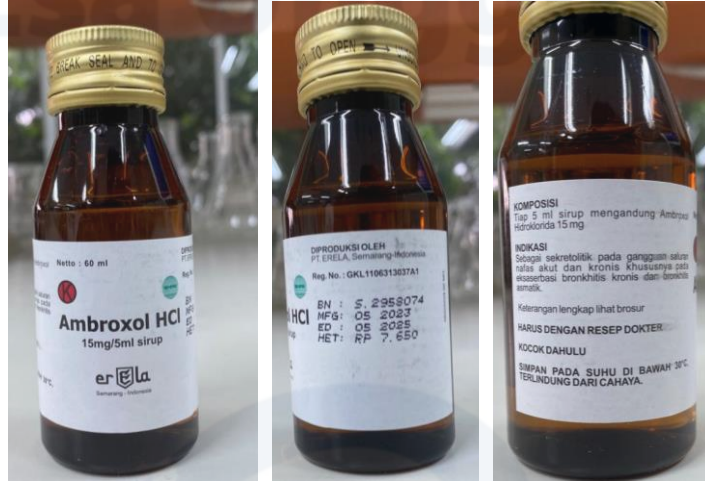
CRATY

BADAN P E N G A W A N O B A T D A N M A K A N A N R E P U B L I K I N D O N E S I A
Jl. Percetakan Negara No. 23, Jakarta Pusat 10560 Telp. 4245075, Fax. : 4201427, 4245150, E-mail. : ppmn@pom.go.id

Lampiran 4. BPFI (Baku Pembanding Farmakope Indonesia)



Lampiran 5. Sediaan Sirup Ambroxol HCl 15mg/5mL



Lampiran 6. Pengukuran Suhu di 3 tempat

1. 2-8 °C



2. 15-30 °C



3. Suhu Mobil



Lampiran 7. Penimbangan Pembuatan Larutan dan Reagen Ambroxol HCl BPHI

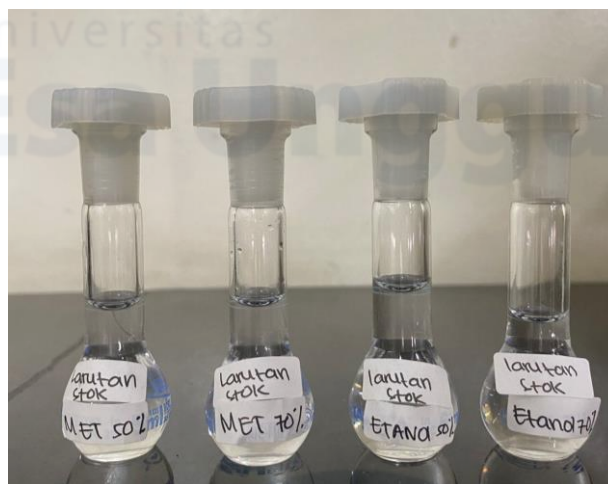


Lampiran 8. Pembuatan Larutan dan Reagen

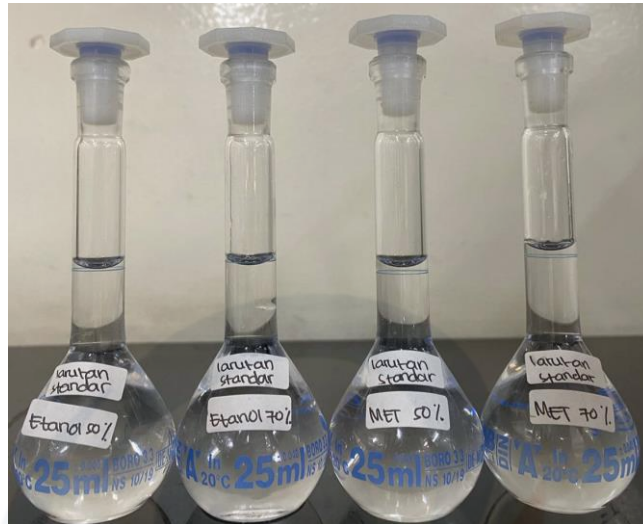
1. Pelarut Metanol 50%, Metanol 70%, Etanol 50%, dan Etanol 70% dalam 50 mL



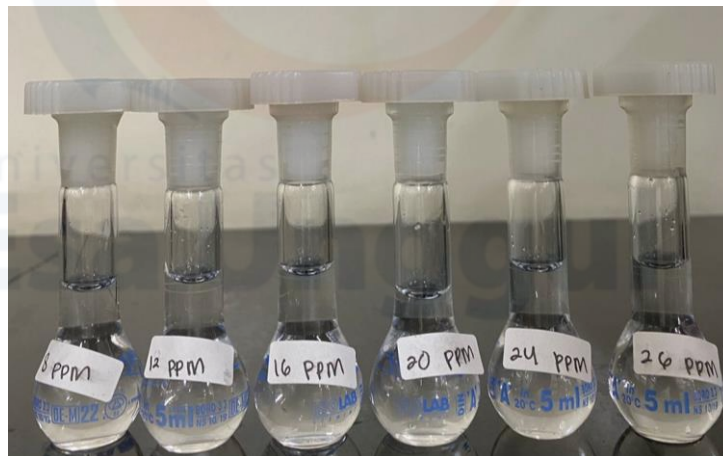
2. Larutan Stok 1000 ($\mu\text{g} / \text{mL}$) dalam 5 mL



3. Larutan Standar 100 ($\mu\text{g} / \text{mL}$) dalam 25 mL



4. Pengenceran Larutan Standar Ambroxol HCl untuk Validasi Metode



Lampiran 9. Perhitungan Pembuatan Reagen**1. Pembuatan Larutan Metanol 50% dan Etanol 50% dalam 50 mL**

$$50\% = \frac{50}{100} \times 50$$

$$= 25 \text{ mL}$$

2. Pembuatan Larutan Metanol 70% dan Etanol 70% dalam 50 mL

$$70\% = \frac{70}{100} \times 50$$

$$= 35 \text{ mL}$$

3. Pembuatan Larutan Stok Ambroxol HCl 1000 µg/mL dalam 5 mL

$$1000 \text{ ppm} = \frac{5 \text{ mg}}{5 \text{ mL}} = \frac{5000 \mu\text{g}}{5 \text{ mL}} = 1000 \mu\text{g/mL}$$

4. Pembuatan Larutan Standar Ambroxol HCl 100 µg/mL dalam 25 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 1000 \mu\text{g/mL} = 25 \text{ mL} \cdot 100 \mu\text{g/mL}$$

$$V_1 = 2,5 \text{ mL}$$

5. Pengenceran Larutan Standar Ambroxol HCl 100 µg/mL untuk Validasi Metode**a. 8 µg/mL dalam 5 mL**

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 5 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 0,4 \text{ mL}$$

b. 10 µg/mL dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 10 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 0,5 \text{ mL}$$

c. 12 µg/mL dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 12 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 0,6 \text{ mL}$$

d. 14 µg/mL dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 14 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 0,7 \text{ mL}$$

e. 16 $\mu\text{g/mL}$ dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 116 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 0,8 \text{ mL}$$

f. 18 $\mu\text{g/mL}$ dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 18 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 0,9 \text{ mL}$$

g. 20 $\mu\text{g/mL}$ dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 20 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 1 \text{ mL}$$

h. 22 $\mu\text{g/mL}$ dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 22 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 1,1 \text{ mL}$$

i. 24 $\mu\text{g/mL}$ dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 24 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 1,2 \text{ mL}$$

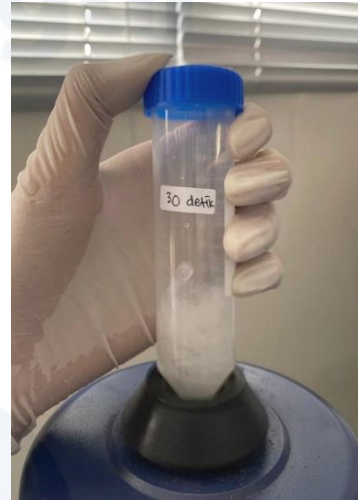
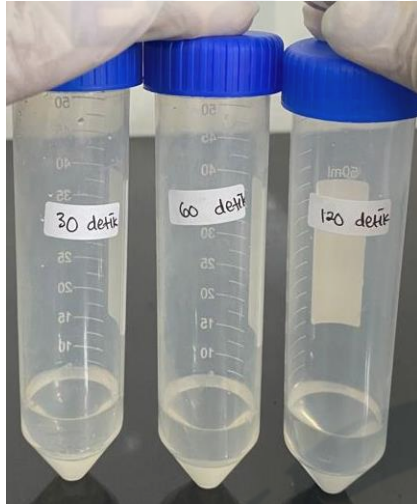
j. 26 $\mu\text{g/mL}$ dalam 5 mL

$$V_1 \cdot N_1 = V_2 \cdot N_2$$

$$V_1 \cdot 100 \mu\text{g/mL} = 26 \text{ mL} \cdot 8 \mu\text{g/mL}$$

$$V_1 = 1,3 \text{ mL}$$

Lampiran 10. Pembuatan Optimasi Preparasi Sampel



Ekstraksi dilakukan dengan menambahkan ambroxol HCl 5 mL, kloroform 2 mL.

Kemudian di vortex dengan waktu 30 detik, 60 detik, dan 120 detik. Agar terpisah filtratnya.



Disaring menggunakan kertas saring whatman no.41

Setelah diambil filtratnya, ditambahkan pelarut metanol 70% hingga tanda batas.

Lampiran 11. Perhitungan Optimasi Preparasi Sampel

Persamaan Regresi : $y = 0,025x + 0,0147$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

a. % Recovery Ekstrak Cair Kloroform dengan waktu vortex 30 detik

Rata – rata absorbansi = 0,6529

$$y = 0,025x + 0,0147$$

$$0,6529 = 0,025x + 0,0147$$

$$0,025x = 0,6529 - 0,0147$$

$$0,025x = 0,6382$$

$$x = 0,6382 / 0,025$$

$$x = 25,528 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$= \frac{25,528 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 127,64 \%$$

b. % Recovery Ekstrak Cair Kloroform dengan waktu vortex 60 detik

Rata – rata absorbansi = 0,5123

$$y = 0,025x + 0,0147$$

$$0,5123 = 0,025x + 0,0147$$

$$0,025x = 0,5123 - 0,0147$$

$$0,025x = 0,4976$$

$$x = 0,4976 / 0,025$$

$$x = 19,904 \mu\text{g/mL}$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \% \\
 &= \frac{19,904 \text{ } \mu\text{g/mL}}{20 \text{ } \mu\text{g/mL}} \times 100 \% \\
 &= 99,52 \%
 \end{aligned}$$

c. % Recovery Ekstrak Cair Kloroform dengan waktu vortex 120 detik

Rata – rata absorbansi = 0,4637

$$y = 0,025x + 0,0147$$

$$0,4637 = 0,025x + 0,0147$$

$$0,025x = 0,4637 - 0,0147$$

$$0,025x = 0,4490$$

$$x = 0,4490 / 0,025$$

$$x = 17,96 \text{ } \mu\text{g/mL}$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \% \\
 &= \frac{17,96 \text{ } \mu\text{g/mL}}{20 \text{ } \mu\text{g/mL}} \times 100 \% \\
 &= 89,80 \%
 \end{aligned}$$

Lampiran 12. Perhitungan Akurasi

Persamaan Regresi : $y = 0,0265x + 0,0023$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

a. Tingkat Penambahan Standar 80 %

Rata – rata absorbansi = 0,4737

$$y = 0,0265x + 0,0023$$

$$0,4737 = 0,0265x + 0,0023$$

$$0,0265x = 0,4737 - 0,0023$$

$$0,0265x = 0,4714$$

$$x = 0,4714 / 0,0265$$

$$x = 17,78 \text{ } \mu\text{g/mL}$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \% \\
 &= \frac{1,7788 \text{ } \mu\text{g/mL}}{18 \text{ } \mu\text{g/mL}} \times 100 \% \\
 &= 99,80 \%
 \end{aligned}$$

b. Tingkat Penambahan Standar 100 %

$$\text{Rata – rata absorbansi} = 0,5197$$

$$y = 0,0265x + 0,0023$$

$$0,5197 = 0,025x + 0,0023$$

$$0,0265x = 0,5197 - 0,0023$$

$$0,0265x = 0,5156$$

$$x = 0,5156 / 0,0265$$

$$x = 19,45 \text{ } \mu\text{g/mL}$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \% \\
 &= \frac{19,45 \text{ } \mu\text{g/mL}}{20 \text{ } \mu\text{g/mL}} \times 100 \% \\
 &= 98,80 \%
 \end{aligned}$$

c. Tingkat Penambahan Standar 120 %

$$\text{Rata – rata absorbansi} = 0,5906$$

$$y = 0,0265x + 0,0023$$

$$0,5906 = 0,025x + 0,0023$$

$$0,0265x = 0,5906 - 0,0023$$

$$0,0265x = 0,5883$$

$$x = 0,5883 / 0,0265$$

$$x = 22,2 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$= \frac{22,2 \mu\text{g/mL}}{22 \mu\text{g/mL}} \times 100 \%$$

$$= 101,71 \%$$

Lampiran 13. Perhitungan Presisi

$$\text{Standar Deviasi} = \sqrt{\frac{\sum (xi-x)^2}{(n-1)}}$$

$$\% \text{ RSD} = \frac{\text{Standar Deviasi}}{\text{Rata-rata}} \times 100 \%$$

1. Presisi Intraday

a. 10 $\mu\text{g/mL}$

Rata – rata absorbansi = 0,2552

$$\text{SD} = \sqrt{\frac{\sum (xi-x)^2}{(3-1)}}$$

$$= \sqrt{\frac{\sum (0,2557-0,2552)^2 + (0,2545-0,2552)^2 + (0,2553-0,2552)^2}{(3-1)}}$$

$$= 0,0006$$

$$\% \text{ RSD} = \frac{0,0006}{0,2552} \times 100 \%$$

$$= 0,2388 \%$$

b. 15 $\mu\text{g/mL}$

Rata – rata absorbansi = 0,3953

$$\text{SD} = \sqrt{\frac{\sum (xi-x)^2}{(3-1)}}$$

$$= \sqrt{\frac{\sum (0,3963-0,3953)^2 + (0,3930-0,3953)^2 + (0,3966-0,3953)^2}{(3-1)}}$$

$$= 0,0020$$

$$\% \text{ RSD} = \frac{0,0020}{0,3953} \times 100 \%$$

$$= 0,5102 \%$$

c. 20 µg/mL

Rata – rata absorbansi = 0,5274

$$\begin{aligned} \text{SD} &= \sqrt{\frac{\sum (xi-x)^2}{(3-1)}} \\ &= \sqrt{\frac{\sum (0,5301-0,5274)^2+(0,5286-0,5274)^2+(0,5234-0,5274)^2}{(3-1)}} \\ &= 0,0035 \end{aligned}$$

$$\begin{aligned} \% \text{ RSD} &= \frac{0,0035}{0,5274} \times 100 \% \\ &= 0,6681 \% \end{aligned}$$

2. Presisi Interday**a. 10 µg/mL**

Rata – rata absorbansi = 0,2570

$$\begin{aligned} \text{SD} &= \sqrt{\frac{\sum (xi-x)^2}{(n-1)}} \\ &= \sqrt{\frac{\sum (0,2568-0,2570)^2+(0,2578-0,2570)^2+(0,2565-0,2570)^2}{(3-1)}} \\ &= 0,0007 \end{aligned}$$

$$\begin{aligned} \% \text{ RSD} &= \frac{0,0007}{0,2570} \times 100 \% \\ &= 0,2772 \% \end{aligned}$$

b. 15 µg/mL

Rata – rata absorbansi = 0,3929

$$\begin{aligned} \text{SD} &= \sqrt{\frac{\sum (xi-x)^2}{(n-1)}} \\ &= \sqrt{\frac{\sum (0,3920-0,3929)^2+(0,3957-0,3929)^2+(0,3910-0,3929)^2}{(3-1)}} \\ &= 0,0024 \end{aligned}$$

$$\begin{aligned} \% \text{ RSD} &= \frac{0,0024}{0,3929} \times 100 \% \\ &= 0,6205 \% \end{aligned}$$

c. 20 µg/mL

Rata – rata absorpsi = 0,5386

$$\begin{aligned} \text{SD} &= \sqrt{\frac{\sum (xi-x)^2}{(n-1)}} \\ &= \sqrt{\frac{\sum (0,5369-0,5386)^2+(0,5369-0,5386)^2+(0,5419-0,5386)^2}{(3-1)}} \\ &= 0,0029 \end{aligned}$$

$$\begin{aligned} \% \text{ RSD} &= \frac{0,0029}{0,5386} \times 100 \% \\ &= 0,5378 \% \end{aligned}$$

Lampiran 14. Perhitungan LOD dan LOQ

$$\begin{aligned} \text{LOD} &= 3,3 \times \frac{SD}{\text{slope } (b)} \\ &= 3,3 \times \frac{0,00588}{0,0241} \\ &= 0,8059 \end{aligned}$$

$$\begin{aligned} \text{LOQ} &= 10 \times \frac{SD}{\text{slope } (b)} \\ &= 10 \times \frac{0,00588}{0,0241} \\ &= 2,4420 \end{aligned}$$

Lampiran 15. Perhitungan Penetapan Kadar Ambroxol Hcl SirupPersamaan Regresi : $y = 0,0262x + 0,0118$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

1. Penetapan Kadar Minggu ke-0**a) Apotek Resmi****• Suhu 2-8 °C**

Rerata absorpsi = 0,5122

$$y = 0,0262x + 0,0118$$

$$\begin{aligned}
 0,5122 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,5122 - 0,0118 \\
 0,0262x &= 0,5004 \\
 x &= 20,00 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{20,00 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 100,01 \%
 \end{aligned}$$

- **Suhu 15-30 °C**

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,5117 \\
 y &= 0,0262x + 0,0118 \\
 0,5117 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,5117 - 0,0118 \\
 0,0262x &= 0,4999 \\
 x &= 19,97 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{19,97 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 99,90 \%
 \end{aligned}$$

- **Suhu Mobil**

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,5114 \\
 y &= 0,0262x + 0,0118 \\
 0,5114 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,5114 - 0,0118 \\
 0,0262x &= 0,4996 \\
 x &= 20,08 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{20,08 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 100,43 \%
 \end{aligned}$$

b) Pasar Pramuka

- **Suhu 2-8 °C**

$$\text{Rerata absorbansi} = 0,4984$$

$$\begin{aligned}
 y &= 0,0262x + 0,0118 \\
 0,4984 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,4984 - 0,0118 \\
 0,0262x &= 0,4866 \\
 x &= 19,47 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{19,47 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 97,38 \%
 \end{aligned}$$

- **Suhu 15-30 °C**

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,4958 \\
 y &= 0,0262x + 0,0118 \\
 0,4958 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,4958 - 0,0118 \\
 0,0262x &= 0,484 \\
 x &= 19,37 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{19,37 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 96,01 \%
 \end{aligned}$$

- **Suhu Mobil**

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,4913 \\
 y &= 0,0262x + 0,0118 \\
 0,4913 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,4913 - 0,0118 \\
 0,0262x &= 0,4795 \\
 x &= 19,20 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{19,20 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 96,12 \%
 \end{aligned}$$

2. Penetapan Kadar Minggu ke-1

a) Apotek Resmi

- **Suhu 2-8 °C**

Rerata absorbansi = 0,4830

$$y = 0,0262x + 0,0118$$

$$0,4830 = 0,0262x + 0,0118$$

$$0,0262x = 0,4830 - 0,0118$$

$$0,0262x = 0,4712$$

$$x = 19,88 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{19,88 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 94,43 \% \end{aligned}$$

- **Suhu 15-30 °C**

Rerata absorbansi = 0,4949

$$y = 0,0262x + 0,0118$$

$$0,4949 = 0,0262x + 0,0118$$

$$0,0262x = 0,4949 - 0,0118$$

$$0,0262x = 0,4831$$

$$x = 19,34 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{19,34 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 96,10 \% \end{aligned}$$

- **Suhu Mobil**

Rerata absorbansi = 0,4783

$$y = 0,0262x + 0,0118$$

$$0,4783 = 0,0262x + 0,0118$$

$$0,0262x = 0,4783 - 0,0118$$

$$0,0262x = 0,4665$$

$$x = 18,70 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{18,70 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 93,52 \% \end{aligned}$$

b) Pasar Pramuka

• **Suhu 2-8 °C**

$$\begin{aligned} \text{Rerata absorbansi} &= 0,4772 \\ y &= 0,0262x + 0,0118 \\ 0,4772 &= 0,0262x + 0,0118 \\ 0,0262x &= 0,4772 - 0,0118 \\ 0,0262x &= 0,4654 \\ x &= 18,66 \mu\text{g/mL} \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{18,66 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 93,33 \% \end{aligned}$$

• **Suhu 15-30 °C**

$$\begin{aligned} \text{Rerata absorbansi} &= 0,4865 \\ y &= 0,0262x + 0,0118 \\ 0,4865 &= 0,0262x + 0,0118 \\ 0,0262x &= 0,4865 - 0,0118 \\ 0,0262x &= 0,4747 \\ x &= 19,02 \mu\text{g/mL} \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{19,02 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 95,10 \% \end{aligned}$$

• **Suhu Mobil**

$$\begin{aligned} \text{Rerata absorbansi} &= 0,4618 \\ y &= 0,0262x + 0,0118 \\ 0,4618 &= 0,0262x + 0,0118 \\ 0,0262x &= 0,4618 - 0,0118 \\ 0,0262x &= 0,450 \\ x &= 18,07 \mu\text{g/mL} \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{18,07 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 89,39 \% \end{aligned}$$

3. Penetapan Kadar Minggu ke-2

a) Apotek Resmi

- **Suhu 2-8 °C**

$$\text{Rerata absorbansi} = 0,4629$$

$$y = 0,0262x + 0,0118$$

$$0,4629 = 0,0262x + 0,0118$$

$$0,0262x = 0,4629 - 0,0118$$

$$0,0262x = 0,4511$$

$$x = 18,12 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{18,12 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 90,60 \% \end{aligned}$$

- **Suhu 15-30 °C**

$$\text{Rerata absorbansi} = 0,4760$$

$$y = 0,0262x + 0,0118$$

$$0,4760 = 0,0262x + 0,0118$$

$$0,0262x = 0,4760 - 0,0118$$

$$0,0262x = 0,4642$$

$$x = 18,61 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned} \% \text{ Recovery} &= \frac{18,61 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\ &= 93,09 \% \end{aligned}$$

- **Suhu Mobil**

$$\text{Rerata absorbansi} = 0,4350$$

$$y = 0,0262x + 0,0118$$

$$0,4350 = 0,0262x + 0,0118$$

$$0,0262x = 0,4350 - 0,0118$$

$$0,0262x = 0,4232$$

$$x = 17,05 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\% \text{ Recovery} = \frac{17,05 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 85,27 \%$$

b) Pasar Pramuka

- **Suhu 2-8 °C**

$$\text{Rerata absorbansi} = 0,4584$$

$$y = 0,0262x + 0,0118$$

$$0,4584 = 0,0262x + 0,0118$$

$$0,0262x = 0,4584 - 0,0118$$

$$0,0262x = 0,4466$$

$$x = 17,94 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\% \text{ Recovery} = \frac{17,94 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 89,75 \%$$

- **Suhu 15-30 °C**

$$\text{Rerata absorbansi} = 0,4836$$

$$y = 0,0262x + 0,0118$$

$$0,4836 = 0,0262x + 0,0118$$

$$0,0262x = 0,4836 - 0,0118$$

$$0,0262x = 0,4684$$

$$x = 18,90 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\% \text{ Recovery} = \frac{18,78 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 94,54 \%$$

- **Suhu Mobil**

$$\text{Rerata absorbansi} = 0,4194$$

$$y = 0,0262x + 0,0118$$

$$0,4194 = 0,0262x + 0,0118$$

$$0,0262x = 0,4194 - 0,0118$$

$$0,0262x = 0,4077$$

$$x = 16,46 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\% \text{ Recovery} = \frac{16,46 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 82,30 \%$$

4. Penetapan Kadar Minggu ke-3

a) Apotek Resmi

• Suhu 2-8 °C

$$\text{Rerata absorbansi} = 0,4413$$

$$y = 0,0262x + 0,0118$$

$$0,4413 = 0,0262x + 0,0118$$

$$0,0262x = 0,4413 - 0,0118$$

$$0,0262x = 0,4295$$

$$x = 17,29 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\% \text{ Recovery} = \frac{17,29 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 86,48 \%$$

• Suhu 15-30 °C

$$\text{Rerata absorbansi} = 0,4569$$

$$y = 0,0262x + 0,0118$$

$$0,4569 = 0,0262x + 0,0118$$

$$0,0262x = 0,4569 - 0,0118$$

$$0,0262x = 0,4451$$

$$x = 17,89 \mu\text{g/mL}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\% \text{ Recovery} = \frac{17,89 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \%$$

$$= 89,45 \%$$

• Suhu Mobil

$$\text{Rerata absorbansi} = 0,3971$$

$$y = 0,0262x + 0,0118$$

$$\begin{aligned}
 0,3971 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,3971 - 0,0118 \\
 0,0262x &= 0,3853 \\
 x &= 17,97 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{17,97 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 78,86 \%
 \end{aligned}$$

b) Pasar Pramuka

• Suhu 2-8 °C

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,4365 \\
 y &= 0,0262x + 0,0118 \\
 0,4365 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,4365 - 0,0118 \\
 0,0262x &= 0,4247 \\
 x &= 17,11 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{17,11 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 85,56 \%
 \end{aligned}$$

• Suhu 15-30 °C

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,4518 \\
 y &= 0,0262x + 0,0118 \\
 0,4518 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,4518 - 0,0118 \\
 0,0262x &= 0,4300 \\
 x &= 17,69 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

$$\begin{aligned}
 \% \text{ Recovery} &= \frac{17,69 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 88,48 \%
 \end{aligned}$$

• Suhu Mobil

$$\begin{aligned}
 \text{Rerata absorbansi} &= 0,3717 \\
 y &= 0,0262x + 0,0118
 \end{aligned}$$

$$\begin{aligned}
 0,3717 &= 0,0262x + 0,0118 \\
 0,0262x &= 0,3717 - 0,0118 \\
 0,0262x &= 0,3599 \\
 x &= 14,63 \mu\text{g/mL}
 \end{aligned}$$

$$\% \text{ Recovery} = \frac{\text{hasil analisis}}{\text{nilai sesungguhnya}} \times 100 \%$$

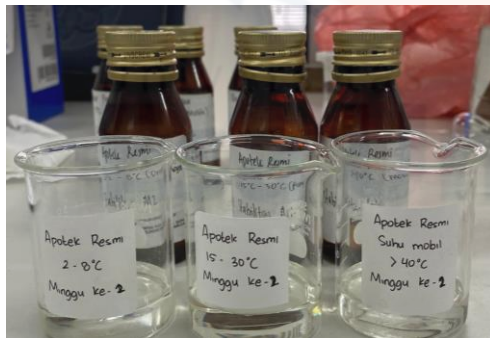
$$\begin{aligned}
 \% \text{ Recovery} &= \frac{14,63 \mu\text{g/mL}}{20 \mu\text{g/mL}} \times 100 \% \\
 &= 73,18 \%
 \end{aligned}$$

Lampiran 16. Uji Organoleptik

1. Uji Organoleptik Minggu ke-0



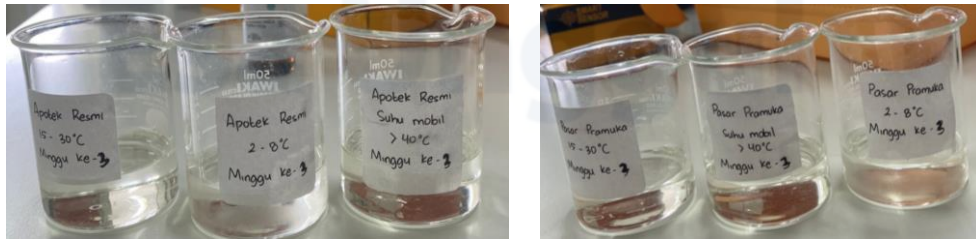
2. Uji Organoleptik Minggu ke-1



3. Uji Organoleptik Minggu ke-2

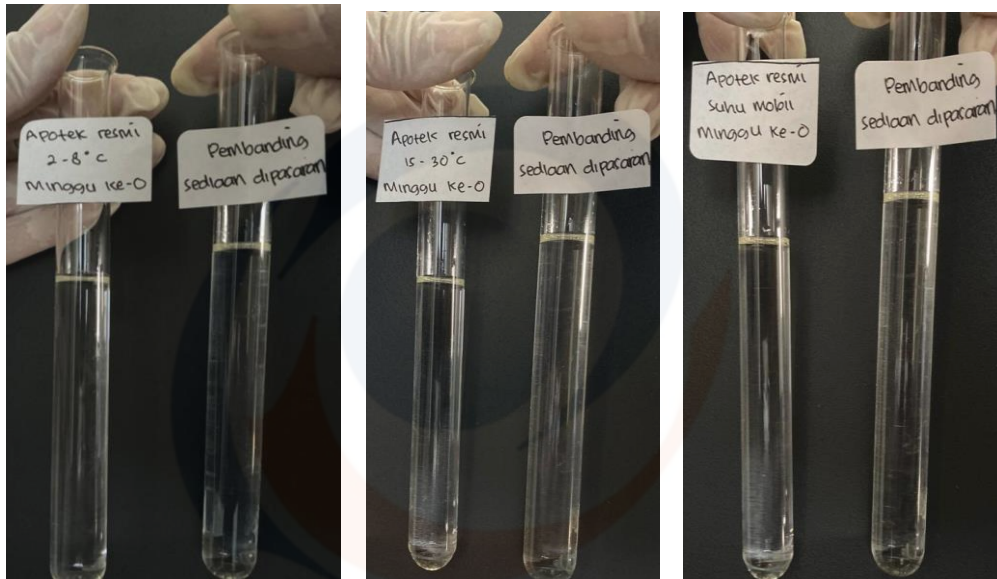


4. Uji Organoleptik Minggu ke-3



Lampiran 17. Uji Kejernihan

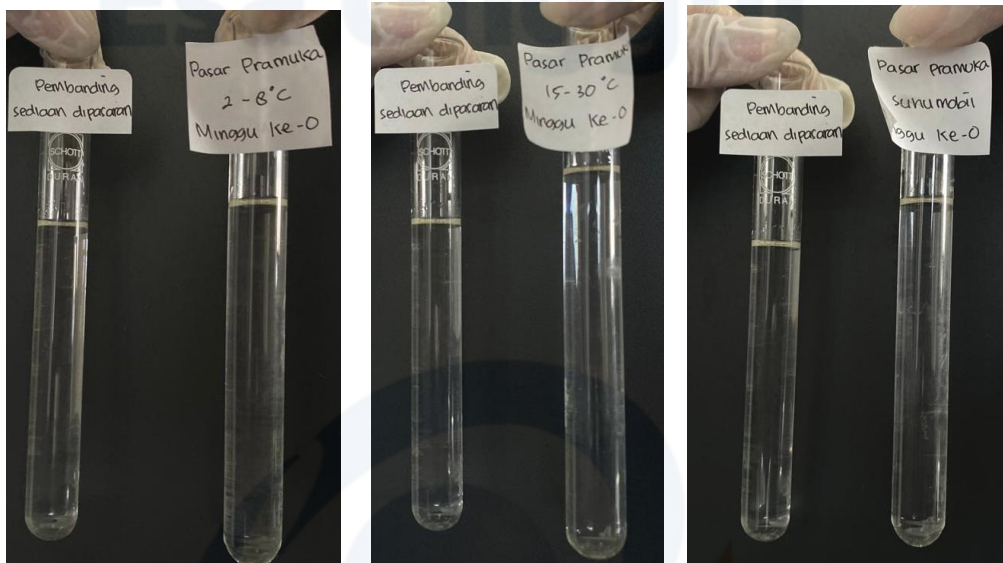
1. Uji Kejernihan Minggu ke-0



Apotek Resmi
2-8 °C

Apotek Resmi
15-30 °C

Apotek Resmi
Suhu Mobil



Pasar Pramuka
2-8 °C

Pasar Pramuka
15-30 °C

Pasar Pramuka
Suhu Mobil

2. Uji Kejernihan Minggu ke-1



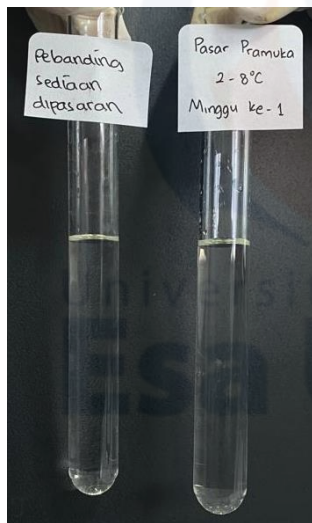
Apotek Resmi
2-8 °C



Apotek Resmi
15-30 °C



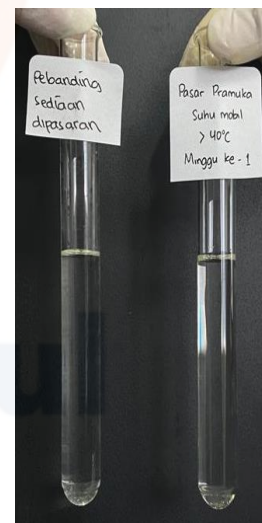
Apotek Resmi
Suhu Mobil



Pasar Pramuka
2-8 °C



Pasar Pramuka
15-30 °C



Pasar Pramuka
Suhu Mobil

3. Uji Kejernihan Minggu ke-2



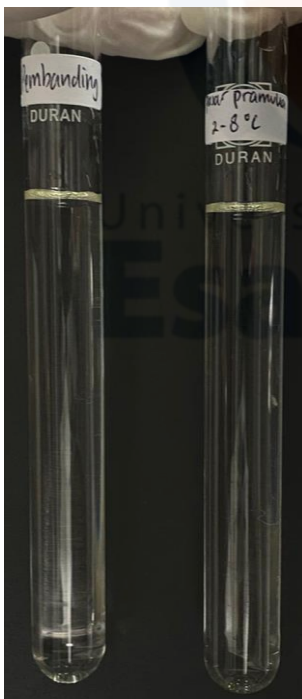
Apotek Resmi
2-8 °C



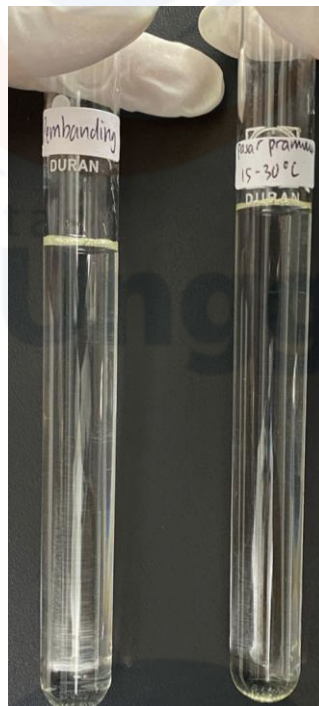
Apotek Resmi
15-30 °C



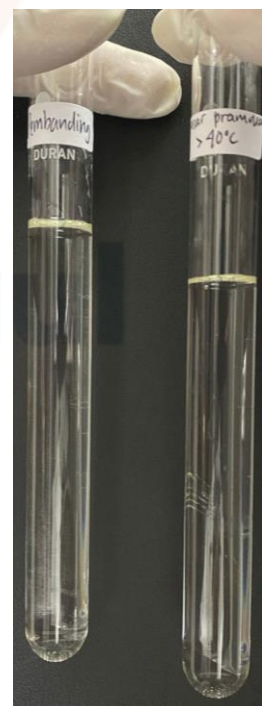
Apotek Resmi
Suhu Mobil



Pasar Pramuka
2-8 °C

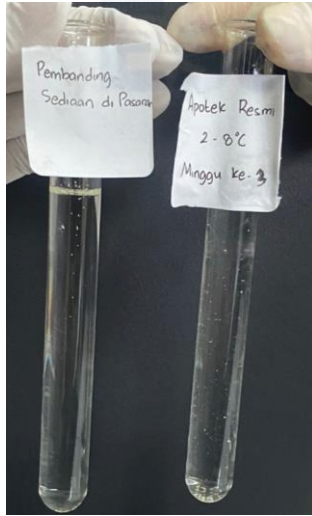


Pasar Pramuka
15-30 °C

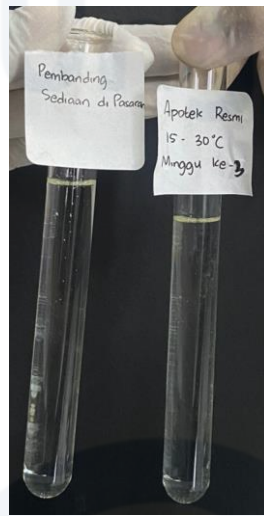


Apotek Resmi
Suhu Mobil

4. Uji Kejernihan Minggu ke-3



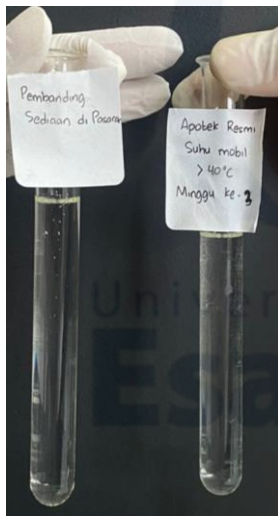
Apotek Resmi
2-8 °C



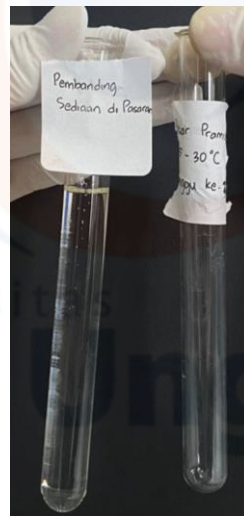
Apotek Resmi
15-30 °C



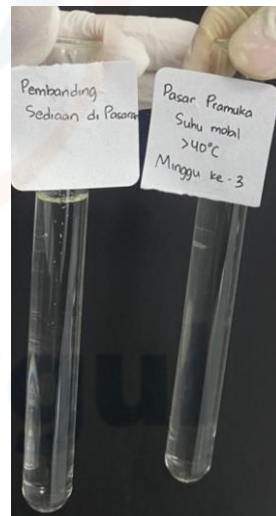
Apotek Resmi
Suhu Mobil



Pasar Pramuka
2-8 °C



Pasar Pramuka
15-30 °C



Apotek Resmi
Suhu Mobil

Lampiran 18. Uji pH
1. Uji pH Minggu ke-0



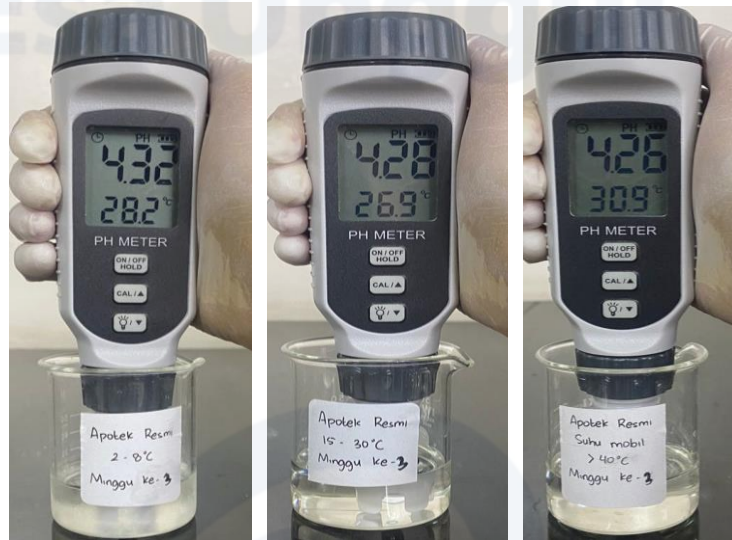
2. Uji pH Minggu ke-1



3. Uji pH Minggu ke-2



4. Uji pH Minggu ke-3



Lampiran 19. Uji Viskositas

1. Minggu ke-0

- **Apotek Resmi**



- **Pasar Pramuka**



2. Minggu ke-1

- **Apotek Resmi**



- **Pasar Pramuka**



3. Minggu ke-2

- **Apotek Resmi**



- **Pasar Pramuka**



4. Minggu ke-3

- Apotek Resmi



- Pasar Pramuka

