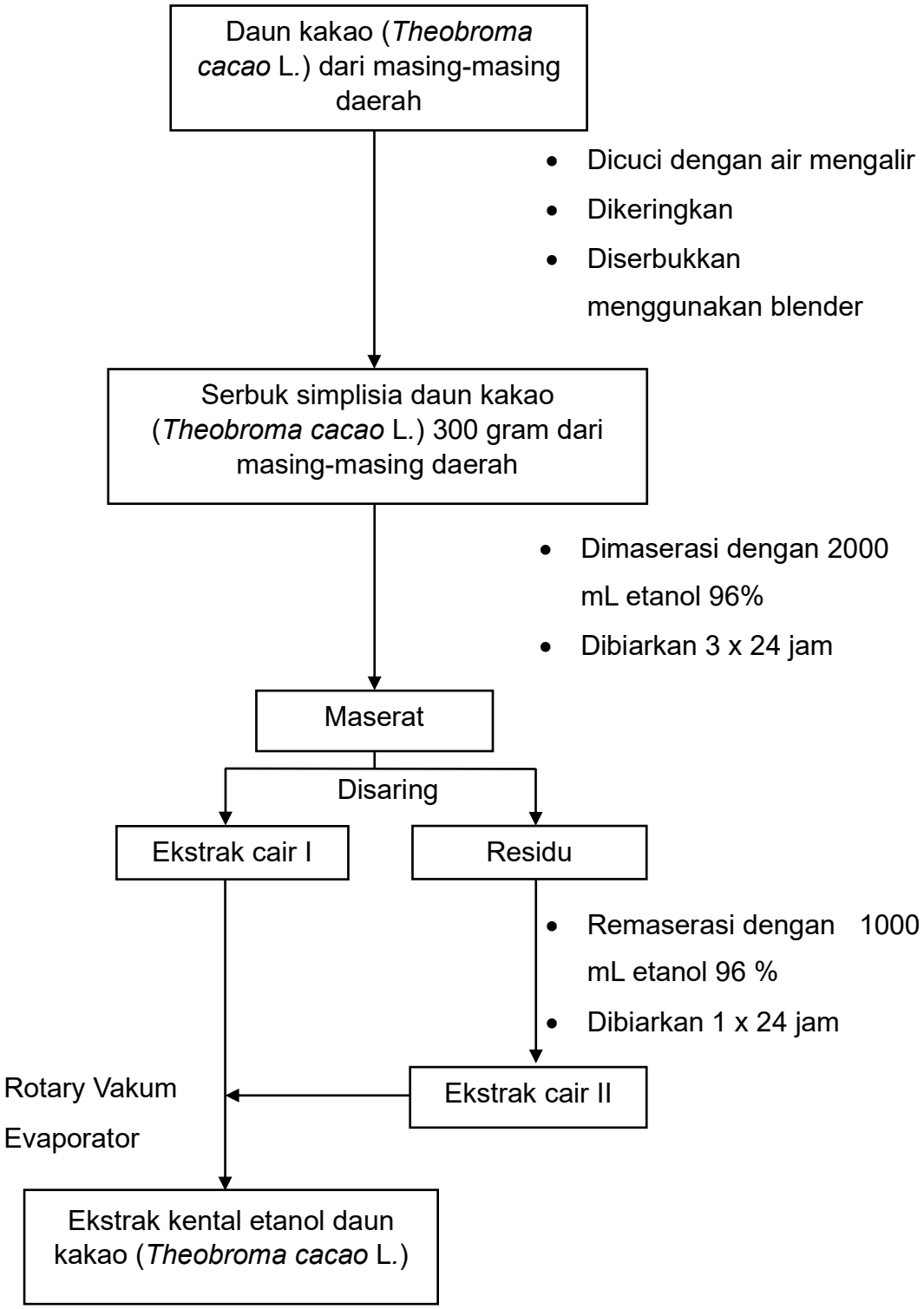
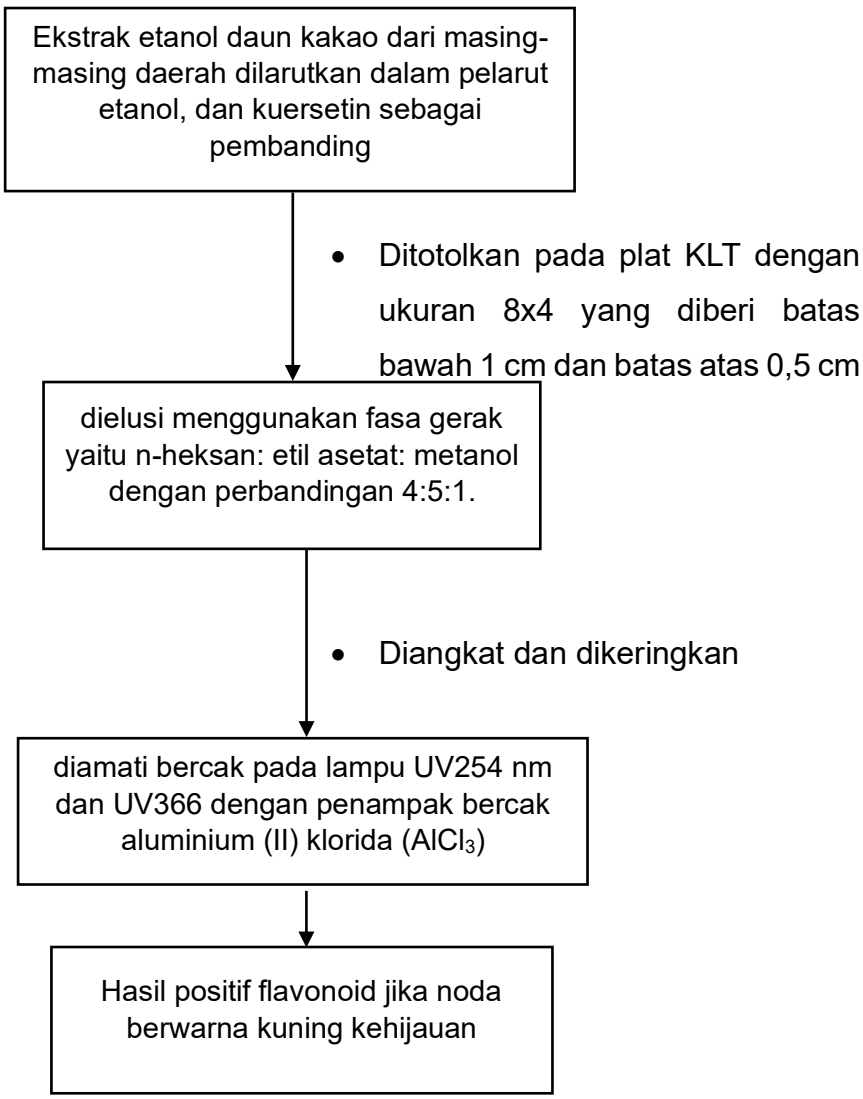
LAMPIRAN

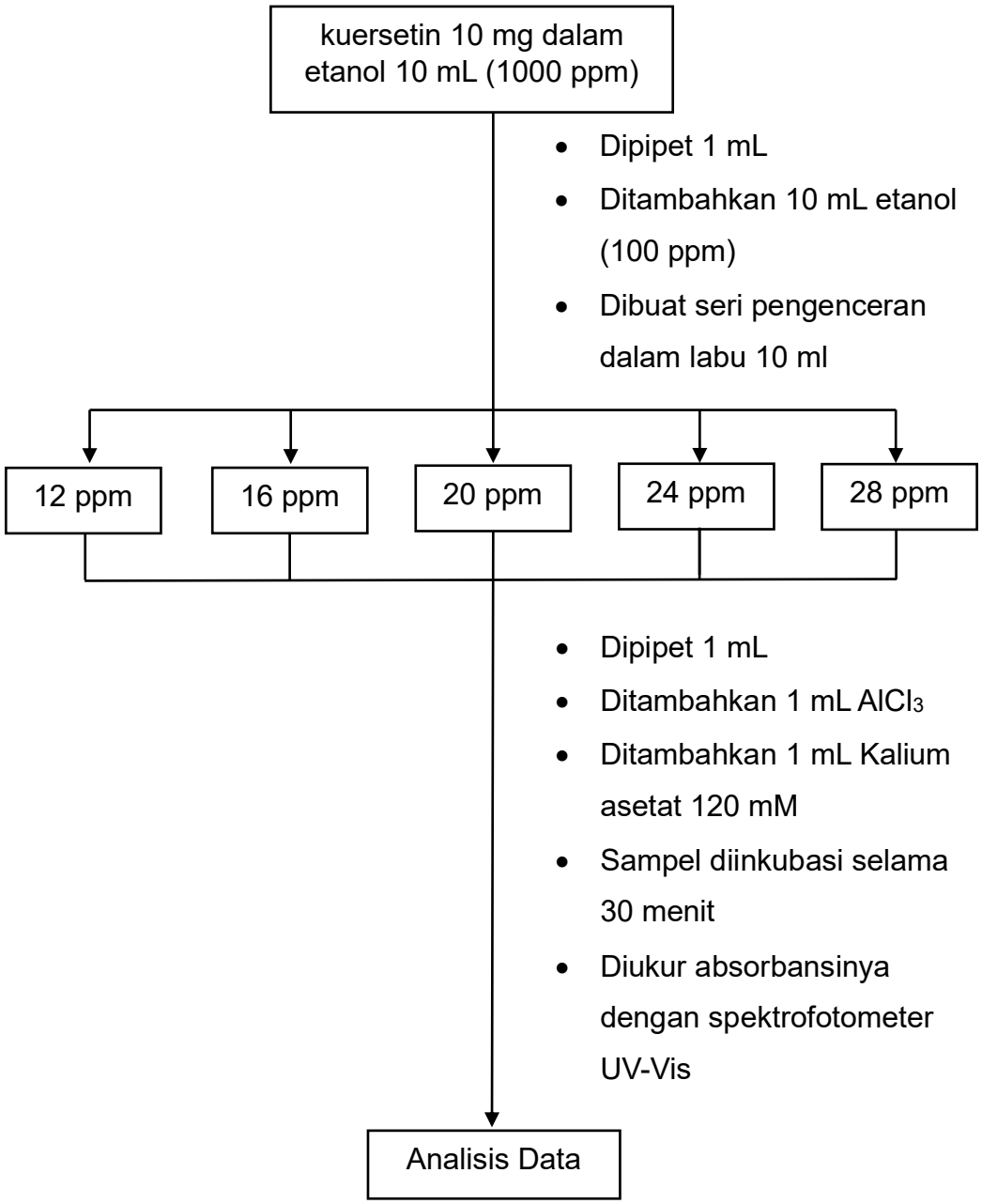
Lampiran 1. Skema kerja pengolahan dan ekstraksi daun kakao (*Theobroma cacao* L.)



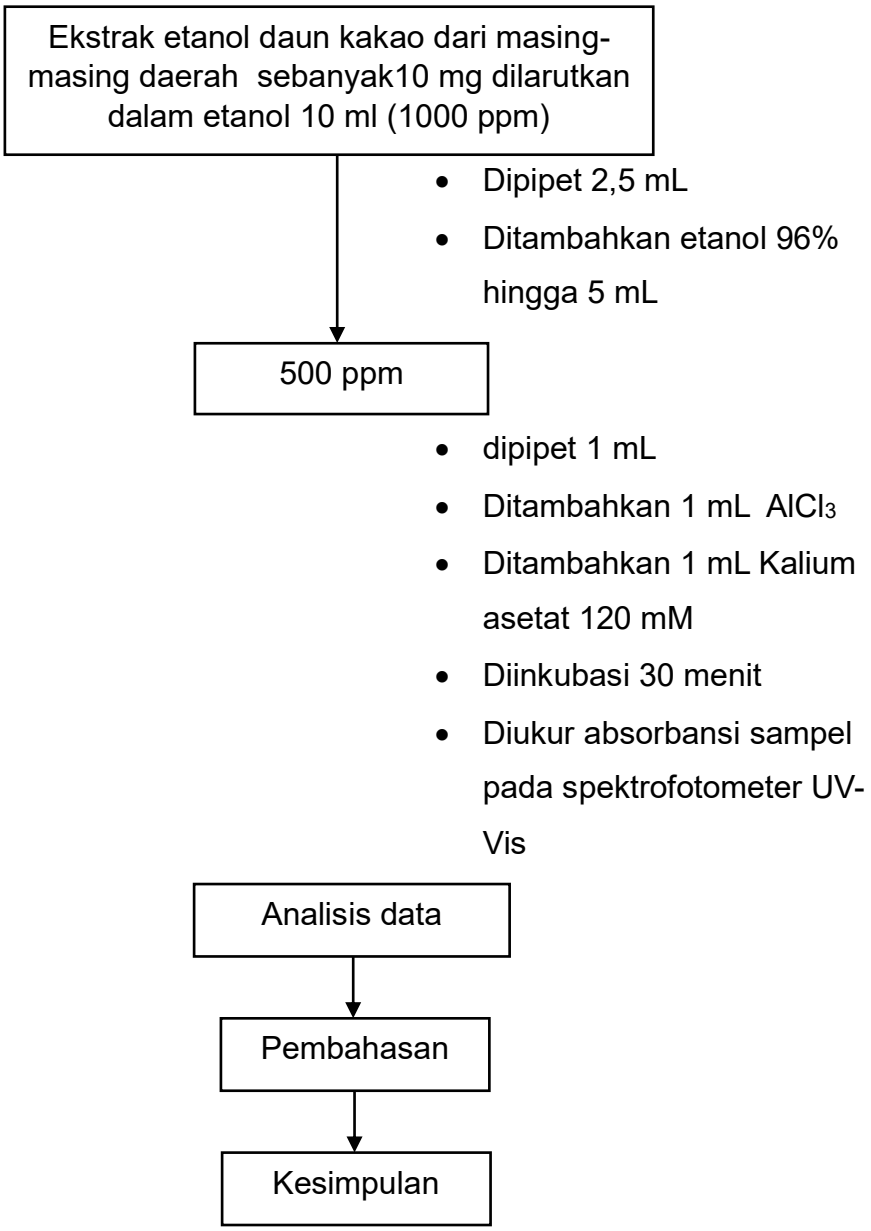
Lampiran 2. Skema kerja uji kualitatif senyawa flavonoid dengan metode KLT (Kromatografi Lapis Tipis)



Lampiran 3. Skema kerja pembuatan kurva standar kuersetin.



Lampiran 4. Skema kerja penetapan kadar flavonoid ekstrak etanol daun kakao (*Theobroma cacao* L.).



Lampiran 5. Perhitungan persen rendamen ekstrak etanol daun kakao (*Theobroma cacao* L.)

%rendemen = $\frac{Bobot\ ekstrak}{Bobot\ simplisia}$ x 100

a. Malino

%rendemen = $\frac{17{,}2\ g}{300\ g}$ x 100

= 5,733%

b. Wajo

%rendemen = $\frac{9{,}97\ g}{300\ g}$ x 100

= 3,323%

c. Jeneponto

%rendemen = $\frac{14{,}72\ g}{300\ g}$ x 100

= 3,906%

Lampiran 6. Perhitungan nilai RF (Retardation Factor)

$$Rf = \frac{Jarak\ tempuh\ analit}{Jarak\ tempuh\ eluen}$$

- Kuersetin

  $Rf = \frac{4,2}{6,5} = 0,646$
- Jeneponto

  $Rf = \frac{4,4}{6,5} = 0,676$
- Malino

  $Rf = \frac{4,4}{6,5} = 0,676$
- Wajo

  $Rf = \frac{4,5}{6,5} = 0,692$

Lampiran 7. Perhitungan kadar flavonoid ekstrak etanol daun kakao (*Theobroma cacao* L.)

a. Jeneponto

Tabel 5. Hasil perhitungan kadar flavonoid pada ekstrak etanol daun kakao (*Theobroma cacao* L.) daerah Jeneponto

Replikasi	Abs (Y)	Kandungan flavanoid awal	Kandungan total flavonoid (mgQE/g ekstrak)	Rata-rata kandungan total flavonoid (mgQE/g ekstrak)
1	0,503	22,526	42,906	45,812
2	0,543	24,041	46,232	
3	0,565	24,875	48,300	

Diketahui:

Bobot Sampel

Replikasi 1 = 10,5 mg = 0,0105 g,

Replikasi 2 = 10,4 mg = 0,0104 g

Replikasi 3 = 10,3 mg = 0,0103 g

Faktor Pengenceran (FP) = 2

10 mg ⟶ 10mL (1000 ppm)

↓ 2,5 mL

5 mL (500 ppm)

Jadi FP = $\frac{1000}{500}$ = 2

Volume Sampel = 10 mL

y = Absorbansi

x = Konsentrasi (ppm = mg/L)

- Kandungan Flavonoid awal (x)

  Persamaan linear y = bx + a

  y = 0,0264x + (– 0,0917)

  = 0,0264x – 0,0917

  r = 0, 9997

  Replikasi 1

y = 0,0264x – 0,0917

0,503 = 0,0264x – 0,0917

0,0264x = 0,503 + 0,0917

x = 22,526 mg/L

Replikasi 2

y = 0,0264x – 0,0917

0,543 = 0,0264x – 0,0917

0,0264x = 0,543 + 0,0917

x = 24,041mg/L

Replikasi 3

y = 0,0264x – 0,0917

0,565 = 0,0264x – 0,0917

0,0264x = 0,565 + 0,0917

x = 24,875 mg/L

- Penetapan kadar flavonoid

Kadar Flavonoid = $\frac{X.V.Fp}{W}$ X 100%

Replikasi 1

Total Flavonoid = $\frac{22{,}526\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0105\ \text{g}}$

= 42,906 mgQE/g ekstrak

Replikasi 2

Total Flavonoid = $\frac{24{,}041\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0104\ \text{g}}$

= 46,232 mgQE/g ekstrak

Replikasi 3

Total Flavonoid = $\frac{24{,}875\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0103\ \text{g}}$

= 48,300 mgQE/g ekstrak

b. Wajo

Tabel 6. Hasil perhitungan kadar flavonoid pada ekstrak etanol daun kakao (*Theobroma cacao* L.) daerah Wajo

Replikasi	Abs (Y)	Kandungan flavanoid awal	Kandungan total flavonoid (mgQE/g ekstrak)	Rata-rata kandungan total flavonoid (mgQE/g ekstrak)
1	0,470	21,276	40,915	41,556
2	0,465	21,087	40,551	
3	0,490	22,034	43,203	

Diketahui:

Bobot Sampel

Replikasi 1 = 10,4 mg = 0,0104 g

Replikasi 2 = 10,4 mg = 0,0104 g

Replikasi 3 = 10,2 mg = 0,0102 g

Faktor Pengenceran (FP) = 2

10 mg ⟶ 10mL (1000 ppm)

↓ 2,5 mL

5 mL (500 ppm)

Jadi FP = $\frac{1000}{500}$ = 2

Volume Sampel = 10 mL

y = Absorbansi

x = Konsentrasi (ppm = mg/L)

- Kandungan Flavonoid awal (x)

  Persamaan linear y = bx + a

  y = 0,0264x + (– 0,0917)

  = 0,0264x – 0,0917

  r = 0, 9997

  Replikasi 1

  y = 0,0264x – 0,0917

  0,470 = 0,0264x – 0,0917

0,0264x = 0,470 + 0,0917

x = 21, 276 mg/L

Replikasi 2

y = 0,0264x – 0,0917

0,465 = 0,0264x – 0,0917

0,0264x = 0,465 + 0,0917

x = 21, 087 mg/L

Replikasi 3

y = 0,0264x – 0,0917

0,490 = 0,0264x – 0,0917

0,0264x = 0,490 + 0,0917

x = 22,034 mg/L

- Penetapan kadar flavonoid

Kadar Flavonoid = $\frac{X.V.Fp}{W}$ X 100%

Replikasi 1

Total Flavonoid = $\frac{21{,}276\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0104\ \text{g}}$

= 40,915 mgQE/g ekstrak

Total Flavonoid = $\frac{21{,}087\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0104\ \text{g}}$

= 40,551 mgQE/g ekstrak

Total Flavonoid = $\frac{22{,}034\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0102\ \text{g}}$

= 43,203 mgQE/g ekstrak

c. Malino

Tabel 7. Hasil perhitungan kadar flavonoid pada ekstrak etanol daun kakao (*Theobroma cacao* L.) daerah Malino

Replikasi	Abs (Y)	Kandungan flavanoid awal	Kandungan total flavonoid (mgQE/g ekstrak)	Rata-rata kandungan total flavonoid (mgQE/g ekstrak)
1	0,441	20,178	38,803	38,343
2	0,433	19,875	38,592	
3	0,425	19,571	37,636	

Diketahui:

Bobot Sampel

Replikasi 1 = 10,4 mg = 0,0104 g

Replikasi 2 = 10,3 mg = 0,0103 g

Replikasi 3 = 10,4 mg = 0,0104 g

Faktor Pengenceran (FP) = 2

10 mg ⟶ 10mL (1000 ppm)

↓ 2,5 mL

5 mL (500 ppm)

Jadi FP = $\frac{1000}{500}$ = 2

Volume Sampel = 10 mL

y = Absorbansi

x = Konsentrasi (ppm = mg/L)

- Kandungan Flavonoid awal (x)

  Persamaan linear y = bx + a

  y = 0,0264x + (– 0,0917)

  = 0,0264x – 0,0917

  r = 0, 9997

  Replikasi 1

  y = 0,0264x – 0,0917

  0,441 = 0,0264x – 0,0917

0,0264x = 0,441 + 0,0917

x = 20,178 mg/L

Replikasi 2

y = 0,0264x – 0,0917

0,433 = 0,0264x – 0,0917

0,0264x = 0,433 + 0,0917

x = 19,875 mg/L

Replikasi 3

y = 0,0264x – 0,0917

0,425 = 0,0264x – 0,0917

0,0264x = 0,425 + 0,0917

x = 19,571 mg/L

- Penetapan kadar flavonoid

Kadar Flavonoid = $\frac{X.V.Fp}{W}$ X 100%

Replikasi 1

Total Flavonoid = $\frac{20{,}178\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0104\ \text{g}}$

= 38,803 mgQE/g ekstrak

Total Flavonoid = $\frac{19{,}875\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0103\ \text{g}}$

= 38,592 mgQE/g ekstrak

Total Flavonoid = $\frac{19{,}571\ \frac{\text{mg}}{\text{L}} x\ 0{,}01\ L\ x\ 2}{0{,}0104\ \text{g}}$

= 37,636 mgQE/g ekstrak

Lampiran 8. Dokumentasi pengambilan sampel

Gambar 6. Tanaman kakao (*Theobroma cacao* L.) daerah Malino (Dokumentasi pribadi)

Gambar 7. Tanaman kakao (*Theobroma cacao* L.) daerah Jeneponto (Dokumentasi pribadi)

Gambar 8. Tanaman kakao (*Theobroma cacao* L.) daerah Wajo (Dokumentasi pribadi)

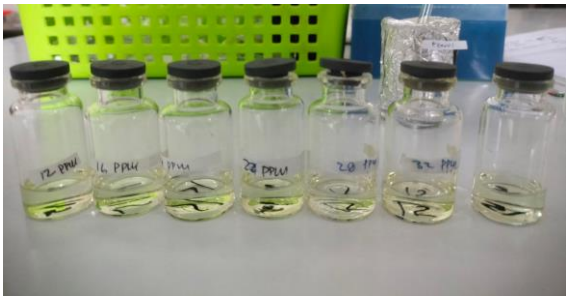
Lampiran 9. Dokumentasi prosedur kerja

Gambar 9. Proses Ekstraksi

(a) (b) (c)

Gambar 10. Ekstrak kental (a) Jeneponto, (b) Wajo, (c) Malino.

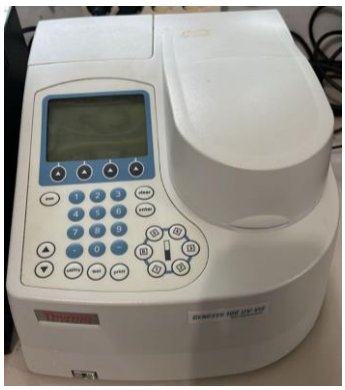
Gambar 11. Analisis kualitatif metode KLT.



Gambar 12. Pengukuran larutan standar kersetin.

(a) (b) (c)

Gambar 13. Pengukuran absorbansi sampel ekstrak etanol daun kakao (*Theobroma cacao* L.) (a) Jeneponto, (b) Wajo (c) Malino.



Gambar 14. Spektrofotometer UV-Vis