L A M P I R A N

Lampiran 1. Determinasi

UPT-LABORATORIUM

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Nomor : 012/DET/UPT-LAB/30.6.2022
Hal : Hasil determinasi tumbuhan
Lamp. : -

Nama Pemesan : Merie Saphira Cahyani
NIM : 21154659A
Prodi : S1 Farmasi, Universitas Setia Budi, Surakarta
Nama Sampel : Nyamplung/*Calophyllum inophyllum* L.

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Magnoliopsida
Ordo : Malpighiales
Famili : Guttiferae/Calophyllaceae
Genus : Calophyllum
Species : *Calophyllum inophyllum*

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J. 1992 :
1b – 2b – 3b – 4b – 6b – 7b – 9b – 10b – 11b – 12b – 13b – 14b – 16a. Gol. 10. Daun tunggal, letak berhadapan. 239a - 240a. Familia : Guttiferae – 1b – 2. *Calophyllum inophyllum.*

Deskripsi:
Habitus : Pohon, tinggi 10-20 m, bengkok, besar, mengandung damar.

Batang : Batang tidak tinggi cenderung sangat pendek, tidak lurus, berkayu keras, cabang rendah dekat tanah, ranting muda gundul, warna coklat atau putih kotor.

Daun : Daun tunggal, bersilang berhadapan, tangkai daun 1,5-2,5 cm. Helaian daun memanjang sampai ellips bulat telur terbalik, ujung tumpul, membulat atau melekuk ke dalam, tepi rata, seperti kulit, mengkilat, 10 – 21 kali 6 -11 cm.

Bunga : Bunga berkelamin 2, berbau enak, garis tengah 2-3 cm. Bunga majemuk tandan, berbunga 7-13, letaknya di ketiak daun teratas. Anak tangkai bunga putih. Daun kelopak 4, 2 yang terdalam putih bersih. Daun mahkota 4, putih, memanjang, kerapkali tidak beraturan. Benangsari banyak, pangkalnya bersatu menjadi 4-6 berkas. Bakal buah kebanyakan merah. Tangkai putik membengkok saat kuncup, kepala putik bentuk perisai.

Buah : Buah batu bentuk seperti peluru, ujung meruncing, garis tengah 2,5 – 3 cm. Kulit biji sangat tebal, warna hijau dan berubag kuning kecoklatan saat masak.

Biji : Biji bulat, ujung meruncing mengandung minyak berwarna kuning.

Akar : Akar tunggang, coklat, bulat.

Surakarta, 30 Juni 2022

Kepala UPT-LAB	Penanggung jawab
Universitas Setia Budi	Determinasi Tumbuhan
Asik Gunawan, Amdk	Dra. Dewi Sulistyawati. M.Sc.

Lampiran 2. Perhitungan Ekstrak

A. Ekstrak 1 (20%)

Berat Simplisia = 10,000 gram

Berat Wadah = 54,861 gram

Berat Wadah + Ekstrak = 63,726 gram

Berat Ekstrak = 8,865 gram

Rendemen = $\frac{8,865}{10,000} \times 100\% = 88,65\%$

B. Ekstrak II (40%)

Berat Simplisia = 10,000 gram

Berat Wadah = 54,878 gram

Berat Wadah + Ekstrak = 63, 382 gram

Berat Ekstrak = 9,504 gram

Rendemen = $\frac{9,504}{10,000} \times 100\% = 95,04\%$

C. Ekstrak III (60%)

Berat Simplisia = 10,000 gram

Berat Wadah = 54,944 gram

Berat Wadah + Ekstrak = 64,811 gram

Berat Ekstrak = 9,876 gram

Rendemen = $\frac{9,876}{10,000} \times 100\% = 98,76\%$

Lampiran 3.Perhitungan Bobot Jenis

A. Ekstrak I (20%)

Piknometer Kosong = 34, 0695 gram

Piknometer + Air = 83, 8199 gram

Piknometer + Zat Uji = 67,3101 gram

Bobot Jenis $= \frac{67,3101-34,0695}{83,8199-34,0695} = \frac{33,2406}{49,7504} =$ 0,668

B. Ekstrak II (40%)

Piknometer Kosong = 34,2112 gram

Piknometer + Air = 83, 5552 gram

Piknometer + Zat Uji = 67,1615 gram

Bobot Jenis $= \frac{67,1615-34,2112}{83,5552-34,2112} = \frac{32,9503}{49,344} =$ 0,667

C. Ekstrak III (60%)

Piknometer Kosong = 34,2102 gram

Piknometer + Air = 83,5448 gram

Piknometer + Zat Uji = 67,2814 gram

Bobot Jenis $= \frac{67,2814-34,2102}{83,5448-34,2102} = \frac{33,0712}{49,3346} =$ 0,670

Lampiran 4.Perhitungan Susut Pengeringan

Berat Kurst Kosong = 64,921gram
Berat Simplisia = 2,0009gram
Berat Kurst + Simplisia = 66,9219gram

Perhitungan

1 $.\frac{66,9219-66,490}{66,9219} \times 100 = 0,645\%$

2 $\frac{66,9219-66,478}{66,9219} \times 100 = 0,663\%$

3 $\frac{66,9219-66,472}{66,9219} \times 100 = 0,672\%$

Lampiran 5. Fase Gerak

Fase gerak : Metanol : Kloroform : Eter (5 : 4 : 1)

Metanol = $\frac{5}{10} \times 8 = 4\ ml$

Kloroform = $\frac{4}{10} \times 8 = 3,2\ ml$

Eter = $\frac{1}{10} \times 8 = 0,8\ ml$

Lampiran 6. Perhitungan Rf

Ekstrak I

a : 3,7 Nilai Rf : $\frac{3,7}{4,6} = 0,804$

b : 4,6

Ekstrak II

a : 3,6 Nilai Rf : $\frac{1,6}{4,6} = 0,782$

b : 4,6

Ekstrak III

a : 3,5 Nilai Rf : $\frac{3,5}{4,6} = 0,760$

b. 4,6

Baku Kuersetin

a : 3,7 Nilai Rf : $\frac{3,7}{4,6} = 0,804$

b : 4,6

Lampiran 7. Pembuatan Baku Induk Kuersetin

Kuersetin = $\frac{50mg}{50\ ml} = 1000\ ppm$

Lampiran 8. Pembuatan Larutan Kerja Kuersetin

$V_1 . N_1 = V_2 . N_2$

$5.1000. = 10.N_2$

$5000 = 10\ N_2$

$N_2 = \frac{5000}{10}$

$N_2 = 500$ ppm

Lampiran 9. Pembuatan Kurva Baku Kuersetin

1. Kuersetin 20 ppm

$V_1 . N_1 = V_2 . N_2$

$V_1 . .500 = 10.20$

$500V_1 = 200$

$V_1 = \frac{200}{500}$

$V_1 = 0,4$ mL

2. Kuersetin 40 ppm

$V_1 . N_1 = V_2 . N_2$

$V_1 . .500 = 10.40$

$500V_1 = 400$

$V_1 = \frac{400}{500}$

$V_1 = 0,8$mL

3. Kuersetin 60 ppm

$V_1 . N_1 = V_2 . N_2$

$V_1 . .500 = 10.60$

$500V_1 = 600$

$V_1 = \frac{600}{500}$

$V_1 = 1, 2$ mL

4. Kuersetin 80 ppm

$V_1 . N_1 = V_2 . N_2$

$V_1 . .500 = 10.80$

$500V_1 = 800$

$V_1 = \frac{800}{500}$

$V_1 = 1,6$ mL

5. Kuersetin 100 ppm

$V_1 . N_1 = V_2 . N_2$

$V_1 . .500 = 10.100$

$500V_1 = 1000$

$V_1 = \frac{1000}{500}$

$V_1 = 2$ mL

Lampiran 10. Penetapan Kadar Flavonoid

1. Persamaan Regresi

X	y	X^2	Y^2	XY
20	0,610	400	0,3721	12,2
40	1,073	1600	1,151329	42,92
60	1,365	3600	1,863225	81,9
80	1,832	6400	3,356224	146,56
100	2,143	10000	4,593449	214,3
∑ 300	∑6986	∑ 22.000	∑ 11,335327	∑ 503,88

Y = ax + b

a = $\frac{n\sum XY - \sum x.\sum y}{n\sum X^2 - (\sum X)^2}$ = -0,0281

b = $\frac{\sum y - (a \times \sum X)}{n}$ = 0,02118

2. Konsentrasi Sampel

y = ax+b

y= 0,0281+ 0,02118

a. Ekstrak i

X = $\frac{y-b}{a} = \frac{1,660-0,02118}{0,0281} =$ 58,3 mg/L

b. Ekstrak ii

X = $\frac{y-b}{a} = \frac{1,834-0,02118}{0,0281} =$ 64,5 mg/L

c. Ekstrak iii

X = $\frac{y-b}{a} = \frac{2,256-0,02118}{0,0281} =$ 79,5mg/L

3. Kadar Flavonoid Total

Kadar b/b = $\frac{Konsentrasi \times V \times FP}{m}$

Keterangan : FP: Faktor Pengenceran

V : Volume Ekstrak (L)

m : Massa Sampel (gram)

a. Ekstrak i

Konsentrasi = 58,3mg/L

V = 0,05 L

m = 0,025

Perhitungan :

$$\frac{72{,}5\,\frac{mg}{L} \times 0{,}05\,L\ \times 10}{0{,}025} = 1.166\ mg/gram$$

b. Ekstrak ii

Konsentrasi = 64,5 mg/L

V = 0,05 L

m = 0,025

Perhitungan :

$$\frac{64{,}5\,\frac{mg}{L} \times 0{,}05\,L\ \times 10}{0{,}025} = 1.290\ mg/gram$$

c. Ekstrak iii

Konsentrasi = 79,5 mg/L

V = 0,05 L

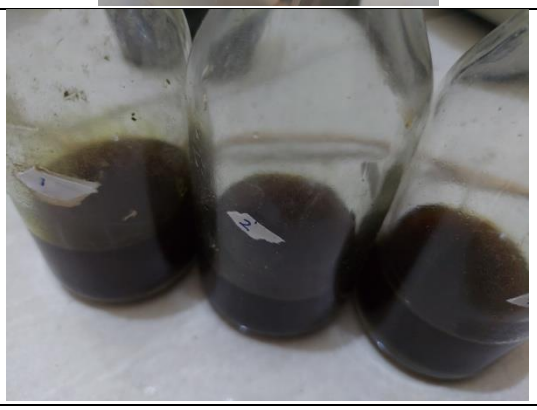
m = 0,025

Perhitungan :

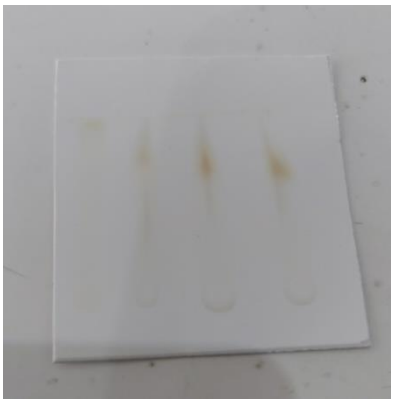
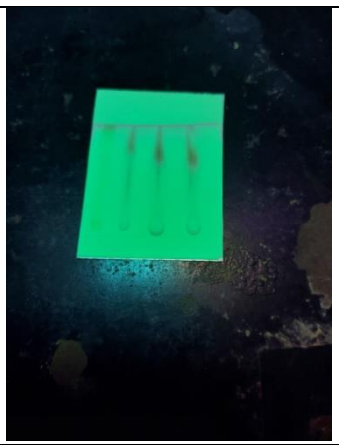
$$\frac{79{,}5\,\frac{mg}{L} \times 0{,}05\,L \times 10}{0{,}025} = 1.590\ mg/gram$$

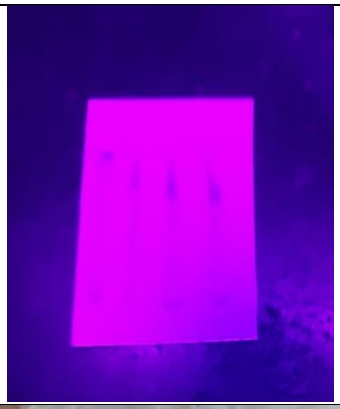
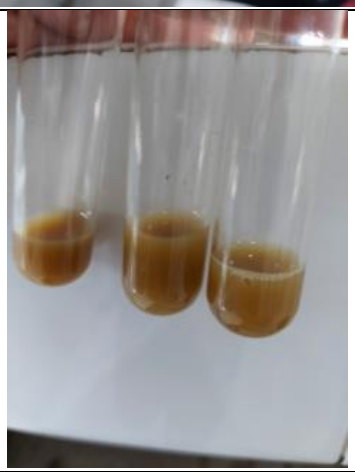
Lampiran 11. Gambar

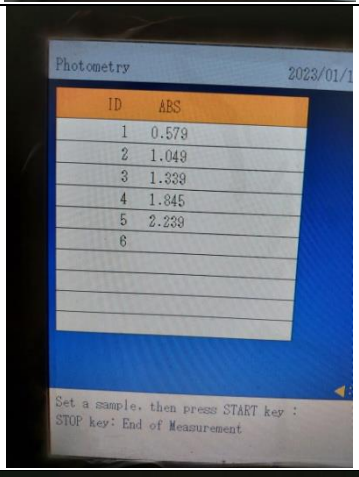
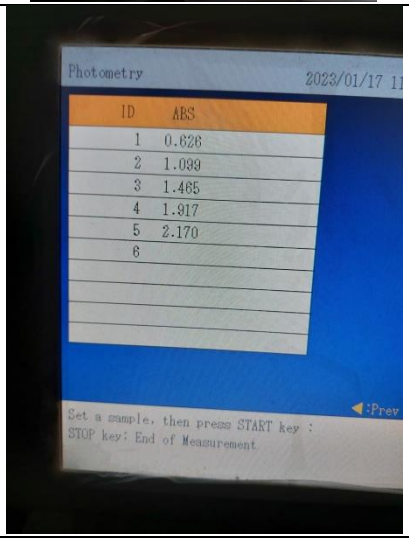
No	Gambar	Keterangan
1		Tanaman Nyamplung
2		Daun Nyamplung
3		Serbuk Simpplisia

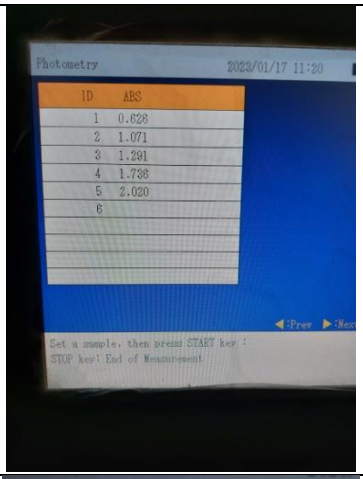
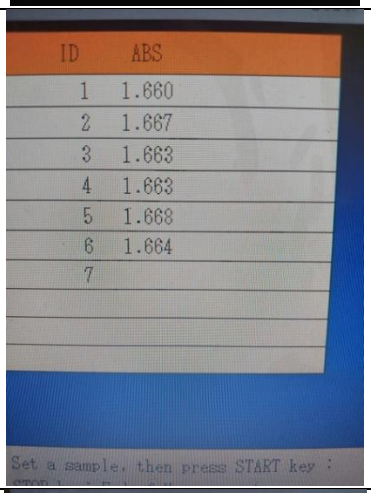
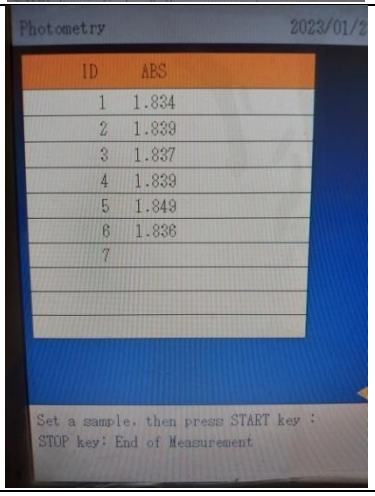
4	 	Ekstraksi
5		Ekstrak

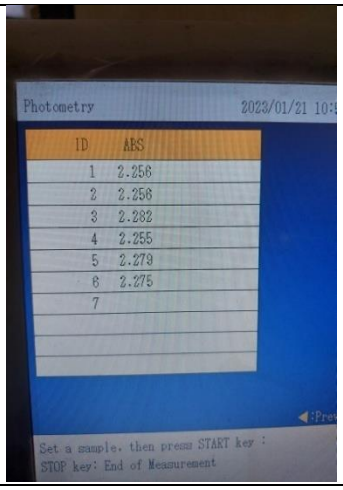
6		Susut Pengeringan i
7		Susut Pengeringan ii
8		Susut Pengeringan iii
9		Bobot Jenis i

10		Bobot Jenis ii
11		Bobot Jenis iii
12		KLT
13		KLT 254

14		KLT 366
15		Uji Shinoda
16		Uji NaOH

17		Uji H_2SO_4
19		Kurva Baku Kuersetin i
		Kurva Baku Kuersetin replikasi ii

			Kurva Baku Kuersetin replikasi iii
20			Absorbansi Ekstrak 1
21			Absorbansi Ekstrak 2

22			Absorbansi Ekstrak 1