

## LAMPIRAN

### Lampiran 1 Determinasi tanaman kayu putih



LEMBAGA ILMU PENGETAHUAN INDONESIA  
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Cibinong, 13 April 2021

Nomor : B-500/IV/DI.01/4/2021  
Lampiran : -  
Perihal : Hasil identifikasi/determinasi Tumbuhan

Kepada Yth.  
Bpk./Ibu/Sdr(i). **Siti Alfiyah**  
NIM : 20170311046  
Universitas Esa Unggul  
Jl. Arjuna Utara No. 9, Kebun Jeruk  
Jakarta 11510

Dengan hormat,

Bersama ini kami sampaikan hasil identifikasi/determinasi tumbuhan yang Saudara kirimkan ke "Herbarium Bogoriense", Bidang Botani Pusat Penelitian Biologi-LIPI Bogor, adalah sebagai berikut :

No.	No. Kol.	Jenis	Suku
1.	Kayu putih	<i>Melaleuca leucadendra</i> (L.) L.	Myrtaceae

Demikian, semoga berguna bagi Saudara.

Koordinator Program Penelitian Botani

Dr. Himmah Rustiami, S.P., M.Sc.  
NIP.197106052000032005



Kepala Pusat Penelitian Biologi LIPI

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## Lampiran 2 Perhitungan rendemen (%)

$$\begin{aligned}(\%) \text{ Rendemen} &= \frac{\text{Jumlah berat ekstrak (g)}}{\text{Jumlah berat serbuk simplisia (g)}} \times 100\% \\ &= \frac{(78,48+25,18) - 78,48(\text{g})}{100 (\text{g})} \times 100\% \\ &= \frac{103,66 - 78,48(\text{g})}{100 (\text{g})} \times 100\% \\ &= \frac{25,18(\text{g})}{100 (\text{g})} \times 100\% \\ &= 25,18\%\end{aligned}$$

Keterangan:

Berat ekstrak = (berat cawan + ekstrak) – berat cawan kosong (g)

Hasil % rendemen ekstrak etanol 96% daun kayu putih yaitu mendapatkan 25,18%

### Lampiran 3 Perhitungan sediaan gel 250 gram

Perhitungan bahan:

$$\begin{aligned} \text{F1} = \text{Ekstrak etanol 96\% daun kayu putih} &= \frac{1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 2,5 \text{ gram} \\ \text{Karbopol 940} &= \frac{0 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 0 \text{ gram} \\ \text{HPMC} &= \frac{2 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 5 \text{ gram} \\ \text{Trietanolamin} &= \text{qs} \\ \text{Propilenglikol} &= \frac{15 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 37,5 \text{ gram} \\ \text{Metil paraben} &= \frac{0,1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 0,25 \text{ gram} \\ \text{Air suling} \quad \quad \quad \text{ad} &= 250 - (2,5+0+5+37,5+0,25) \\ &= 204,75 \text{ gram} \\ \\ \text{F2} = \text{Ekstrak etanol 96\% daun kayu putih} &= \frac{1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 2,5 \text{ gram} \\ \text{Karbopol 940} &= \frac{0,5 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 1,25 \text{ gram} \\ \text{HPMC} &= \frac{1,5 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 3,75 \text{ gram} \\ \text{Trietanolamin} &= \text{qs} \\ \text{Propilenglikol} &= \frac{15 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 37,5 \text{ gram} \\ \text{Metil paraben} &= \frac{0,1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 0,25 \text{ gram} \\ \text{Air suling} \quad \quad \quad \text{ad} &= 250 - (2,5+1,25+3,75+37,5+0,25) \\ &= 204,75 \text{ gram} \\ \\ \text{F3} = \text{Ekstrak etanol 96\% daun kayu putih} &= \frac{1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 2,5 \text{ gram} \\ \text{Karbopol 940} &= \frac{2 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 5 \text{ gram} \\ \text{HPMC} &= \frac{0 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 0 \text{ gram} \\ \text{Trietanolamin} &= \text{qs} \\ \text{Propilenglikol} &= \frac{15 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 37,5 \text{ gram} \\ \text{Metil paraben} &= \frac{0,1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 0,25 \text{ gram} \\ \text{Air suling} \quad \quad \quad \text{ad} &= 250 - (2,5+5+0+37,5+0,25) \\ &= 204,75 \text{ gram} \\ \\ \text{F4} = \text{Ekstrak etanol 96\% daun kayu putih} &= \frac{1 \text{ (g)}}{100 \text{ (\%)}} \times 250\% = 2,5 \text{ gram} \end{aligned}$$

Karbopol 940		$= \frac{1 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 2,5 \text{ gram}$
HPMC		$= \frac{1 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 2,5 \text{ gram}$
Trietanolamin		$= \text{qs}$
Propilenglikol		$= \frac{15 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 37,5 \text{ gram}$
Metil paraben		$= \frac{0,1 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 0,25 \text{ gram}$
Air suling	ad	$= 250 - (2,5+2,5+2,5+37,5+0,25)$ $= 204,75 \text{ gram}$

F5 =	Ekstrak etanol 96% daun kayu putih	$= \frac{1 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 2,5 \text{ gram}$
	Karbopol 940	$= \frac{1,5 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 3,75 \text{ gram}$
	HPMC	$= \frac{0,5 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 1,25 \text{ gram}$
	Trietanolamin	$= \text{qs}$
	Propilenglikol	$= \frac{15 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 37,5 \text{ gram}$
	Metil paraben	$= \frac{0,1 \text{ (g)}}{100 \text{ (%)}} \times 250\% = 0,25 \text{ gram}$
	Air suling	ad $= 250 - (2,5+3,75+1,25+37,5+0,25)$ $= 204,75 \text{ gram}$

#### Lampiran 4 Perhitungan (%) sineresis

Perhitungan sineresis:

**Rumus: Perhitungan perentase (%) sineresis:**

$$\text{Sineresis (\%)} = \frac{\text{berat awal} - \text{berat akhir}}{\text{berat awal}} \times 100\%$$

Hari ke-24:

$$\begin{aligned} \text{F1 = Sineresis (\%)} &= \frac{33,2262 - 32,7967}{33,2262} \times 100\% \\ &= 1,29\% \end{aligned}$$

$$\begin{aligned} \text{F2 = Sineresis (\%)} &= \frac{31,8423 - 31,5220}{31,8423} \times 100\% \\ &= 1,01\% \end{aligned}$$

$$\begin{aligned} \text{F3 = Sineresis (\%)} &= \frac{34,490 - 34,1698}{34,490} \times 100\% \\ &= 0,93\% \end{aligned}$$

$$\begin{aligned} \text{F4 = Sineresis (\%)} &= \frac{32,8978 - 32,5941}{32,8978} \times 100\% \\ &= 0,92\% \end{aligned}$$

$$\begin{aligned} \text{F5 = Sineresis (\%)} &= \frac{33,9466 - 33,6400}{33,9466} \times 100\% \\ &= 0,90\% \end{aligned}$$

Hari ke-48:

$$\begin{aligned} \text{F1 = Sineresis (\%)} &= \frac{32,7967 - 32,6552}{32,7967} \times 100\% \\ &= 0,43\% \end{aligned}$$

$$\begin{aligned} \text{F2 = Sineresis (\%)} &= \frac{31,5220 - 31,3842}{31,5220} \times 100\% \\ &= 0,43\% \end{aligned}$$

$$\begin{aligned} \text{F3 = Sineresis (\%)} &= \frac{34,1698 - 34,0298}{34,1698} \times 100\% \\ &= 0,40\% \end{aligned}$$

$$\begin{aligned} \text{F4 = Sineresis (\%)} &= \frac{32,5941 - 32,4755}{32,5941} \times 100\% \\ &= 0,36\% \end{aligned}$$

$$\begin{aligned} F5 = \text{Sineresis (\%)} &= \frac{33,6400 - 33,5002}{33,6400} \times 100\% \\ &= 0,42\% \end{aligned}$$

Hari ke-72:

$$\begin{aligned} F1 = \text{Sineresis (\%)} &= \frac{32,6552 - 32,6174}{32,6552} \times 100\% \\ &= 0,16\% \end{aligned}$$

$$\begin{aligned} F2 = \text{Sineresis (\%)} &= \frac{31,3842 - 31,3312}{31,3842} \times 100\% \\ &= 0,16\% \end{aligned}$$

$$\begin{aligned} F3 = \text{Sineresis (\%)} &= \frac{34,0298 - 33,9621}{34,0298} \times 100\% \\ &= 0,21\% \end{aligned}$$

$$\begin{aligned} F4 = \text{Sineresis (\%)} &= \frac{32,4755 - 32,4236}{32,4755} \times 100\% \\ &= 0,16\% \end{aligned}$$

$$\begin{aligned} F5 = \text{Sineresis (\%)} &= \frac{33,5002 - 33,4442}{33,5002} \times 100\% \\ &= 0,17\% \end{aligned}$$

**Lampiran 5** Hasil ANOVA fit statistik SLD

**ANOVA for Quadratic model**

**Response 1: PH**

Source	Sum of Squares	df	Mean Square	F-value	p-value
Model	0.4299	2	0.2149	35.42	<b>0.0011</b> significant
<sup>Q</sup> Linear Mixture	0.0722	1	0.0722	11.90	0.0182
AB	0.3577	1	0.3577	58.95	0.0006
Residual	0.0303	5	0.0061		
Lack of Fit	0.0303	2	0.0152		
Pure Error	0.0000	3	0.0000		
Cor Total	0.4602	7			

**Fit Statistics**

Std. Dev.	0.0779	R <sup>2</sup>	<b>0.9341</b>
Mean	5.77	Adjusted R <sup>2</sup>	<b>0.9077</b>
C.V. %	1.35	Predicted R <sup>2</sup>	<b>0.8724</b>
		Adeq Precision	12.5868

**Model Comparison Statistics**

PRESS	<b>0.0587</b>
-2 Log Likelihood	-21.90
BIC	-17.74
AICc	-15.50

**ANOVA for Cubic model**

**Response 2: Daya lekat**

Source	Sum of Squares	df	Mean Square	F-value	p-value
Model	1.61	3	0.5357	266.78	<b>&lt; 0.0001</b> significant
<sup>Q</sup> Linear Mixture	0.2289	1	0.2289	114.02	0.0004
AB	0.0013	1	0.0013	0.6505	0.4652
AB(A-B)	1.38	1	1.38	685.67	<b>&lt; 0.0001</b>
Residual	0.0080	4	0.0020		
Lack of Fit	0.0080	1	0.0080		

Pure Error	0.0000	3	0.0000
Cor Total	1.61	7	

### Fit Statistics

Std. Dev.	0.0448	R <sup>2</sup>	0.9950
Mean	8.31	Adjusted R <sup>2</sup>	0.9913
C.V. %	0.5395	Predicted R <sup>2</sup>	0.9641
		Adeq Precision	56.4941

### Model Comparison Statistics

PRESS	0.0580
-2 Log Likelihood	-32.53
BIC	-26.29
AICc	-20.53

### ANOVA for Quadratic model

#### Response 3: Daya sebar

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	0.0862	2	0.0431	17.17	0.0058	significant
<sup>U</sup> Linear Mixture	0.0450	1	0.0450	17.93	0.0082	
AB	0.0412	1	0.0412	16.42	0.0098	
Residual	0.0125	5	0.0025			
Lack of Fit	0.0125	2	0.0063			
Pure Error	0.0000	3	0.0000			
Cor Total	0.0987	7				

### Fit Statistics

Std. Dev.	0.0501	R <sup>2</sup>	0.8729
Mean	5.34	Adjusted R <sup>2</sup>	0.8221
C.V. %	0.9386	Predicted R <sup>2</sup>	0.7545
		Adeq Precision	8.8201

### Model Comparison Statistics

PRESS	0.0242
-2 Log Likelihood	-28.96
BIC	-24.80
AICc	-22.56



## Lampiran 6 Analisis data SPSS *one simple test t*

```
T-TEST
  /TESTVAL=6.10
  /MISSING=ANALYSIS
  /VARIABLES=HASIL
  /CRITERIA=CI (.95) .
```

### T-Test

[DataSet0]

#### One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
HASIL PH	4	6.1050	.06557	.03279

#### One-Sample Test

Test Value = 6.10

	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
HASIL PH	.152	3	.888	.00500	-.0993	.1093

T-TEST  
 /TESTVAL=8.31  
 /MISSING=ANALYSIS  
 /VARIABLES=HASIL  
 /CRITERIA=CI(.95).

**T-Test**

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
HASIL DAYA LEKAT	4	7.0625	1.12022	.56011

**One-Sample Test**

Test Value = 8.31

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
HASIL DAYA LEKAT	-2.227	3	.112	-1.24750	-3.0300	.5350

T-TEST  
 /TESTVAL=5.51  
 /MISSING=ANALYSIS  
 /VARIABLES=HASIL  
 /CRITERIA=CI(.95).

**T-Test**

**One-Sample Statistics**

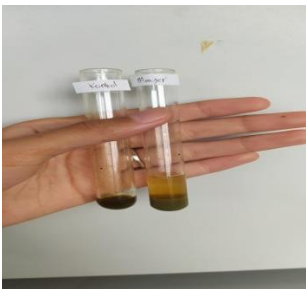
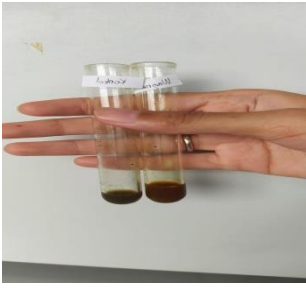
	N	Mean	Std. Deviation	Std. Error Mean
HASIL DAYA SEBAR	4	5.0000	.33665	.16833


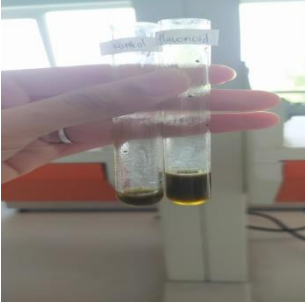
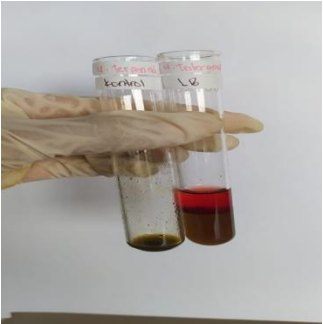

**One-Sample Test**

	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
HASIL DAYA SEBAR	-3.030	3	.056	-.51000	-1.0457	.0257

Test Value = 5.51


**Lampiran 7** Dokumentasi skrining fitokimia




No	Gambar	Keterangan
1	<p>- Perekasi mayer</p>  <p>- Perekasi wegner</p> 	<p>Uji alkaloid</p> <ul style="list-style-type: none"> <li>- Perekasi mayer (negatif)</li> <li>- Perekasi wegner (negatif)</li> </ul>
2		Uji fenolik (positif)




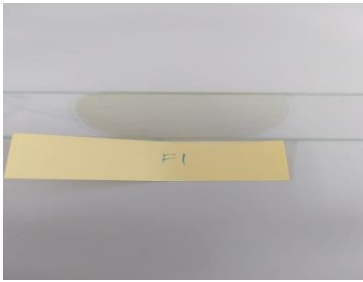
		
3		Uji flavonoid (positif)
4		Uji triterpenoid steroid (positif)
5		Uji saponin (positif)

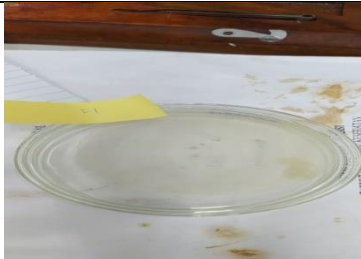


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**Lampiran 8** Dokumentasi lain-lain

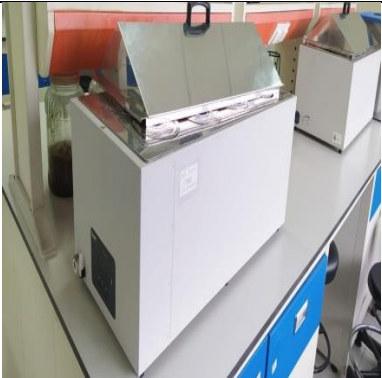



<b>No</b>	<b>Gambar</b>	<b>Keterangan</b>
1		Timbangan analitik
2		Serbuk simplisia daun kayu putih

		
3		<p>Proses maserasi menggunakan bejana maserator</p>
4		<p>Filtrat ekstrak etanol 96% daun kayu putih yang sudah disaring</p>
5		<p>Filtrat ekstrak etanol 96% daun kayu putih yang diuapkan menggunakan <i>waterbath</i></p>

		
6		<p>Hasil ekstrak etanol 96% daun kayu putih</p>
6		<p>Sediaan gel ekstrak etanol 96% daun kayu putih</p>
7		<p>Uji homogenitas</p>
8		<p>Uji daya lekat</p>

		
9		Uji daya sebar
10		Uji viskositas
12		Alat <i>waterbath</i>



		
<p><b>14</b></p>		<p><i>Alat hot plate magnetic stirrer</i></p>
<p><b>15</b></p>		<p><i>Alat pH meter</i></p>
<p><b>16</b></p>		<p><i>Grinder</i></p>