LAMPIRAN

Lampiran 1 Determinasi tanaman cocor bebek

BRIN
BADAN RISET DAN INOVASI NASIONAL

PUSAT RISET BIOSISTEMATIKA DAN EVOLUSI

Jl. Raya Jakarta-Bogor Km.46, Cibinong, Kabupaten Bogor, Jawa Barat 16911
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https://www.brin.go.id

Nomor : B-622/V/DI.05.07/3/2022 Cibinong, 14 Maret 2022
Lampiran : -
Perihal : Hasil identifikasi/determinasi Tumbuhan

Yth.
Bpk./Ibu/Sdr(i). **Monika Anggrainy**
NPM : 20180311138
Universitas Esa Unggul
Jakarta

Bersama ini kami sampaikan hasil identifikasi/determinasi tumbuhan yang Saudara kirimkan ke "Herbarium Bogoriense", Pusat Riset Biosistematika dan Evolusi BRIN Cibinong, adalah sebagai berikut :

No.	No. Kol.	Jenis	Suku
1.	Daun Cocor Bebek	*Kalanchoe pinnata* (Lam.) Pers.	Crassulaceae

Demikian, semoga berguna bagi Saudara.

a.n. Kepala Pusat Riset Biosistematika dan Evolusi
Badan Riset dan Inovasi Nasional

BADAN RISET DAN INOVASI NASIONAL
ORGANISASI RISET ILMU PENGETAHUAN HAYATI
REPUBLIK INDONESIA

Dr. Anang Setiawan Achmadi, S.KH., M.Sc

D:\Identifikasi Mahasiswa 2022\Monika Anggrainy.docx\AK-YR-Gede-AK

Lampiran 2 Perhitungan rendemen simplisia (%)

(%) Rendemen $= \frac{Jumlah\ berat\ simplisia\ kering\ (g)}{Jumlah\ berat\ simplisia\ basah\ (g)}$ x 100%

$= \frac{1.070\ (g)}{4.000\ (g)}$ x 100%

= 26,75%

Lampiran 3 Perhitungan rendemen ekstrak (%)

$$\text{(\%) Rendemen} = \frac{Jumlah\ berat\ ekstrak\ (g)}{Jumlah\ berat\ serbuk\ simplisia\ (g)} \text{ x } 100\%$$

$$= \frac{Jumlah\ berat\ ekstrak\ (g)}{Jumlah\ berat\ serbuk\ simplisia\ (g)} \text{ x } 100\%$$

$$= \frac{(163{,}53+157{,}19)-163{,}53\ (g)}{300\ (g)} \text{ x } 100\%$$

$$= \frac{320{,}72-163{,}53\ (g)}{300\ (g)} \text{ x } 100\%$$

$$= \frac{157{,}19\ (g)}{300\ (g)} \text{ x } 100\%$$

$$= 52{,}39\%$$

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

Berdasarkan perhitungan di atas maka hasil % rendemen ekstrak etanol daun cocor bebek yaitu 52,39%

Lampiran 4 Perhitungan sediaan gel 500 gram

Perhitungan bahan:

F1 = Ekstrak etanol daun cocor bebek = $\frac{2,5\ (g)}{100\ (\%)}$ x 500% = 12,5 gram

Karbopol 940 = $\frac{0,85\ (g)}{100\ (\%)}$ x 500% = 4,25 gram

Trietanolamin = $\frac{0,15\ (g)}{100\ (\%)}$ x 500% = 0,75 gram

Metil paraben = $\frac{0,2\ (g)}{100\ (\%)}$ x 500% = 1 gram

Propilenglikol = $\frac{15\ (g)}{100\ (\%)}$ x 500% = 75 gram

Aquades = 500 – (12,5g+4,25g+0,75 g+1 g+75 g)
= 406,5 gram

F2 = Ekstrak etanol daun cocor bebek = $\frac{2,5\ (g)}{100\ (\%)}$ x 500% = 12,5 gram

Karbopol 940 = $\frac{0,8\ (g)}{100\ (\%)}$ x 500% = 4 gram

Trietanolamin = $\frac{2\ (g)}{100\ (\%)}$ x 500% = 1 gram

Metil paraben = $\frac{0,2\ (g)}{100\ (\%)}$ x 500% = 1 gram

Propilenglikol = $\frac{15\ (g)}{100\ (\%)}$ x 500% = 75 gram

Aquades = 500 – (12,5g+4 g+1 g+1 g+75 g)
= 406,5 gram

F3 = Ekstrak etanol daun cocor bebek = $\frac{2,5\ (g)}{100\ (\%)}$ x 500% = 12,5 gram

Karbopol 940 = $\frac{0,875\ (g)}{100\ (\%)}$ x 500% = 4,375 gram

Trietanolamin = $\frac{0,125\ (g)}{100\ (\%)}$ x 500% = 0,625 gram

Metil paraben = $\frac{0,2\ (g)}{100\ (\%)}$ x 500% = 1 gram

Propilenglikol = $\frac{15\ (g)}{100\ (\%)}$ x 500% = 75 gram

Aquades = 500 – (12,5g+4,375 g+0,625 g+1 g+75g)
= 406,5 gram

F4 = Ekstrak etanol daun cocor bebek = $\frac{2,5\ (g)}{100\ (\%)}$ x 500% = 12,5 gram

Karbopol 940 = $\frac{0,9\ (g)}{100\ (\%)}$ x 500% = 4,5 gram

	Trietanolamin	$= \frac{0{,}1\ (g)}{100\ (\%)}$ x 500% = 0,5 gram
	Metil paraben	$= \frac{0{,}2\ (g)}{100\ (\%)}$ x 500% = 1 gram
	Propilenglikol	$= \frac{15\ (g)}{100\ (\%)}$ x 500% = 75 gram
	Aquades	= 500 – (12,5g+ 4,5 g+0,5 g+1 g+75g) = 406,5 gram

F5 =	Ekstrak etanol daun cocor bebek	$= \frac{2{,}5\ (g)}{100\ (\%)}$ x 500% = 12,5 gram
	Karbopol 940	$= \frac{0{,}825\ (g)}{100\ (\%)}$ x 500% = 4,125 gram
	Trietanolamin	$= \frac{0{,}175\ (g)}{100\ (\%)}$ x 500% = 0,875 gram
	Metil paraben	$= \frac{0{,}2\ (g)}{100\ (\%)}$ x 500% = 1 gram
	Propilenglikol	$= \frac{15\ (g)}{100\ (\%)}$ x 500% = 75 gram
	Aquades	= 500 – (12,5g+ 4,125g+0,875g+1 g+75g) = 406,5 gram

Lampiran 5 Perhitungan (%) sineresis

Perhitungan sineresis:

Rumus: Perhitungan persentase (%) sineresis:

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

Jam ke-24:

F1 = Sineresis (%) = $\frac{61,81-61,22}{61,81}$ x 100%
= 0,95%

F2 = Sineresis (%) = $\frac{55,90-55,38}{55,90}$ x 100%
= 0,93%

F3 = Sineresis (%) = $\frac{58,59-58,03}{58,59}$ x 100%
= 0,95%

F4 = Sineresis (%) = $\frac{57,37-56,85}{57,37}$ x 100%
= 0,90%

F5 = Sineresis (%) = $\frac{59,74-59,19}{59,74}$ x 100%
= 0,92%

Jam ke-48:

F1 = Sineresis (%) = $\frac{61,81-60,91}{61,81}$ x 100%
= 1,47%

F2 = Sineresis (%) = $\frac{55,90-55,14}{55,90}$ x 100%
= 1,35%

F3 = Sineresis (%) = $\frac{58,59-57,76}{58,59}$ x 100%
= 1,41%

F4 = Sineresis (%) = $\frac{57,37-56,61}{57,37}$ x 100%
= 1,32%

F5 = Sineresis (%) = $\frac{59,74-58,91}{59,74}$ x 100%

= 1,38%

Jam ke-72:

F1 = Sineresis (%) $= \frac{61,81-60,78}{61,81}$ x 100%
= 1,66%

F2 = Sineresis (%) $= \frac{55,90-55,00}{55,90}$ x 100%
= 1,61%

F3 = Sineresis (%) $= \frac{58,59-57,64}{58,59}$ x 100%
= 1,62%

F4 = Sineresis (%) $= \frac{57,37-56,49}{57,37}$ x 100%
= 1,53%

F5 = Sineresis (%) $= \frac{59,74-58,75}{59,74}$ x 100%
= 1,65%

Lampiran 6 Hasil formula yang optimum

Number	Karbopol 940	Trietanolamin	pH (4,5-6,5)	Daya sebar (5-7)	Daya lekat (> 1)	Desirability	
1	**0.800**	**0.200**	**5.468**	**6.765**	**1.826**	**1.000**	**Selected**
2	0.900	0.100	4.748	5.810	4.156	1.000	
3	0.850	0.150	4.595	6.287	3.274	1.000	
4	0.875	0.125	4.543	6.049	3.548	1.000	
5	0.825	0.175	4.903	6.526	2.858	1.000	
6	0.857	0.143	4.555	6.221	3.344	1.000	
7	0.820	0.180	4.988	6.570	2.729	1.000	
8	0.818	0.182	5.027	6.589	2.666	1.000	
9	0.895	0.105	4.686	5.858	3.983	1.000	
10	0.827	0.173	4.868	6.507	2.909	1.000	
11	0.844	0.156	4.645	6.344	3.206	1.000	
12	0.897	0.103	4.715	5.834	4.064	1.000	
13	0.856	0.144	4.557	6.226	3.339	1.000	
14	0.885	0.115	4.594	5.954	3.723	1.000	
15	0.802	0.198	5.412	6.745	1.947	1.000	
16	0.847	0.153	4.620	6.318	3.238	1.000	
17	0.829	0.171	4.844	6.492	2.944	1.000	
18	0.854	0.146	4.572	6.254	3.310	1.000	
19	0.866	0.134	4.532	6.132	3.439	1.000	
20	0.815	0.185	5.109	6.626	2.529	1.000	
21	0.832	0.168	4.789	6.458	3.019	1.000	
22	0.821	0.179	4.982	6.567	2.738	1.000	
23	0.807	0.193	5.278	6.696	2.217	1.000	
24	0.888	0.112	4.620	5.922	3.798	1.000	
25	0.890	0.110	4.634	5.907	3.839	1.000	
26	0.869	0.131	4.532	6.111	3.464	1.000	
27	0.852	0.148	4.583	6.271	3.291	1.000	
28	0.855	0.145	4.564	6.240	3.324	1.000	
29	0.817	0.183	5.059	6.604	2.613	1.000	
30	0.813	0.187	5.142	6.641	2.471	1.000	
31	0.860	0.140	4.544	6.193	3.373	1.000	
32	0.870	0.130	4.533	6.094	3.485	1.000	
33	0.896	0.104	4.694	5.852	4.005	1.000	
34	0.883	0.117	4.584	5.968	3.692	1.000	
35	0.841	0.159	4.675	6.372	3.168	1.000	
36	0.804	0.196	5.374	6.732	2.026	1.000	
37	0.863	0.137	4.536	6.162	3.406	1.000	
38	0.862	0.138	4.539	6.177	3.390	1.000	
39	0.881	0.119	4.569	5.992	3.644	1.000	
40	0.809	0.191	5.241	6.682	2.288	1.000	
41	0.839	0.161	4.693	6.388	3.144	1.000	
42	0.822	0.178	4.951	6.552	2.786	1.000	
43	0.811	0.189	5.196	6.664	2.372	1.000	
44	0.873	0.127	4.538	6.069	3.518	1.000	

Lampiran 7 Hasil ANOVA fit statistik Simplex Lattice Design

ANOVA for Quadratic model

Response 1: PH

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	1.00	2	0.5016	22.88	0.0030	significant
(1)Linear Mixture	0.5832	1	0.5832	26.60	0.0036	
AB	0.4200	1	0.4200	19.16	0.0072	
Residual	0.1096	5	0.0219			
Lack of Fit	0.0890	2	0.0445	6.46	0.0818	Not significant
Pure Error	0.0206	3	0.0069			
Cor Total	1.11	7				

Fit Statistics

Std. Dev.	0.1481	R^2	0.9015
Mean	4.88	Adjusted R^2	0.8621
C.V. %	3.03	Predicted R^2	0.7800
		Adeq Precision	10.2017

ANOVA for Linear model

Response 2: Daya Sebar

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	1.03	1	1.03	100.17	< 0.0001	significant
(1)Linear Mixture	1.03	1	1.03	100.17	< 0.0001	
Residual	0.0615	6	0.0103			
Lack of Fit	0.0315	3	0.0105	1.05	0.4842	Not significant
Pure Error	0.0300	3	0.0100			
Cor Total	1.09	7				

Fit Statistics

Std. Dev.	0.1013	R^2	0.9435
Mean	6.29	Adjusted R^2	0.9341
C.V. %	1.61	Predicted R^2	0.8860
		Adeq Precision	18.8723

ANOVA for Cubic model

Response 3: Daya Lekat

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	5.79	3	1.93	465.63	<0.0001	significant
(1)Linear Mixture	5.57	1	5.57	1342.08	<0.0001	
AB	0.1271	1	0.1271	30.63	0.0052	
AB(A-B)	0.1003	1	0.1013	24.18	0.0079	

Residual	0.0166	4	0.0041			
Lack of Fit	0.0004	1	0.0004	0.0820	0.7933	Not significant
Pure Error	0.0161	3	0.0054			
Cor Total	5.81	7				

Fit Statistics

Std. Dev.	0.2066	R^2	0.9971
Mean	4.71	Adjusted R^2	0.9950
C.V. %	4.39	Predicted R^2	0.9929
		Adeq Precision	51.1637

Lampiran 8 Analisis data SPSS *one sample t-test*

```
T-TEST
/TESTVAL=5.47
/MISSING=ANALYSIS
/VARIABLES=HASIL
/CRITERIA=CI(.95).
```

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
HASIL PH	4	5.4975	.08958	.04479

One-Sample Test

Test Value = 5.47

	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
HASIL PH	.614	3	.583	.02750	-.1150	.1700

```
T-TEST
/TESTVAL=6.77
/MISSING=ANALYSIS
/VARIABLES=HASIL
/CRITERIA=CI(.95).
```

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
HASIL DAYA SEBAR	4	6.650	.1732	.0866

One-Sample Test

Test Value = 6.77

	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
HASIL DAYA SEBAR	-1.386	3	.260	-.1200	-.396	.156

```
T-TEST
/TESTVAL=1.83
/MISSING=ANALYSIS
/VARIABLES=HASIL
/CRITERIA=CI(.95).
```

T-Test

One-Sample Statistics

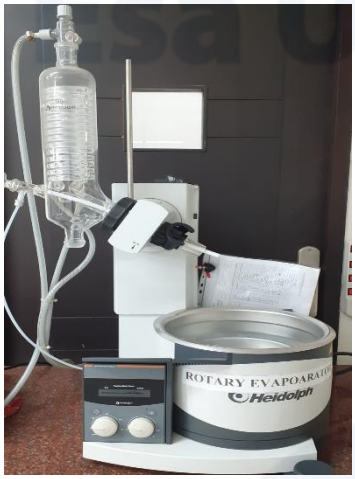
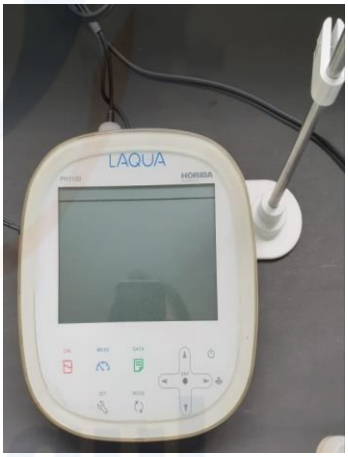
	N	Mean	Std. Deviation	Std. Error Mean
HASIL DAYA LEKAT	4	2.1450	.25013	.12507

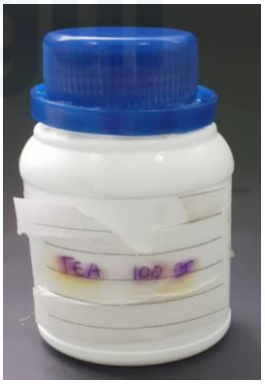
One-Sample Test

Test Value = 1.83

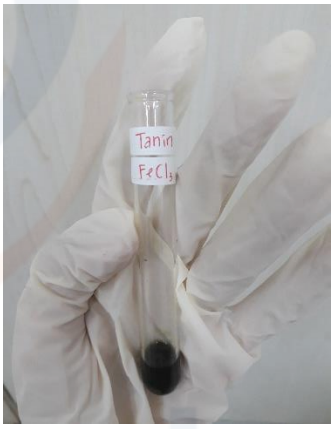
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
HASIL DAYA LEKAT	2.519	3	.086	.31500	-.0830	.7130

Lampiran 9 Alat dan bahan

 Rotary evaporator	 Neraca analitik
 Viskometer digital	 pH meter
 Magnetic stirrer	 Blender

 Karbopol 940	 Trietanolamin
 Propilenglikol	 Metil paraben

Lampiran 10 Dokumentasi skrining fitokimia

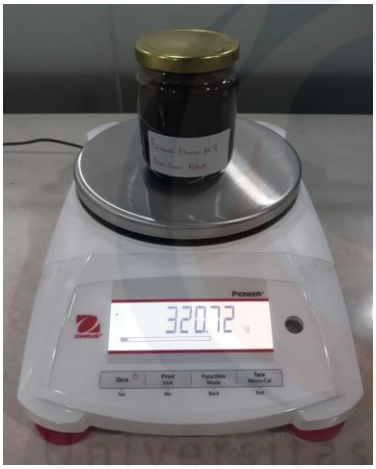
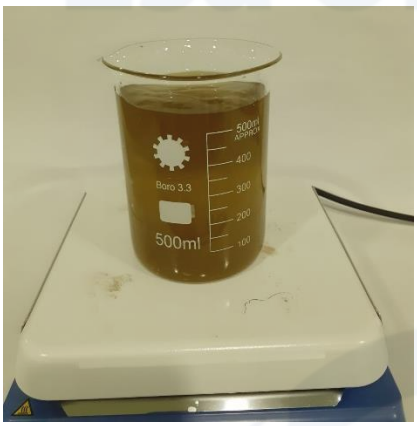
 Alkaloid pereaksi Mayer (Negatif)	 Alkaloid pereaksi Wegener (Negatif)
 Flavonoid (Positif)	 Tanin (Positif)
 Steroid (Negatif)	 Saponin (Positif)

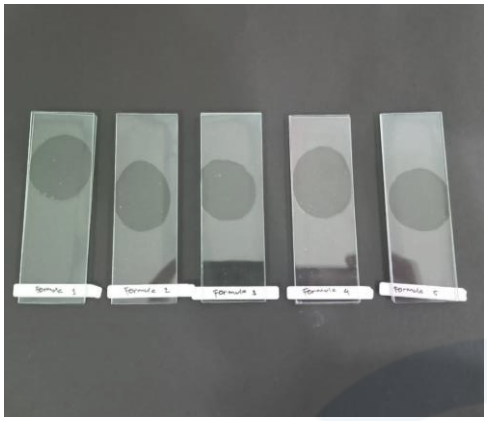
Lampiran 11 Dokumentasi lain-lain

<table>
<tr>
<td> 
Daun cocor bebek</td>
<td> 
Proses pencucian</td>
</tr>
<tr>
<td> 

Penyerbukan simplisia kering</td>
<td> 
Serbuk simplisia daun cocor bebek</td>
</tr>
<tr>
<td> 
Proses ekstraksi maserasi</td>
<td> 

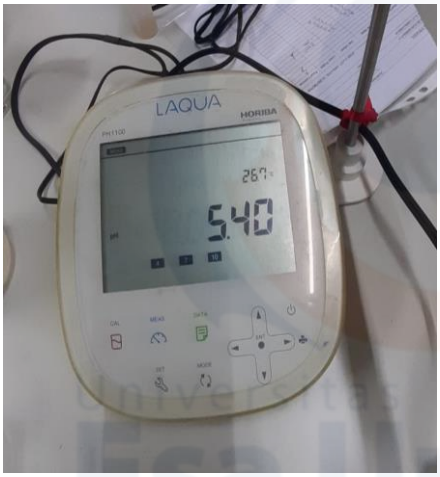
Filtrat ekstrak etanol daun cocor bebek yang sudah di saring</td>
</tr>
</table>

 Penguapan pelarut dengan alat *rotary evaporator*	 Berat wadah ekstrak
 Penimbangan bobot ekstrak kental daun cocor bebek	 Ekstrak kental daun cocor bebek
 Pembuatan gel ekstrak etanol daun cocor bebek	 Gel ekstrak etanol daun cocor bebek

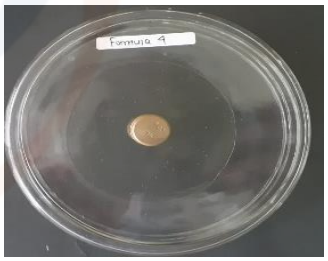


Uji homogenitas

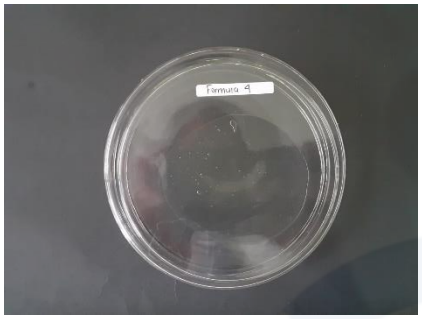
Uji viskositas gel



Uji pH gel



Uji daya sebar gel



Uji daya lekat gel

Uji sineresis gel