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Lampiran 1. Hasil determinasi tanaman belimbing wuluh (*Averrhoa bilimbi* L.)

UNIVERSITAS SETIA BUDI

UPT-LABORATORIUM

Nomor : 139/DET/UPT-LAB/03.03.2021
Hal : Hasil determinasi tumbuhan
Lamp. : -

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NIM : 23175364A
Alamat : Program Studi S-1 Farmasi, Universitas Setia Budi, Surakarta
Nama sampel : Belimbing wuluh (*Averrhoa bilimbi* L.)

HASIL DETERMINASI TUMBUHAN

Klasifikasi :
Kingdom : Plantae
Super divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Magnoliopsida
Ordo : Geraniales
Familia : Oxalidaceae
Genus : Averrhoa
Species : *Averrhoa bilimbi* L

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 – 15b. golongan 9. 197b – 208b – 219b – 220b – 224b – 225b – 227b – 229b – 230b – 234b – 235b – 236b – 237b – 238a. familia 61. Oxalidaceae. A.1. Averrhoa 1a. *Averrhoa bilimbi* L.

Deskripsi:
Habitus : Pohon, 5 – 10 meter.
Akar : Tunggang.

Jl. Letjen Sutoyo, Mojosongo-Solo 57127 Telp. 0271-852518, Fax. 0271-853275
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Batang : Bulat, berkayu, monopodial, tegak, terdapat tanda bekas daun bentuk ginjal atau jantung.

Daun : Daun majemuk menyirip ganjil. Daun penumpu tidak ada. Anak daun bulat telur memanjang, ujung meruncing, pangkal membulat, tepi rata, panjang 2,7 – 4,5 cm, lebar 1,7 – 2 cm, ke arah ujung poros lebih besar, permukaan bawah hijau muda.

Bunga : Malai bunga menggantung,panjang 5 – 20 cm. Bunga semuanya dengan panjang tangkai putik yang sama. Kelopak panjang lk 6 mm. Daun mahkota tidak atau hampir bergandengan, bentuk spatel atau lanset, dengan pangkal yang pucat. 5 benang sari di depan daun mahkota mereduksi menjadi staminodia.

Buah : Buni bulat persegi membulat tumpul, kuning hijau, panjang 4 – 6,5 cm, mengandung banyak air, terasa sangat masam.

Surakarta, 3 Maret 2021

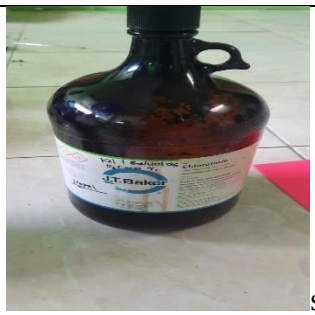
Kepala UPT-LAB	Penanggung jawab
Universitas Setia Budi	Determinasi Tumbuhan
Asik Gunawan, Amdk	Dra. Dewi Sulistyawati. M.Sc.

Jl. Letjen Sutoyo, Mojosongo-Solo 57127 Telp. 0271-852518, Fax. 0271-853275
Homepage : www.setiabudi.ac.id, e-mail : Info@setiabudi.ac.id

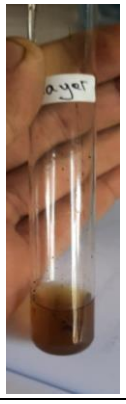
Lampiran 2. Gambaran alat dan bahan penelitian

<table>
<tr>
<td>a. serbuk daun belimbing wuluh
  </td>
<td>b. natrium lauril sulfat
  </td>
<td>c. Cocamide DEA
  </td>
</tr>
<tr>
<td>d. jamur Candida albicans
  </td>
<td>e. moisture balance
  </td>
<td>f. ekstrak
  </td>
</tr>
<tr>
<td>g. Inkubator
  </td>
<td>h. rotary evaporator
  </td>
<td></td>
</tr>
</table>

Lampiran 3. Gambar proses ekstraksi

a. pengumpulan bahan	b. proses maserasi	s maserasi
		

Lampiran 4. Gambar proses pengujian kandunggan senyawa kimia ekstrak daun belimbing wuluh

a. Uji flavonoid	b. Uji Tanin
	
b. Uji Saponin	**d. Uji Alkaloid**
	

Lampiran 5. Gambar proses pengujian mutu fisik sediaan sampo ekstrak daun belimbing wuluh dengan variasi konsentrasi natrium lauril sulfat

a. Uji pH	b. Uji Viskositas	c. Uji Tinggi Busa
		

Lampiran 6. Data hasil pengujian pH

Formula	Hari ke	R2	R2	R3	Rata-rata	SD
1	1	5,1	5,51	5,55	5,39	0,25
	21	5,08	5,52	5,53	5,38	0,26
2	1	5,65	5,69	5,7	5,68	0,03
	21	5,62	5,7	5,69	5,67	0,04
3	1	5,8	5,79	6	5,86	0,12
	21	5,85	5,76	6,1	5,90	0,18
4	1	6	5,59	6,2	5,93	0,31
	21	6,1	5,6	6,18	5,96	0,31
5	1	6,3	6,3	6,27	6,29	0,02
	21	6,28	6,2	6,2	6,23	0,05
6	1	6,08	6,13	7,2	6,47	0,63
	21	6,3	6,11	7,17	6,53	0,57

Tinggi Busa

Formula	Hari	1	2	3	Rata-rata	SD
1	1	2,8	4,3	4,5	3,87	0,93
	21	2,7	4,4	4,4	3,83	0,98
2	1	4,2	4,6	4,3	4,37	0,21
	21	4,1	4,5	4,2	4,27	0,21
3	1	4,7	4,9	6,6	5,40	1,04
	21	4,8	5	6,4	5,40	0,87
4	1	3,3	3	3,1	3,13	0,15
	21	3,2	3,1	3	3,10	0,10

5	1	3,5	3,7	3,3	3,50	0,20
	21	3,4	3,8	3,2	3,47	0,31
6	1	3,9	4,1	3,7	3,90	0,20
	21	4	4	3,9	3,97	0,06

Viskositas

Viskositas		1	2	3		
1	1	50	60	50	53,3	5,77
	21	55	65	53	57,7	6,43
2	1	60	70	65	65,0	5,00
	21	60	70	60	63,3	5,77
3	1	95	85	95	91,7	5,77
	21	90	80	90	86,7	5,77
4	1	90	85	95	90,0	5,00
	21	85	80	90	85,0	5,00
5	1	95	105	90	96,7	7,64
	21	90	95	85	90,0	5,00
6	1	120	115	220	151,7	59,23
	21	117	112	223	150,7	62,69

Lampiran 7. Hasil analisis statistik uji pH, uji viskositas, uji tinggi busa, dan uji aktivitas antijamur

Uji pH

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	18	5.9367	.45357	5.10	7.20
pH21	18	5.9439	.45332	5.08	7.17

One-Sample Kolmogorov-Smirnov Test

		pH	pH21
N		18	18
Normal Parameters[a,b]	Mean	5.9367	5.9439
	Std. Deviation	.45357	.45332
Most Extreme Differences	Absolute	.156	.161
	Positive	.156	.161
	Negative	-.118	-.135
Test Statistic		.156	.161

Asymp. Sig. (2-tailed)	.200[c,d]	.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Oneway

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
pH	Between Groups	2.349	5	.470	4.911	.011
	Within Groups	1.148	12	.096		
	Total	3.497	17			
pH21	Between Groups	2.455	5	.491	5.672	.007
	Within Groups	1.039	12	.087		
	Total	3.493	17			

Uji Viskositas

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Viskositas	18	91.6667	38.23303	50.00	220.00
Viskositas21	18	88.8889	36.20024	55.00	215.00

One-Sample Kolmogorov-Smirnov Test

		Viskositas	Viskositas21
N		18	18
Normal Parameters[a,b]	Mean	91.6667	88.8889
	Std. Deviation	38.23303	36.20024
Most Extreme Differences	Absolute	.197	.213
	Positive	.197	.213
	Negative	-.138	-.175
Test Statistic		.197	.213
Asymp. Sig. (2-tailed)		.063[c]	.030[c]
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			

Oneway

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Viskositas	Between Groups	17433.333	5	3486.667	5.641	.007
	Within Groups	7416.667	12	618.056		
	Total	24850.000	17			
Viskositas21	Between Groups	14827.778	5	2965.556	4.777	.012
	Within Groups	7450.000	12	620.833		
	Total	22277.778	17			

Uji Tinggi Busa

NPar Tests

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
TinggiBusa	18	4.0278	.89298	2.80	6.60
TinggiBusa21	18	3.9944	.86940	2.70	6.40

One-Sample Kolmogorov-Smirnov Test			
		TinggiBusa	TinggiBusa21
N		18	18
Normal Parameters[a,b]	Mean	4.0278	3.9944
	Std. Deviation	.89298	.86940
Most Extreme Differences	Absolute	.115	.122
	Positive	.115	.122
	Negative	-.085	-.078
Test Statistic		.115	.122
Asymp. Sig. (2-tailed)		.200[c,d]	.200[c,d]
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			
d. This is a lower bound of the true significance.			

Oneway

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
TinggiBusa	Between Groups	9.356	5	1.871	5.346	.008

	Within Groups	4.200	12	.350		
	Total	13.556	17			
TinggiBusa21	Between Groups	8.916	5	1.783	5.440	.008
	Within Groups	3.933	12	.328		
	Total	12.849	17			

Uji Aktivitas Antijamur

NPar Tests

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
DayaHambat	21	10.8571	10.49741	.00	32.00

One-Sample Kolmogorov-Smirnov Test		
		DayaHambat
N		21
Normal Parameters[a,b]	Mean	10.8571
	Std. Deviation	10.49741
Most Extreme Differences	Absolute	.224
	Positive	.224
	Negative	-.151
Test Statistic		.224
Asymp. Sig. (2-tailed)		.007[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Oneway

ANOVA					
DayaHambat					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2163.005	6	360.501	123.379	.000
Within Groups	40.907	14	2.922		
Total	2203.911	20			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DayaHambat						
Tukey HSD						
		Mean Difference			95% Confidence Interval	
(I) Formula	(J) Formula	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
1	2	-4.40000	1.39568	.079	-9.1657	.3657
	3	-6.66667*	1.39568	.004	-11.4324	-1.9010
	4	10.90000*	1.39568	.000	6.1343	15.6657
	5	10.86667*	1.39568	.000	6.1010	15.6324
	6	10.66667*	1.39568	.000	5.9010	15.4324
	7	-17.56667*	1.39568	.000	-22.3324	-12.8010
2	1	4.40000	1.39568	.079	-.3657	9.1657
	3	-2.26667	1.39568	.671	-7.0324	2.4990
	4	15.30000*	1.39568	.000	10.5343	20.0657
	5	15.26667*	1.39568	.000	10.5010	20.0324
	6	15.06667*	1.39568	.000	10.3010	19.8324
	7	-13.16667*	1.39568	.000	-17.9324	-8.4010
3	1	6.66667*	1.39568	.004	1.9010	11.4324
	2	2.26667	1.39568	.671	-2.4990	7.0324
	4	17.56667*	1.39568	.000	12.8010	22.3324
	5	17.53333*	1.39568	.000	12.7676	22.2990
	6	17.33333*	1.39568	.000	12.5676	22.0990
	7	-10.90000*	1.39568	.000	-15.6657	-6.1343
4	1	-10.90000*	1.39568	.000	-15.6657	-6.1343
	2	-15.30000*	1.39568	.000	-20.0657	-10.5343
	3	-17.56667*	1.39568	.000	-22.3324	-12.8010
	5	-.03333	1.39568	1.000	-4.7990	4.7324
	6	-.23333	1.39568	1.000	-4.9990	4.5324
	7	-28.46667*	1.39568	.000	-33.2324	-23.7010
5	1	-10.86667*	1.39568	.000	-15.6324	-6.1010
	2	-15.26667*	1.39568	.000	-20.0324	-10.5010
	3	-17.53333*	1.39568	.000	-22.2990	-12.7676
	4	.03333	1.39568	1.000	-4.7324	4.7990
	6	-.20000	1.39568	1.000	-4.9657	4.5657
	7	-28.43333*	1.39568	.000	-33.1990	-23.6676
6	1	-10.66667*	1.39568	.000	-15.4324	-5.9010
	2	-15.06667*	1.39568	.000	-19.8324	-10.3010
	3	-17.33333*	1.39568	.000	-22.0990	-12.5676
	4	.23333	1.39568	1.000	-4.5324	4.9990
	5	.20000	1.39568	1.000	-4.5657	4.9657

	7	-28.23333*	1.39568	.000	-32.9990	-23.4676
7	1	17.56667*	1.39568	.000	12.8010	22.3324
	2	13.16667*	1.39568	.000	8.4010	17.9324
	3	10.90000*	1.39568	.000	6.1343	15.6657
	4	28.46667*	1.39568	.000	23.7010	33.2324
	5	28.43333*	1.39568	.000	23.6676	33.1990
	6	28.23333*	1.39568	.000	23.4676	32.9990
*. The mean difference is significant at the 0.05 level.						

Homogeneous Subsets

DayaHambat					
Tukey HSD[a]					
		Subset for alpha = 0.05			
Formula	N	1	2	3	4
4	3	.5000			
5	3	.5333			
6	3	.7333			
1	3		11.4000		
2	3		15.8000	15.8000	
3	3			18.0667	
7	3				28.9667
Sig.		1.000	.079	.671	1.000
Means for groups in homogeneous subsets are displayed.					
a. Uses Harmonic Mean Sample Size = 3.000.					

Lampiran 7. Hasil identifikasi biokimia jamur *Candida albicans*

a. Glukosa

b. maltosa

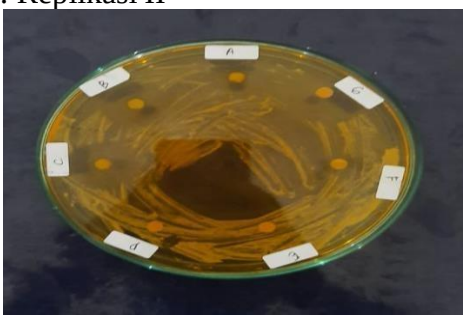
c. Sukrosa

d. Laktosa

Lampiran 8. Hasil uji aktivitas antijamur *Candida albicans*

a. Replikasi I

b. Replikasi II



c. Replikasi III