LAMPIRAN

Lampiran 1. Determinasi tanaman daun gedi (*Abelmoschus manihot* L)

UNIVERSITAS SETIA BUDI

UPT-LABORATORIUM

Jl. Letjen Sutoyo, Mojosongo-Solo 57127 Telp. 0271-852518, Fax. 0271-853275

Nomor : 91/DET/UPT-LAB/26.10.2020
Hal : Hasil determinasi tumbuhan
Lamp. : -

Nama Pemesan : Diera Mirinda Simanjuntak
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Nama sampel : Gedi /*Abelmoschus Manihot* (L) Medik

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Magnoliopsida
Ordo : Malvales
Famili : Malvaceae
Genus : Abelmoschus
Species : *Abelmoschus manihot* (L) Medik

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J. 1992 dan C.A. Backer & R.C. Bakhuizen van den Brink Jr. (1963) dan She *et al.* (2005) :

1b – 2b – 3b – 4b – 5b – 6b – 7b – 9b – 10 b – 11b – 12b – 13b – 14a – 15a – 109b – 119b – 120b – 129b – 135b – 136b – 139b – 140b – 142b – 143b – 146b – 154b – 155b – 156b – 162b – 163a – 167b – 169b – 171a – 172b – 173b – 174b – 176a – Familia 75. Malvaceae – 1a – 3b – 5b – a3b – 14b – 15a – 16a – Genus 14. Abelmoschus – 1b – 2a – 3b – *Abelmoschus manihot* (L) Medik.

Deskripsi :

Habitus : Semak tahunan tinggi sekitar 1,2 – 1,8 meter.
Akar : Akar tunggang.

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Batang : Batang tumbuh tegak (orthotrop), permukaan kulit batang licin atau sedikit kasar, batang muda glabrus.

Daun : Daun tersusun berseling, helaian daun tangkai daun glabrous; panjang daun mencapai 10-40 cm sebanyak 3-7 helai, berwarna hijau gelap dengan bentuk menjari dan tekstut tepian daun yang bergelombang, pertulangan daun menonjol pada permukaan serta memiliki tangkai daun yang panjang .

Bunga : Bunga berukuran besar dan berbentuk lonceng dengan diameter 4-8 cm, tangkai bunga berukuran 1 – 5 cm, berbulu halus, petala panjang 3-8 cm dan lebar 3-6 cm,

Buah : Buah berbentuk kapsul dengan panjang 5-20 cm.

Biji : Biji berbentuk bulat dan berwarna cokelat dengan diameter 2-4 cm.

Kepala UPT-LAB

Universitas Setia Budi

Asik Gunawan, Amdk

Surakarta, 26 Oktober 2020

Penanggung jawab

Determinasi Tumbuhan

Dra. Dewi Sulistyawati. M.Sc.

Lampiran 2. Gambar tanaman daun gedi (*Abelmoschus manihot* L)

Tanaman Daun gedi (*Abelmoschus manihot* L)

Lampiran 3. Pengeringan daun gedi

Pengambilan daun gedi

Proses pengeringan daun gedi

Alat penyerbukan

Serbuk daun gedi

Serbuk diayak menggunakan ayakan no 40

Alat pengayak no 40

Lampiran 4. Perhitungan daun kering tehadap daun basah

No	Bobot basah	Bobot kering	Persentase pengeringan (%)
1	7000	751,00	10,72

Rendemen $= \frac{751,00}{7000} \: x \: 100\%$

$\qquad = 10,72\%$

Perhitungan bobot serbuk tehadap daun kering

Bobot kering	Bobot serbuk	Persentanse serbuk (%)
751	735,27	97,90

Rendemen $= \frac{735,27}{751} x \: 100\%$

$\qquad = 97,90\%$

Lampiran 5. Susut pengeringan menggunakan *moisture balance*

Replikasi 1

Replikasi 2

Replikasi 3

Simplisia	Penimbangan (g)	Kadar air serbuk (%)
Daun gedi	2,0	5,8
	2,0	5,4
	2,0	5,8
Rata-rata		5,67±0,18

Lampiran 6. Kadar air menggunakan metode *Sterling bidwell*

Volume air

Alat *sterling bidwell*

Simplisia	Penimbangan (g)	Volume air (ml)	Kadar air (%)
Daun gedi	20,0	1,9	9,5
	20,0	1,8	9
	20,0	1,8	9
Rata-rata			9,16±0,24

Rendemen replikasi 1 = $\frac{1,9}{20}$ x 100%

$\qquad$ = 9,5 %

Rendemen replikasi 2 = $\frac{1,8}{20}$ x 100%

$\qquad$ = 9 %

Rendemen replikasi 3 = $\frac{1,8}{20}$ x 100%

$\qquad$ = 9 %

Lampiran 7. Perhitungan rendemen ekstrak dan gambar ekstrak

Alat maserasi (Maserator, *beaker glass* **dan corong)**

Rotary evaporator
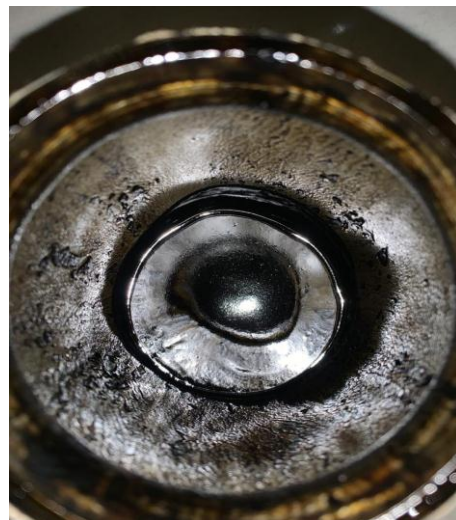
Ekstrak etanol daun gedi

Bahan (g)	Pelarut etanol(ml)	Ekstrak kental (g)	Persentase (%)
500	5000	145	29

Rendemen $= \dfrac{145}{500} \; x \; 100\%$

$\qquad = 29\ \%$

Lampiran 8. Hasil identifikasi kandungan kimia ekstrak daun gedi dan hasil susut pengeringan ekstrak daun gedi

Flavonoid (+)

Tanin (+)

Saponin (+)

Hasil susut pengeringan ekstrak daun gedi

Waktu	Berat (g)
10.45	22,6914
12.05	22,4776
13.15	22,4592
14.20	22,4329
15.35	22,4310
Konsentrasi konstan	0,19%
Kadar %	1,14

Konsentrasi konstan = (22,4329-22,4310) x 100%

$$= 0,19\%$$

$$\text{Kadar} = \frac{22,6914 - 22,4310}{22,6914} \ x \ 100\%$$

$$= 1,14\%$$

Lampiran 9. Perhitungan rendemen fraksi etil asetat dan gambar fraksi etil asetat

Fraksinasi etil asetat daun gedi

Fraksi etil asetat daun gedi

Fraksi	Ekstrak kental (g)	Bobot (g)	Rendemen (%)
Etil asetat	80	5,898	7,37
N-heksan	80	20,348	25,435
Air	80	42,945	53,68

Rendemen etil asetat $= \dfrac{5,898}{80} \ x \ 100\%$

$\qquad\qquad\qquad = 7,37 \ \%$

Rendemen N-heksan $= \dfrac{20,348}{80} \ x \ 100\%$

$\qquad\qquad\qquad = 25,435$

Rendemen Air $\qquad = \dfrac{42,945}{80} \ x \ 100\%$

$\qquad\qquad\qquad = 53,68\%$

Lampiran 10. Gambar krim fraksi etil asetat daun gedi

Gambar krim fraksi etil asetat daun gedi sebelum cycling test

Gambar krim fraksi etil asetat setelah dilakukan *cycling test*

Lampiran 11. Gambar hasil uji homogenitas sediaan krim fraksi etil asetat
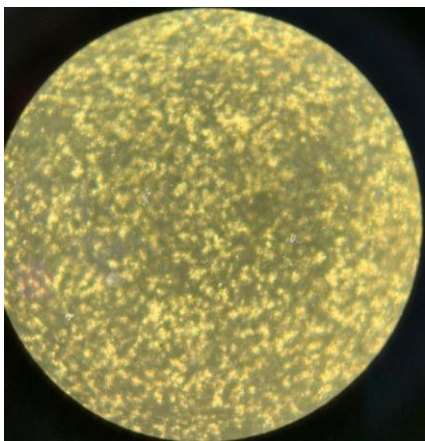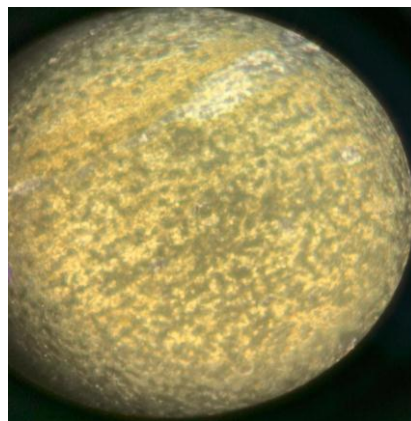
Formulasi 1   **formulasi 2**
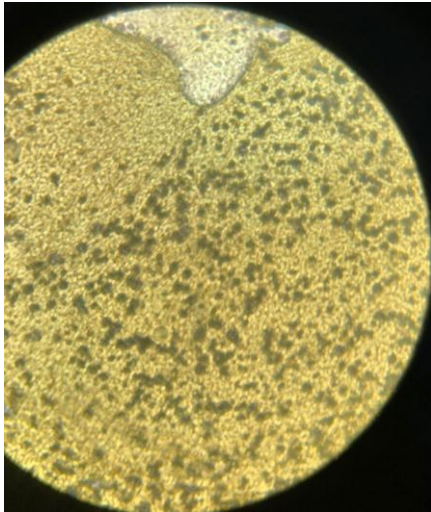
Formulasi 3   **kontrol positif**
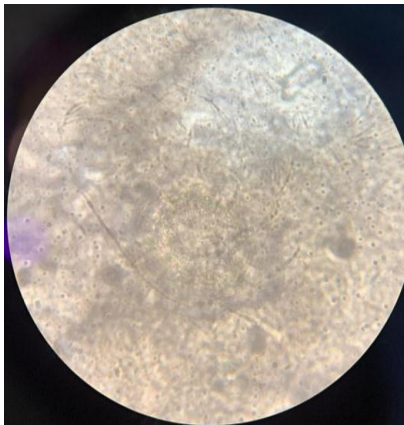
Kontrol negatif

Lampiran 12. Gambar uji evaluasi sediaan krim fraksi etil asetat daun gedi

Viskometer   **uji daya sebar**

Uji daya lekat
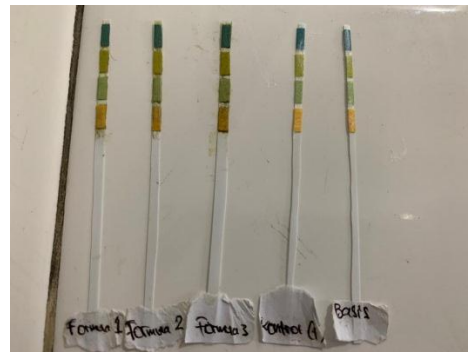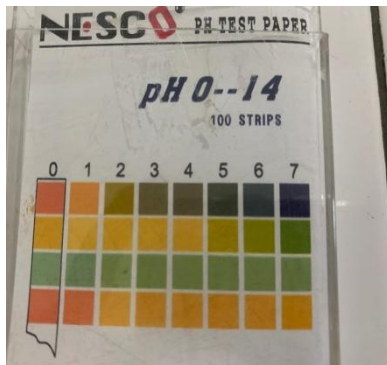
uji pH

Lampiran 13. Hasil uji tipe krim

Gambar formula 1 di larutkan dengan air dan minyak

Gambar formula 2 di larutkan dengan air dan minyak

Gambar formula 3 di larutkan dengan air dan minyak

Gambar kontrol + di larutkan dengan air dan minyak

Gambar kontrol – di larutkan dengan air dan minyak

Lampiran 14. Hasil 78uspense bakteri *Staphylococcus aureus*

Gambar suspensi bakteri yang distandarisasi dengan *Mc farland*

Gambar Biakan murni *Staphylococcus aureus ATCC 25923*

Lampiran 15. Hasil uji identifikasi bakteri menggunakan metode isolasi
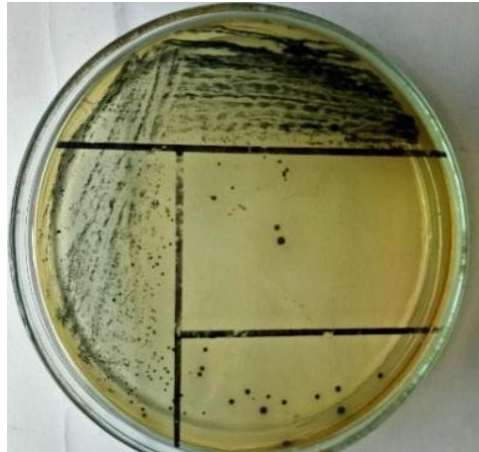
Gambar identifikasi isolasi *Staphylococcus aureus* ATCC 25923

Lampiran 16. Hasil uji biokimia bakteri

Lampiran 17. Hasil uji pewarnaan gram bakteri
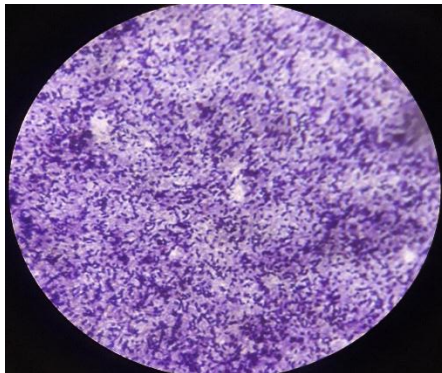
Lampiran 18. Alat dan bahan uji aktivitas antibakteri krim fraksi etil asetat

Autoclave

LAF (*Laminar air flow*)

Boor proof

Mikropipet

Gambar VJA
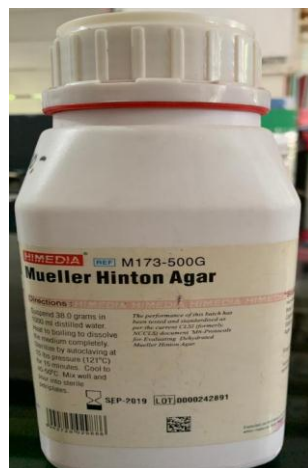
Gambar MHA
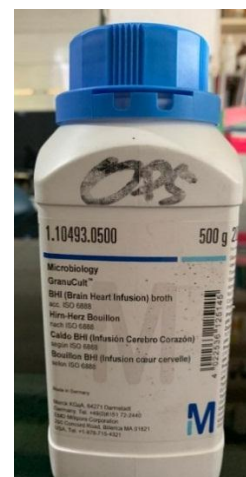
Gambar BHI

1. **Formulasi dan pembuatan media Brain Heart Infusion (BHI).**

Brain infusion   7,5 gram

Beef heart infusion   10 gram

Gelatin peptone   10 gram

Dextrose   2 gram

Sodium   2 gram

Sodium cloride   5 gram

Disodium phospate   2,5 gram

   Ditimbang 37 gram bahan media BHI dan ditambahkan aquadest sampai 1000 mL,dipanaskan sampai larut. Disterilisasi menggunakan autoclave pada suhu 121°C selama 15 menit.

2. Formulasi pembuatan media Mueller Hinton Agar (MHA).

Beef dehydrated infusion 2 gram

Casie hydrolysate   17,5 gram

Starch   1,5 gram

Agar-agar   17 gram

   Ditimbang sebanyak 38 gram bahan media MHA dan ditambahkan aquadest sebanyak 1000 mL lalu dipanaskan sampai mendidih. Disterilkan menggunakan autoclave pada suhu 121°C selama 15 menit. Dituang ke dalam cawan petri steril dan simpan pada suhu 2-8°C.

3. Formulasi dan pembuatan media Volger Johnson Agar (VJA)

Pepton from casein   10 gram

Yeast extract   5 gram

di-potasium hydrogen phosphate 10 gram

D(-) mannitol   10 gram

Lithium cloride   5 gram

Glycine   10 gram

Phenol red   0,025 gram

Agar   13 gram

Ditimbang sebanyak 63 gram bahan media VJA dan ditambahkan aquadest sebanyak 1000 mL lalu dipanaskan.sampai menddih. Disterilkan menggunakan autoclave pada suhu 121°C selama 15 menit

Lampiran 19. Hasil uji difusi aktivitas antibakteri krim fraksi etil asetat

Replikasi 1
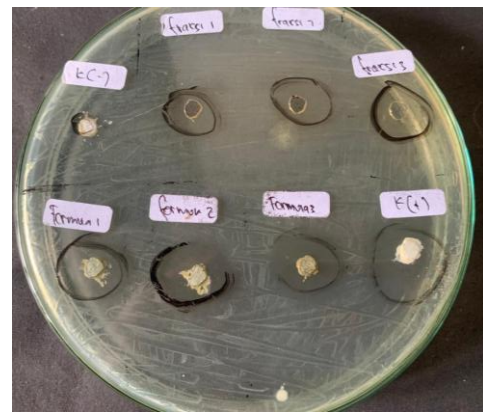
Replikasi 2

Replikasi 3

Lampiran 20. Hasil Two way ANOVA evaluasi sediaan krim fraksi etil asetat

1. **Hasil ANOVA daya lekat**

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Standardized Residual for lekat	,109	30	,200[*]	,951	30	,181

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Lekat	Based on Mean	1,019	9	20	,458
	Based on Median	,180	9	20	,994
	Based on Median and with adjusted df	,180	9	9,349	,991
	Based on trimmed mean	,922	9	20	,526

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: lekat

b. Design: Intercept + waktu + Formulasi + waktu * Formulasi

Tests of Between-Subjects Effects

Dependent Variable: lekat

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4,824[a]	9	,536	24,285	,000
Intercept	603,277	1	603,277	27334,724	,000
waktu	,231	1	,231	10,447	,004
Formulasi	4,545	4	1,136	51,486	,000
waktu * Formulasi	,048	4	,012	,543	,706
Error	,441	20	,022		
Total	608,543	30			
Corrected Total	5,265	29			

a. R Squared = ,916 (Adjusted R Squared = ,878)

Multiple Comparisons

Dependent Variable: lekat

Tukey HSD

(I) formulasi	(J) formulasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formulasi 1	formulasi 2	-,0767	,08577	,896	-,3333	,1800
	formulasi 3	-,1850	,08577	,236	-,4417	,0717
	kontrol positif	-,3717*	,08577	,003	-,6283	-,1150
	kontrol negatif	-1,0800*	,08577	,000	-1,3367	-,8233
formulasi 2	formulasi 1	,0767	,08577	,896	-,1800	,3333
	formulasi 3	-,1083	,08577	,716	-,3650	,1483
	kontrol positif	-,2950*	,08577	,019	-,5517	-,0383
	kontrol negatif	-1,0033*	,08577	,000	-1,2600	-,7467
formulasi 3	formulasi 1	,1850	,08577	,236	-,0717	,4417
	formulasi 2	,1083	,08577	,716	-,1483	,3650
	kontrol positif	-,1867	,08577	,229	-,4433	,0700
	kontrol negatif	-,8950*	,08577	,000	-1,1517	-,6383
kontrol positif	formulasi 1	,3717*	,08577	,003	,1150	,6283
	formulasi 2	,2950*	,08577	,019	,0383	,5517
	formulasi 3	,1867	,08577	,229	-,0700	,4433
	kontrol negatif	-,7083*	,08577	,000	-,9650	-,4517
kontrol negatif	formulasi 1	1,0800*	,08577	,000	,8233	1,3367
	formulasi 2	1,0033*	,08577	,000	,7467	1,2600
	formulasi 3	,8950*	,08577	,000	,6383	1,1517
	kontrol positif	,7083*	,08577	,000	,4517	,9650

Based on observed means.

The error term is Mean Square(Error) = ,022.

*. The mean difference is significant at the ,05 level.

Lekat

Tukey HSD[a,b]

formulasi	N	Subset 1	Subset 2	Subset 3
formulasi 1	6	4,1417		
formulasi 2	6	4,2183		
formulasi 3	6	4,3267	4,3267	
kontrol positif	6		4,5133	
kontrol negatif	6			5,2217
Sig.		,236	,229	1,000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = ,022.

   a. Berbeda sig dengan formula lain

Estimated Marginal Means of lekat

2. Hasil ANOVA uji daya sebar

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for sebar	,052	90	,200[*]	,974	90	,071

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Sebar	Based on Mean	,870	9	80	,555
	Based on Median	,399	9	80	,932
	Based on Median and with adjusted df	,399	9	56,915	,930
	Based on trimmed mean	,843	9	80	,579

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: sebar

b. Design: Intercept + waktu + formulasi + waktu * formulasi

Tests of Between-Subjects Effects

Dependent Variable: sebar

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14,829[a]	9	1,648	5,806	,000
Intercept	2151,013	1	2151,013	7579,413	,000
waktu	2,718	1	2,718	9,577	,003
formulasi	10,844	4	2,711	9,552	,000
waktu * formulasi	1,268	4	,317	1,117	,355
Error	22,704	80	,284		
Total	2188,547	90			
Corrected Total	37,533	89			

a. R Squared = ,395 (Adjusted R Squared = ,327)

sebar

Tukey HSD[a,b]

formulasi	N		Subset

		1	2
formula 2	18	4,4817	
kontrol +	18	4,6514	
formulasi 1	18	4,7028	
formula 3	18		5,2831
kontrol -	18		5,3250
Sig.		,725	,999

Means for groups in homogeneous subsets are displayed.

 Based on observed means.

 The error term is Mean Square(Error) = ,284.

a.   sig sama dengan kontrol negatif

Estimated Marginal Means of sebar
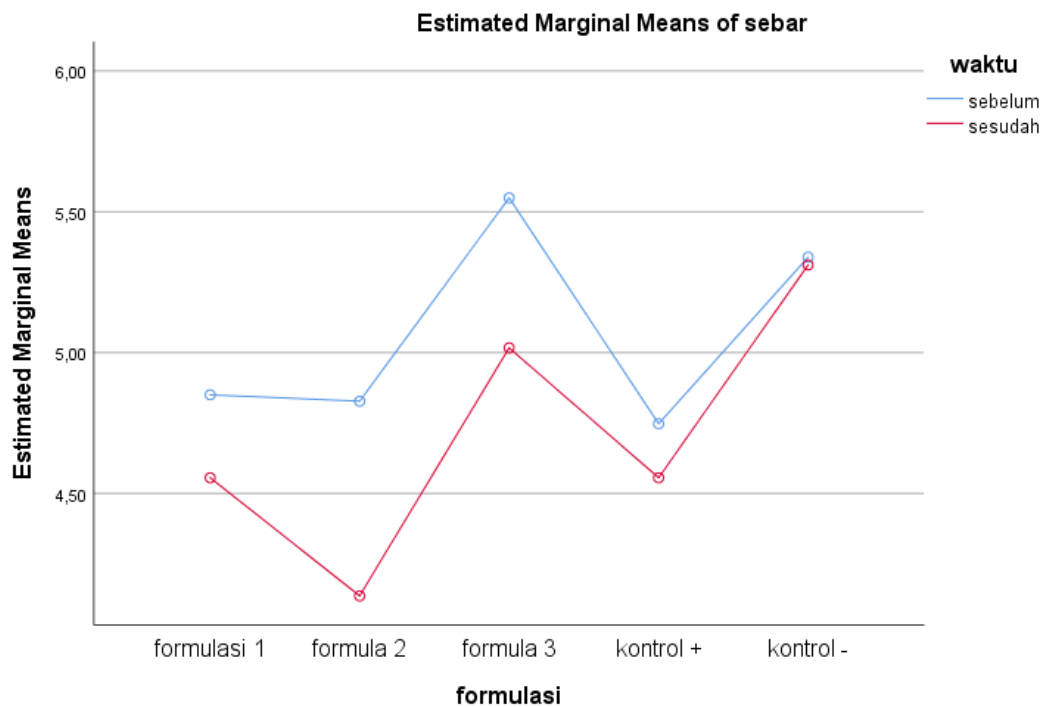
Multiple Comparisons

Dependent Variable: sebar

Tukey HSD

(I) formulasi	(J) formulasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
formulasi 1	formula 2	,2211	,17758	,725	-,2745	,7167
	formula 3	-,5803[*]	,17758	,013	-1,0759	-,0847
	kontrol +	,0514	,17758	,998	-,4442	,5470
	kontrol -	-,6222[*]	,17758	,007	-1,1178	-,1266
formula 2	formulasi 1	-,2211	,17758	,725	-,7167	,2745
	formula 3	-,8014[*]	,17758	,000	-1,2970	-,3058
	kontrol +	-,1697	,17758	,874	-,6653	,3259
	kontrol -	-,8433[*]	,17758	,000	-1,3389	-,3477
formula 3	formulasi 1	,5803[*]	,17758	,013	,0847	1,0759
	formula 2	,8014[*]	,17758	,000	,3058	1,2970
	kontrol +	,6317[*]	,17758	,006	,1361	1,1273
	kontrol -	-,0419	,17758	,999	-,5376	,4537
kontrol +	formulasi 1	-,0514	,17758	,998	-,5470	,4442
	formula 2	,1697	,17758	,874	-,3259	,6653
	formula 3	-,6317[*]	,17758	,006	-1,1273	-,1361
	kontrol -	-,6736[*]	,17758	,003	-1,1692	-,1780
kontrol -	formulasi 1	,6222[*]	,17758	,007	,1266	1,1178
	formula 2	,8433[*]	,17758	,000	,3477	1,3389
	formula 3	,0419	,17758	,999	-,4537	,5376
	kontrol +	,6736[*]	,17758	,003	,1780	1,1692

Based on observed means.

 The error term is Mean Square(Error) = ,284.

*. The mean difference is significant at the ,05 level.

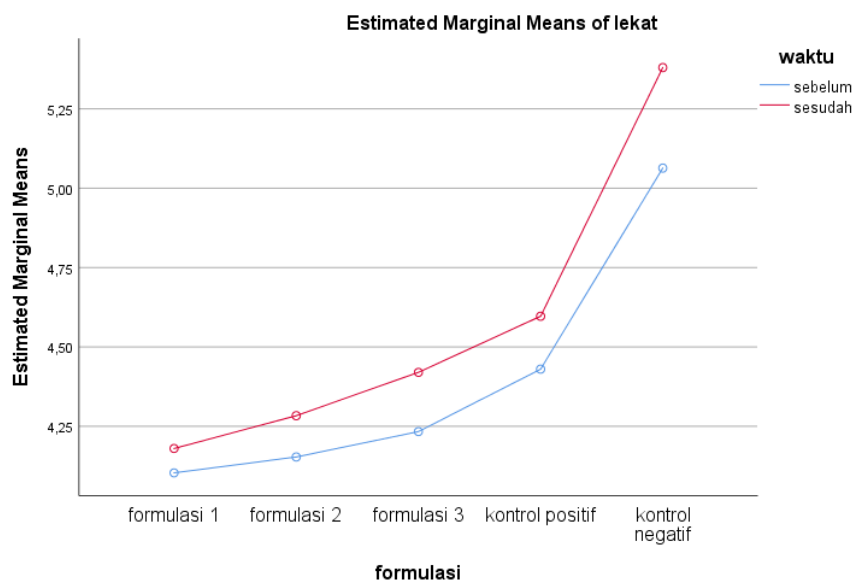3. **Hasil ANOVA uji viskositas**

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for viskositas	,118	30	,200[*]	,961	30	,332

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Viskositas	Based on Mean	1,659	9	20	,166
	Based on Median	,454	9	20	,888
	Based on Median and with adjusted df	,454	9	12,586	,880
	Based on trimmed mean	1,534	9	20	,203

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: viskositas

b. Design: Intercept + waktu + formulasi + waktu * formulasi

Tests of Between-Subjects Effects

Dependent Variable: viskositas

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	189043,500[a]	9	21004,833	40,634	,000
Intercept	1069740,833	1	1069740,833	2069,398	,000
waktu	163540,833	1	163540,833	316,367	,000
formulasi	19971,333	4	4992,833	9,659	,000
waktu * formulasi	5531,333	4	1382,833	2,675	,062
Error	10338,667	20	516,933		
Total	1269123,000	30			
Corrected Total	199382,167	29			

a. R Squared = ,948 (Adjusted R Squared = ,925)

viskositas

Tukey HSD[a,b]

		Subset		
formulasi	N	1	2	3

formulasi 1	6	160,83		
formulasi 2	6	165,33		
formulasi 3	6	179,67	179,67	
kontrol +	6		213,33	213,33
kontrol -	6			225,00
Sig.		,614	,116	,898

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 516,933.

    a.   Berbeda sig dengan kontrol negatif

Estimated Marginal Means of viskositas
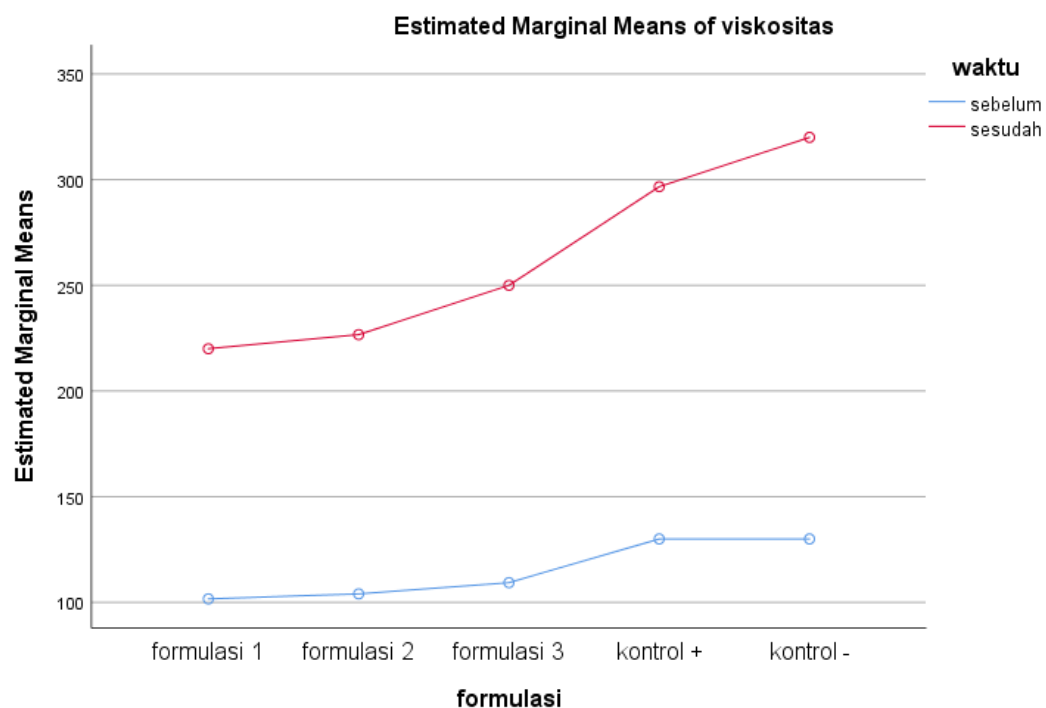
Multiple Comparisons

Dependent Variable: viskositas

Tukey HSD

(I) formulasi	(J) formulasi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound

formulasi 1	formulasi 2	-4,50	13,127	,997	-43,78	34,78
	formulasi 3	-18,83	13,127	,614	-58,11	20,45
	kontrol +	-52,50*	13,127	,006	-91,78	-13,22
	kontrol -	-64,17*	13,127	,001	-103,45	-24,89
formulasi 2	formulasi 1	4,50	13,127	,997	-34,78	43,78
	formulasi 3	-14,33	13,127	,809	-53,61	24,95
	kontrol +	-48,00*	13,127	,012	-87,28	-8,72
	kontrol -	-59,67*	13,127	,002	-98,95	-20,39
formulasi 3	formulasi 1	18,83	13,127	,614	-20,45	58,11
	formulasi 2	14,33	13,127	,809	-24,95	53,61
	kontrol +	-33,67	13,127	,116	-72,95	5,61
	kontrol -	-45,33*	13,127	,019	-84,61	-6,05
kontrol +	formulasi 1	52,50*	13,127	,006	13,22	91,78
	formulasi 2	48,00*	13,127	,012	8,72	87,28
	formulasi 3	33,67	13,127	,116	-5,61	72,95
	kontrol -	-11,67	13,127	,898	-50,95	27,61
kontrol -	formulasi 1	64,17*	13,127	,001	24,89	103,45
	formulasi 2	59,67*	13,127	,002	20,39	98,95
	formulasi 3	45,33*	13,127	,019	6,05	84,61
	kontrol +	11,67	13,127	,898	-27,61	50,95

Based on observed means.
 The error term is Mean Square(Error) = 516,933.

*. The mean difference is significant at the ,05 level.

Lampiran 21. Hasil SPSS ANOVA uji antibakteri krim fraksi etil asetat daun gedi

Tests of Normality

	kelompok	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.

hambat	formula 1	,292	3	.	,923	3	,463
	formula 2	,175	3	.	1,000	3	1,000
	formula 3	,175	3	.	1,000	3	1,000
	kontrol +	,175	3	.	1,000	3	1,000
	kontrol -	,385	3	.	,750	3	,000
	fraksi 3%	,253	3	.	,964	3	,637
	fraksi 4,5%	,253	3	.	,964	3	,637
	fraksi 6%	,292	3	.	,923	3	,463

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
hambat	Based on Mean	1,286	7	16	,318
	Based on Median	,375	7	16	,904
	Based on Median and with adjusted df	,375	7	9,600	,896
	Based on trimmed mean	1,200	7	16	,357

ANOVA

hambat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	446,000	7	63,714	30,583	,000
Within Groups	33,333	16	2,083		
Total	479,333	23			

hambat

Tukey HSD[a]

		Subset for alpha = 0.05		
kelompok	N	1	2	3
kontrol -	3	5,33		
fraksi 3%	3		13,33	
fraksi 4,5%	3		16,33	16,33
formula 1	3		16,67	16,67
formula 2	3		17,00	17,00
formula 3	3			18,00
fraksi 6%	3			18,67
kontrol +	3			20,00

Sig.		1,000	,095	,095

Means for groups in homogeneous subsets are displayed.

    a.   Sama sig dengan kontrol positif

    b.   Berbeda sig dengan kontrol positif

    c.   Berbeda sig dengan formula 1