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Lampiran 1. Hasil determinasi tanaman



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Nomor : 236/DET/UPT-LAB/25.05.2021
Hal : Hasil determinasi tumbuhan
Lamp. : -

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Nama sampel : Pegagan/*Centella asiatica* Urb.

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Magnoliopsida
Ordo : Umbellales
Famili : Umbelliferae
Genus : *Centella*
Species : *Centella asiatica* Urb.

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J. 1992 :

1b – 2b – 3b – 4b – 6b – 7b – 9b – 10a. golongan 7. 92b – 100b – 103b – 105b – 106b – 107b – 108b. familia 98. Umbelliferae. 1b – 2b – 3. *Centella*. *Centella asiatica* Urb.

Deskripsi :

Habitus : Herba menahun, tumbuh menjalar.
Akar : Akar rimpang pendek, akar tunggang, bulat, berwarna putih.
Batang : Tidak berbatang.

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- Daun** : Daun unggal, bangun ginjal, pangkal melekuk ke dalam lebar, membulat, tepi beringgit, diameter 3,5 – 4 cm, bertulang daun menyirip, tangkai daun panjang 4 – 5 cm, tersusun dalam roset akar, berwarna hijau.
- Bunga** : Bunga majemuk, bentuk payung, tumbuh di ketiak daun, terdapat dua daun pelindung, mahkota berwarna putih, bentuk terompet. Anak tangkai bunga amat pendek. Daun mahkota kemerahan.
- Buah** : Buah pipih, berlekuk dua, berusuk, berwarna ungu kecoklatan.



Surakarta, 25 Mei 2021

Penanggung jawab

Determinasi Tumbuhan



Dra. Dewi Sulistyawati. M.Sc.

Lampiran 2. Preparasi sampel



Lampiran 3. Ekstrak etanol daun pegagan



Lampiran 4. Hasil perhitungan rendemen serbuk daun pegagan

Berat basah (g)	Berat kering (g)	Rendemen % (b/b)
26000	1750	6,73

$$\begin{aligned}
 \text{Rendemen serbuk daun pegagan} &= \frac{\text{bobot kering (gram)}}{\text{bobot basah (gram)}} \times 100\% \\
 &= \frac{1750}{26000} \times 100\% \\
 &= 6,73\%
 \end{aligned}$$

Lampiran 5. Hasil perhitungan rendemen ekstrak etanol daun pegagan

Ekstrak	Berat serbuk (g)	Berat ekstrak (g)	Rendemen (%)
Ekstrak etanol	600	65,14	10,85

$$\begin{aligned}
 \text{Rendemen ekstrak etanol daun pegagan} &= \frac{\text{bobot ekstrak (gram)}}{\text{bobot serbuk (gram)}} \times 100\% \\
 &= \frac{65,14}{600} \times 100\% \\
 &= 10,85\%
 \end{aligned}$$

Lampiran 6. Susut pengeringan serbuk dan kadar air ekstrak daun pegagan



Lampiran 7. Hasil perhitungan kadar air serbuk

Replikasi	Berat serbuk (gram)	Volume air (ml)	Kadar air (%)
1	20,03	1,6	7,98
2	20	1,4	7
3	20,91	1,7	8,13
Rata-rata ± SD			7,70 ± 0,50

$$\begin{aligned} \text{Kadar air serbuk daun pegagan} &= \frac{1,6}{20,03} \times 100\% \\ &= 7,98\% \end{aligned}$$

$$\begin{aligned} \text{Kadar air serbuk daun pegagan} &= \frac{1,4}{20} \times 100\% \\ &= 7\% \end{aligned}$$

$$\begin{aligned} \text{Kadar air serbuk daun pegagan} &= \frac{1,7}{20,91} \times 100\% \\ &= 8,13\% \end{aligned}$$

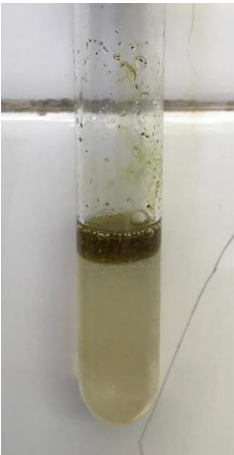



Lampiran 8. Bobot jenis ekstrak etanol daun pegagan



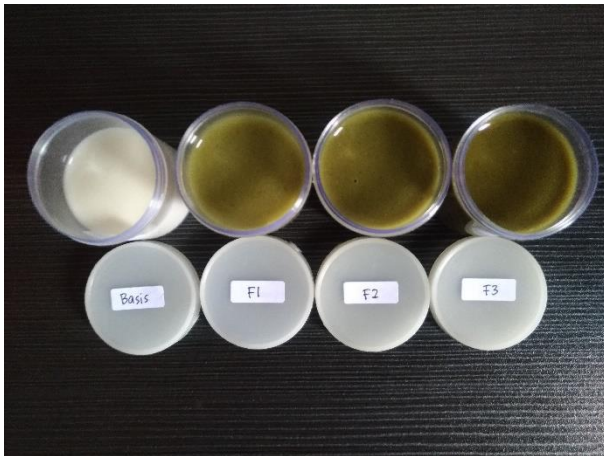
Lampiran 9. Hasil perhitungan bobot jenis ekstrak

$$\begin{aligned} \text{Bobot jenis ekstrak} &= \frac{(\text{berat piknometer+ekstrak})-\text{berat piknometer kosong}}{(\text{berat piknometer+air})-\text{berat piknometer kosong}} \times B_j \text{ air} \\ &= \frac{77,0791-27,8622}{77,4582-27,8622} \times 1 \\ &= 0,9923 \end{aligned}$$


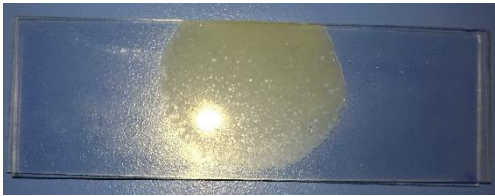

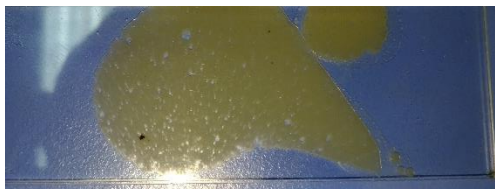

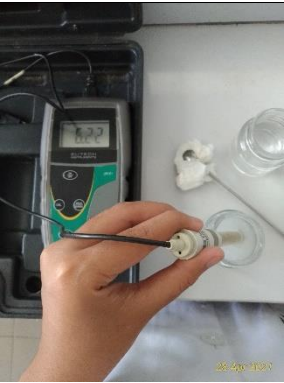


Lampiran 10. Hasil identifikasi kandungan senyawa kimia ekstrak daun pegagan

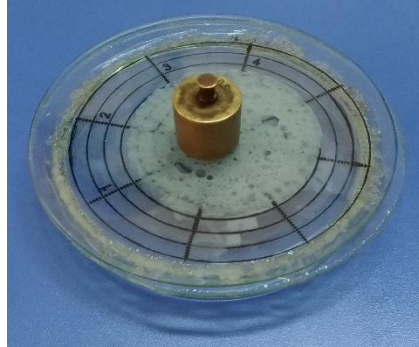
Flavonoid	Saponin	Tannin	Steroid/triterpenoid
			
Terbentuk warna kuning pada lapisan amil alkohol	Terbentuk busa yang konstan	Terbentuk warna hijau kehitaman	Terbentuk cincin kecoklatan
Positif flavonoid	Positif saponin	Positif tanin	Positif triterpenoid

Lampiran 11. Foto sediaan emulgel ekstrak etanol daun pegagan



Lampiran 12. Uji mutu fisik dan stabilitas sediaan emulgel

Uji homogenitas	
Basis	Formula 1
	
Formula 2	Formula 3
	
pH	
	
Daya lekat	viskositas
	

Daya sebar**Tipe emulsi**

Lampiran 13. Data hasil uji pH sediaan emulgel

Pengujian minggu 1				
Replikasi	Basis	F1	F2	F3
1	6,22	6,25	6,36	6,42
2	6,25	6,28	6,32	6,37
3	6,23	6,26	6,33	6,39
Rata-rata	6,23	6,26	6,34	6,39
SD	0,01	0,01	0,02	0,02

Pengujian minggu 3				
Replikasi	Basis	F1	F2	F3
1	5,38	5,56	5,69	5,88
2	5,39	5,54	5,65	5,86
3	5,35	5,57	5,7	5,89
Rata-rata	5,37	5,56	5,68	5,88
SD	0,02	0,01	0,02	0,01

Lampiran 14. Data uji statistik pH sediaan emulgel ekstrak etanol daun pegagan

Uji Normalitas

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for pH	.124	24	.200*	.953	24	.320

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

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Levene's Test of Equality of Error Variances^a

Dependent Variable: pH

F	df1	df2	Sig.
.511	7	16	.813

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

a. Design: Intercept + Formula + Waktu_Uji + Formula * Waktu_Uji

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric two way anova

Pengujian two way anova

Tests of Between-Subjects Effects

Dependent Variable: pH

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.265 ^a	7	.466	1190.997	.000
Intercept	853.711	1	853.711	2179687.191	.000
Formula	.360	3	.120	306.057	.000
Waktu_Uji	2.815	1	2.815	7188.128	.000
Formula * Waktu_Uji	.090	3	.030	76.894	.000
Error	.006	16	.000		
Total	856.982	24			
Corrected Total	3.272	23			

a. R Squared = .998 (Adjusted R Squared = .997)

Nilai sig <0,05 terdapat perbedaan yang signifikan antar masing-masing formula

Pengujian post hoc Tukey**Multiple Comparisons**

Dependent Variable: pH

Tukey HSD

(I) Formula Sediaan	(J) Formula Sediaan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basis	Formula 1	-.1067*	.01143	.000	-.1394	-.0740
	Formula 2	-.2050*	.01143	.000	-.2377	-.1723
	Formula 3	-.3317*	.01143	.000	-.3644	-.2990
Formula 1	Basis	.1067*	.01143	.000	.0740	.1394
	Formula 2	-.0983*	.01143	.000	-.1310	-.0656
	Formula 3	-.2250*	.01143	.000	-.2577	-.1923
Formula 2	Basis	.2050*	.01143	.000	.1723	.2377
	Formula 1	.0983*	.01143	.000	.0656	.1310
	Formula 3	-.1267*	.01143	.000	-.1594	-.0940
Formula 3	Basis	.3317*	.01143	.000	.2990	.3644
	Formula 1	.2250*	.01143	.000	.1923	.2577
	Formula 2	.1267*	.01143	.000	.0940	.1594

Based on observed means.

The error term is Mean Square(Error) = ,000.

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

pHTukey HSD^{a,b}

Formula Sediaan	N	Subset			
		1	2	3	4
Basis	6	5.8033			
Formula 1	6		5.9100		
Formula 2	6			6.0083	
Formula 3	6				6.1350
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = ,000.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Lampiran 15. Data hasil uji viskositas sediaan emulgel

Pengujian minggu 1				
Replikasi	Basis	F1	F2	F3
1	240	210	200	200
2	230	230	220	210
3	250	240	220	230
Rata-rata	240,00	226,67	213,33	213,33
SD	8,16	12,47	9,43	12,47

Pengujian minggu 3				
Replikasi	Basis	F1	F2	F3
1	150	140	150	140
2	160	150	140	140
3	160	150	130	120
Rata-rata	156,67	146,67	140,00	133,33
SD	4,71	4,71	8,16	9,43

Lampiran 16. Data uji statistik viskositas sediaan emulgel ekstrak etanol daun pegagan

Uji Normalitas

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for pH	.181	24	.040	.947	24	.238

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Levene's Test of Equality of Error Variances^a

Dependent Variable: Viskositas

F	df1	df2	Sig.
.847	7	16	.566

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

a. Design: Intercept + Formula + Waktu_Uji + Formula * Waktu_Uji

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric two way anova

Pengujian two way anova

Tests of Between-Subjects Effects

Dependent Variable: Viskositas

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	39962.500 ^a	7	5708.929	45.671	.000
Intercept	810337.500	1	810337.500	6482.700	.000
Formula	2279.167	3	759.722	6.078	.006
Waktu_Uji	37604.167	1	37604.167	300.833	.000
Formula *					
Waktu_Uji	79.167	3	26.389	.211	.887
Error	2000.000	16	125.000		
Total	852300.000	24			
Corrected Total	41962.500	23			

a. R Squared = .952 (Adjusted R Squared = .931)

Nilai sig <0,05 terdapat perbedaan yang signifikan antar masing-masing formula

Pengujian post hoc Tukey

Multiple Comparisons

Dependent Variable: Viskositas

Tukey HSD

(I) Formula Sediaan	(J) Formula Sediaan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basis	Formula 1	11.67	6.455	.306	-6.80	30.13
	Formula 2	21.67*	6.455	.019	3.20	40.13
	Formula 3	25.00*	6.455	.007	6.53	43.47
Formula 1	Basis	-11.67	6.455	.306	-30.13	6.80
	Formula 2	10.00	6.455	.433	-8.47	28.47
	Formula 3	13.33	6.455	.206	-5.13	31.80
Formula 2	Basis	-21.67*	6.455	.019	-40.13	-3.20
	Formula 1	-10.00	6.455	.433	-28.47	8.47
	Formula 3	3.33	6.455	.954	-15.13	21.80
Formula 3	Basis	-25.00*	6.455	.007	-43.47	-6.53
	Formula 1	-13.33	6.455	.206	-31.80	5.13
	Formula 2	-3.33	6.455	.954	-21.80	15.13

Based on observed means.

The error term is Mean Square(Error) = 125.000.

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

Viskositas

Tukey HSD^{a,b}

Formula Sediaan	N	Subset	
		1	2
Formula 3	6	173.33	
Formula 2	6	176.67	
Formula 1	6	186.67	186.67
Basis	6		198.33
Sig.		.206	.306

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 125.000.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.

Lampiran 17. Data hasil uji daya lekat sediaan emulgel

Pengujian minggu 1				
Replikasi	Basis	F1	F2	F3
1	3,96	3,92	3,74	3,84
2	3,87	3,86	3,82	3,81
3	3,98	3,89	3,78	3,73
Rata-rata	3,94	3,89	3,78	3,79
SD	0,05	0,02	0,03	0,05

Pengujian minggu 3				
Replikasi	Basis	F1	F2	F3
1	3,88	3,87	3,72	3,67
2	3,84	3,8	3,76	3,62
3	3,82	3,79	3,68	3,76
Rata-rata	3,85	3,82	3,72	3,68
SD	0,02	0,04	0,03	0,06

Lampiran 18. Data uji statistik daya lekat sediaan emulgel ekstrak etanol daun pegagan

Uji Normalitas

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Daya_Lekat	.105	24	.200*	.961	24	.457

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

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Levene's Test of Equality of Error Variances^a

Dependent Variable: Daya Lekat

F	df1	df2	Sig.
.791	7	16	.605

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

a. Design: Intercept + Formula + Waktu_Uji + Formula * Waktu_Uji

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric two way anova

Pengujian two way anova

Tests of Between-Subjects Effects

Dependent Variable: Daya Lekat

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.148 ^a	7	.021	9.053	.000
Intercept	348.158	1	348.158	149477.426	.000
Formula	.105	3	.035	14.962	.000
Waktu_Uji	.041	1	.041	17.533	.001
Formula *	.002	3	.001	.317	.813
Waktu_Uji	.037	16	.002		
Error	.037	16	.002		
Total	348.343	24			
Corrected Total	.185	23			

a. R Squared = .798 (Adjusted R Squared = .710)

Nilai sig <0,05 terdapat perbedaan yang signifikan antar masing-masing formula

Pengujian post hoc Tukey**Multiple Comparisons**

Dependent Variable: Daya Lekat

Tukey HSD

(I) Formula Sediaan	(J) Formula Sediaan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basis	Formula 1	.0367	.02786	.567	-.0431	.1164
	Formula 2	.1417*	.02786	.001	.0619	.2214
	Formula 3	.1533*	.02786	.000	.0736	.2331
Formula 1	Basis	-.0367	.02786	.567	-.1164	.0431
	Formula 2	.1050*	.02786	.008	.0253	.1847
	Formula 3	.1167*	.02786	.004	.0369	.1964
Formula 2	Basis	-.1417*	.02786	.001	-.2214	-.0619
	Formula 1	-.1050*	.02786	.008	-.1847	-.0253
	Formula 3	.0117	.02786	.974	-.0681	.0914
Formula 3	Basis	-.1533*	.02786	.000	-.2331	-.0736
	Formula 1	-.1167*	.02786	.004	-.1964	-.0369
	Formula 2	-.0117	.02786	.974	-.0914	.0681

Based on observed means.

The error term is Mean Square(Error) = .002.

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

Daya LekatTukey HSD^{a,b}

Formula Sediaan	N	Subset	
		1	2
Formula 3	6	3.7383	
Formula 2	6	3.7500	
Formula 1	6		3.8550
Basis	6		3.8917
Sig.		.974	.567

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .002.

a. Uses Harmonic Mean Sample Size = 6.000.

b. Alpha = ,05.

Lampiran 19. Data hasil uji daya sebar sediaan emulgel

Pengujian minggu 1					
Formula	Beban (gram)	Replikasi	Hasil	Rata-rata	SD
Basis	50	1	6	5,83	0,17
		2	5,6		
		3	5,9		
	100	1	6,7	6,37	0,29
		2	6		
		3	6,4		
	150	1	7,2	6,87	0,29
		2	6,5		
		3	6,9		
Formula 1	50	1	5,9	5,73	0,12
		2	5,7		
		3	5,6		
	100	1	6,7	6,57	0,12
		2	6,6		
		3	6,4		
	150	1	7,1	6,97	0,12
		2	7		
		3	6,8		
Formula 2	50	1	5,8	5,63	0,12
		2	5,6		
		3	5,5		
	100	1	6,5	6,33	0,12
		2	6,3		
		3	6,2		
	150	1	7	6,80	0,16
		2	6,8		
		3	6,6		

Formula 3	50	1	5,7	5,77	0,09
		2	5,7		
		3	5,9		
	100	1	6,2	6,37	0,12
		2	6,5		
		3	6,4		
	150	1	6,6	6,83	0,17
		2	7		
		3	6,9		

Pengujian minggu 3					
Formula	Beban (gram)	Replikasi	Hasil	Rata-rata	SD
Basis	50	1	5,6	5,93	0,25
		2	6,2		
		3	6		
	100	1	6,3	6,47	0,12
		2	6,6		
		3	6,5		
	150	1	6,9	6,93	0,05
		2	7		
		3	6,9		
Formula1	50	1	6,2	6,00	0,16
		2	5,8		
		3	6		
	100	1	6,7	6,43	0,21
		2	6,2		
		3	6,4		
	150	1	7	6,90	0,08
		2	6,8		
		3	6,9		

Formula 2	50	1	6,1	5,97	0,26
		2	6,2		
		3	5,6		
	100	1	6,5	6,40	0,29
		2	6,7		
		3	6		
	150	1	6,9	6,87	0,12
		2	7		
		3	6,7		
Formula 3	50	1	6,1	5,97	0,12
		2	5,8		
		3	6		
	100	1	6,5	6,47	0,12
		2	6,3		
		3	6,6		
	150	1	6,9	6,90	0,16
		2	6,7		
		3	7,1		

Lampiran 20. Data uji statistik daya sebar sediaan emulgel ekstrak etanol daun pegagan

Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.150	24	.174	.941	24	.175

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Test of Homogeneity of Variances

Daya Sebar

Levene Statistic	df1	df2	Sig.
.017	3	20	.997

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric two way anova

Pengujian two way anova

ANOVA

Daya Sebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.031	3	.010	.047	.986
Within Groups	4.418	20	.221		
Total	4.450	23			

Nilai sig >0,05 tidak terdapat perbedaan yang signifikan antar masing-masing formula

Pengujian post hoc Tukey

Multiple Comparisons

Dependent Variable: Daya Sebar

Tukey HSD

(I) Formula Sediaan	(J) Formula Sediaan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basis	Formula 1	-.03333	.27137	.999	-.7929	.7262
	Formula 2	.06667	.27137	.995	-.6929	.8262
	Formula 3	.01500	.27137	1.000	-.7445	.7745
Formula 1	Basis	.03333	.27137	.999	-.7262	.7929
	Formula 2	.10000	.27137	.982	-.6595	.8595
	Formula 3	.04833	.27137	.998	-.7112	.8079
Formula 2	Basis	-.06667	.27137	.995	-.8262	.6929
	Formula 1	-.10000	.27137	.982	-.8595	.6595
	Formula 3	-.05167	.27137	.997	-.8112	.7079
Formula 3	Basis	-.01500	.27137	1.000	-.7745	.7445
	Formula 1	-.04833	.27137	.998	-.8079	.7112
	Formula 2	.05167	.27137	.997	-.7079	.8112

Daya Sebar

Tukey HSD^a

Formula Sediaan	N	Subset for alpha =
		0.05
Formula 2	6	6.3333
Formula 3	6	6.3850
Basis	6	6.4000
Formula 1	6	6.4333
Sig.		.982

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.000.

Lampiran 21. Data hasil uji stabilitas pH**Sebelum uji stabilitas**

Replikasi	Basis	F1	F2	F3
1	6,19	6,28	6,25	6,38
2	6,25	6,32	6,22	6,43
3	6,28	6,37	6,27	6,41
Rata-rata	6,24	6,32	6,25	6,41
SD	0,04	0,04	0,02	0,02

Sesudah uji stabilitas

Replikasi	Basis	F1	F2	F3
1	6,19	6,23	6,19	6,32
2	6,14	6,18	6,18	6,29
3	6,1	6,19	6,16	6,23
Rata-rata	6,14	6,20	6,18	6,28
SD	0,04	0,02	0,01	0,04

Lampiran 22. Data statistik uji stabilitas pH sediaan emulgel ekstrak etanol daun pegagan

Uji Normalitas

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Uji_Stabilitas	.116	24	.200*	.976	24	.818

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

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Levene's Test of Equality of Error Variances^a

Dependent Variable: Sebelum_Uji_Stabilitas

F	df1	df2	Sig.
2.911	3	20	.060

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

a. Design: Intercept + Formula

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric paired sampel test

Pengujian paired sampel test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Sebelum Uji Stabilitas (Basis)	6.2400	3	.04583	.02646
	Setelah Uji Stabilitas (Basis)	6.1433	3	.04509	.02603
Pair 2	Sebelum Uji Stabilitas (F1)	6.3233	3	.04509	.02603
	Setelah Uji Stabilitas (F1)	6.2000	3	.02646	.01528
Pair 3	Sebelum Uji Stabilitas (F2)	6.2467	3	.02517	.01453
	Setelah Uji Stabilitas (F2)	6.1767	3	.01528	.00882
Pair 4	Sebelum Uji Stabilitas (F3)	6.4067	3	.02517	.01453
	Setelah Uji Stabilitas (F3)	6.2800	3	.04583	.02646

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Sebelum Uji Stabilitas (Basis) & Setelah Uji Stabilitas (Basis)	3	-.992	.080
Pair 2 Sebelum Uji Stabilitas (F1) & Setelah Uji Stabilitas (F1)	3	-.712	.495
Pair 3 Sebelum Uji Stabilitas (F2) & Setelah Uji Stabilitas (F2)	3	-.564	.619
Pair 4 Sebelum Uji Stabilitas (F3) & Setelah Uji Stabilitas (F3)	3	-.434	.715

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Sebelum Uji Stabilitas (Basis) - Setelah Uji Stabilitas (Basis)	.09667	.09074	.05239	-.12874	.32207	1.845	2	.206
Pair 2 Sebelum Uji Stabilitas (F1) - Setelah Uji Stabilitas (F1)	.12333	.06658	.03844	-.04207	.28874	3.208	2	.085
Pair 3 Sebelum Uji Stabilitas (F2) - Setelah Uji Stabilitas (F2)	.07000	.03606	.02082	-.01957	.15957	3.363	2	.078
Pair 4 Sebelum Uji Stabilitas (F3) - Setelah Uji Stabilitas (F3)	.12667	.06110	.03528	-.02512	.27845	3.591	2	.070

Nilai sig. (2-tailed) >0,05 menunjukkan bahwa tidak terdapat perbedaan yang signifikan pada nilai pH antar masing-masing formula sebelum dan sesudah uji stabilitas

Lampiran 23. Data hasil uji stabilitas viskositas

Sebelum uji stabilitas

Replikasi	Basis	F1	F2	F3
1	220	210	210	200
2	230	230	220	210
3	230	220	200	200
Rata-rata	226,67	220,00	210,00	203,33
SD	4,71	8,16	8,16	4,71

Sesudah uji stabilitas

Replikasi	Basis	F1	F2	F3
1	150	150	140	130
2	160	140	150	140
3	170	150	140	140
Rata-rata	160,00	146,67	143,33	136,67
SD	8,16	4,71	4,71	4,71

Lampiran 24. Data statistik uji stabilitas viskositas sediaan emulgel ekstrak etanol daun pegagan

Uji Normalitas

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Uji_Stabilitas_Viskositas	.158	24	.125	.936	24	.134

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Levene's Test of Equality of Error Variances^a

Dependent Variable: Uji Stabilitas (Viskositas)

F	df1	df2	Sig.
.268	7	16	.958

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

a. Design: Intercept + Formula + Waktu_Uji + Formula * Waktu_Uji

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric paired t-test

Pengujian Paired T-Test

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Sebelum Uji Stabilitas (Basis)	226.67	3	5.774	3.333
Setelah Uji Stabilitas (Basis)	160.00	3	10.000	5.774
Pair 2 Sebelum Uji Stabilitas (F1)	220.00	3	10.000	5.774
Setelah Uji Stabilitas (F1)	146.67	3	5.774	3.333
Pair 3 Sebelum Uji Stabilitas (F2)	210.00	3	10.000	5.774
Setelah Uji Stabilitas (F2)	143.33	3	5.774	3.333
Pair 4 Sebelum Uji Stabilitas (F3)	203.33	3	5.774	3.333
Setelah Uji Stabilitas (F3)	136.67	3	5.774	3.333

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Sebelum Uji Stabilitas (Basis) & Setelah Uji Stabilitas (Basis)	3	.866	.333
Pair 2 Sebelum Uji Stabilitas (F1) & Setelah Uji Stabilitas (F1)	3	-.866	.333
Pair 3 Sebelum Uji Stabilitas (F2) & Setelah Uji Stabilitas (F2)	3	.866	.333
Pair 4 Sebelum Uji Stabilitas (F3) & Setelah Uji Stabilitas (F3)	3	.500	.667

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Sebelum Uji Stabilitas (Basis) - Setelah Uji Stabilitas (Basis)	66.667	5.774	3.333	52.324	81.009	20.000	2	.002
Pair 2 Sebelum Uji Stabilitas (F1) - Setelah Uji Stabilitas (F1)	73.333	15.275	8.819	35.388	111.279	8.315	2	.014
Pair 3 Sebelum Uji Stabilitas (F2) - Setelah Uji Stabilitas (F2)	66.667	5.774	3.333	52.324	81.009	20.000	2	.002
Pair 4 Sebelum Uji Stabilitas (F3) - Setelah Uji Stabilitas (F3)	66.667	5.774	3.333	52.324	81.009	20.000	2	.002

Nilai sig. (2-tailed) memiliki nilai <0,05 yang menunjukkan bahwa terdapat perbedaan yang signifikan dari nilai viskositas setiap formula sebelum dan sesudah uji stabilitas

Lampiran 25. Sertifikat bakteri *Staphylococcus aureus*

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 Jalan Cempaka Putih No.69 - Jakarta Pusat
 Indonesia

SERTIFIKAT HASIL UJI

1. Bakteri : Stock Strain *Staphylococcus aureus* ATCC 25923
 2. Nomor Uji Bakteri : Strain V. 1. 3.
 3. Tanggal Uji bakteri : 5 – 10 Oktober 2020

Uraian Hasil Uji

Strain V. 1. 3. Biakan Murni dari *Staphylococcus aureus* ATCC 25923

I. Ciri-ciri koloni :


- Pewarnaan Gram : Sel bulat, kecil-kecil, menggerombol, berwarna ungu, termasuk Gram positif.
- Di tanam pada media Vogel Jhonson Agar : Koloni bakteri berwarna hitam, disekitar koloni bakteri berwarna kuning.
- Ditanam pada media Mannitol Salt Agar : Koloni bakteri bening/kuning, disekitar koloni berwarna kuning.

II. Uji Fermentasi Karbohidrat dan Biokimia Penegasan

Uji Fermentasi Karbohidrat			Uji Fisiologis	
Glukosa	Asam (-)	Gas (-)	Katalase	(+) timbul gelembung gas
Laktosa	Asam (-)	Gas (-)	Koagulase (serum)	(+) serum menggumpal
Maltosa	Asam (-)	Gas (-)	Oxidase	(+)
Sukrosa	Asam (-)	Gas (-)	Manitol	(+)

Catatan:

- Hasil Uji ini hanya berlaku untuk contoh yang diuji.


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Lampiran 26. Komposisi dan pembuatan media

1. Brain Heart Infusion (BHI)

Komposisi :

Brain infusion	12,5 gram
Heart infusion	5 gram
Protease peptone	10 gram
Glucose	2 gram
Sodium chloride	5 gram
di-sodium hydrogen phosphate	2,5 gram
Aquadest ad	1000 ml

Cara Pembuatan :

Sebanyak 37 gram BHI ditimbang dan ditambahkan aquadest hingga 1000 ml kemudian dipanaskan hingga larut. Media disterilisasi menggunakan autoclave selama 15 menit pada suhu 121°C.

2. Mannitol Salt Agar (MSA)

Komposisi :

Beef extract	1 gram
Peptone	10 gram
NaCl	75 gram
Manitol	10 gram
Phenol red	0,025 gram
Agar	15 gram
Aquades ad	1000 ml

Cara Pembuatan :

Sebanyak 38 gram media MSA ditimbang dan ditambahkan aquadest hingga 1000 ml kemudian dipanaskan hingga larut. Media disterilisasi menggunakan autoclave selama 15 menit pada suhu 121°C.

3. **Mueller Hinton Agar (MHA)**


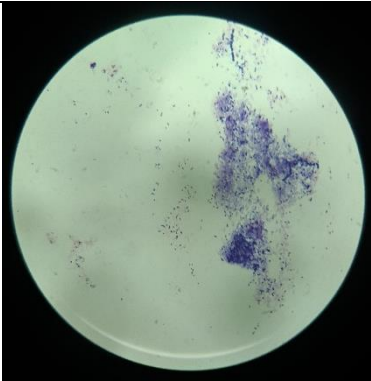
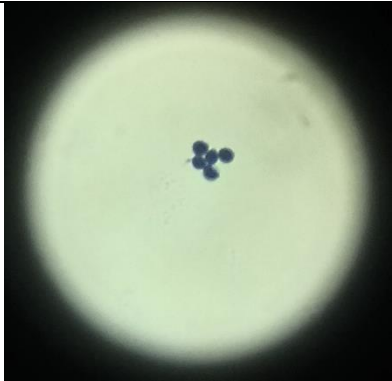


Komposisi :

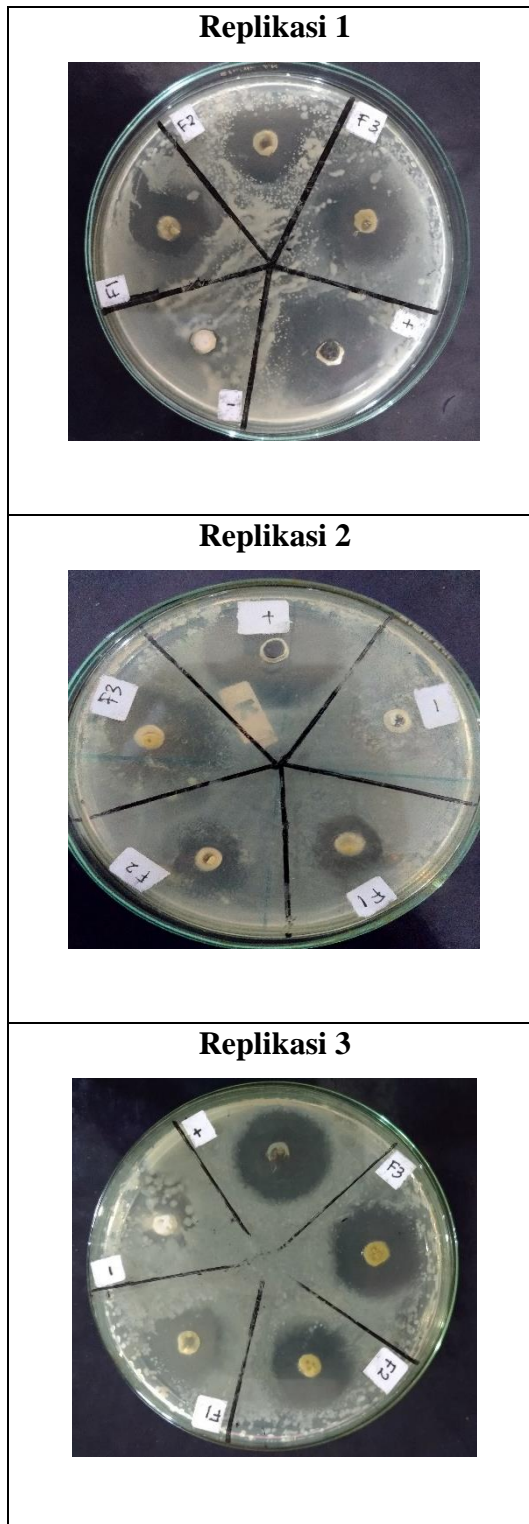
Beff, dehydrate infusion from	300 gram
Casein hydrolysate	17,5 gram
Starch	1,5 gram
Agar-agar	17 gram
Aquadest ad	1000 ml

Cara pembuatan :

Sebanyak 38 gram media MHA ditimbang dan ditambahkan aquadest hingga 1000 ml kemudian dipanaskan hingga larut. Media disterilisasi menggunakan autoclave selama 15 menit pada suhu 121°C.

Lampiran 27. Hasil identifikasi bakteri *Staphylococcus aureus*

Media selektif	
	
Pewarnaan Gram	
	
Katalase	Koagulase
	

Lampiran 28. Hasil uji aktivitas antibakteri secara difusi sumuran

Lampiran 29. Data statistik uji aktivitas antibakteri

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for Diameter_Zona_Hambat	.149	15	.200*	.965	15	.780

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

a. Lilliefors Significance Correction

Nilai sig >0,05 data terdistribusi normal

Uji Homogenitas

Test of Homogeneity of Variances

Diameter daya hambat

Levene Statistic	df1	df2	Sig.
1.845	4	10	.197

Nilai sig >0,05 data terdistribusi homogen, pengujian dilanjutkan dengan uji parametric oneway anova

One way Anova

ANOVA

Diameter daya hambat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	568.790	4	142.198	126.077	.000
Within Groups	11.279	10	1.128		
Total	580.069	14			

Nilai sig. <0,05 menunjukkan terdapat perbedaan nyata atau signifikan

Pengujian post hoc Tukey

Multiple Comparisons

Dependent Variable: Diameter daya hambat

Tukey HSD

(I) Sampel uji	(J) Sampel uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula 1	Formula 2	-1.11000	.86713	.708	-3.9638	1.7438
	Formula 3	-4.11333*	.86713	.005	-6.9671	-1.2596
	Kontrol positif	-8.78000*	.86713	.000	-11.6338	-5.9262
	kontrol negatif	9.88667*	.86713	.000	7.0329	12.7404
Formula 2	Formula 1	1.11000	.86713	.708	-1.7438	3.9638
	Formula 3	-3.00333*	.86713	.038	-5.8571	-.1496
	Kontrol positif	-7.67000*	.86713	.000	-10.5238	-4.8162
	kontrol negatif	10.99667*	.86713	.000	8.1429	13.8504
Formula 3	Formula 1	4.11333*	.86713	.005	1.2596	6.9671
	Formula 2	3.00333*	.86713	.038	.1496	5.8571
	Kontrol positif	-4.66667*	.86713	.002	-7.5204	-1.8129
	kontrol negatif	14.00000*	.86713	.000	11.1462	16.8538
Kontrol positif	Formula 1	8.78000*	.86713	.000	5.9262	11.6338
	Formula 2	7.67000*	.86713	.000	4.8162	10.5238
	Formula 3	4.66667*	.86713	.002	1.8129	7.5204
	kontrol negatif	18.66667*	.86713	.000	15.8129	21.5204
kontrol negatif	Formula 1	-9.88667*	.86713	.000	-12.7404	-7.0329
	Formula 2	-10.99667*	.86713	.000	-13.8504	-8.1429
	Formula 3	-14.00000*	.86713	.000	-16.8538	-11.1462
	Kontrol positif	-18.66667*	.86713	.000	-21.5204	-15.8129

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Diameter daya hambat

Tukey HSD^a

Sampel uji	N	Subset for alpha = 0.05			
		1	2	3	4
kontrol negatif	3	1.8900			
Formula 1	3		11.7767		
Formula 2	3		12.8867		
Formula 3	3			15.8900	
Kontrol positif	3				20.5567
Sig.		1.000	.708	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.