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Lampiran 1. Surat Keterangan Determinasi Tanaman



KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

BADAN PENELITIAN DAN PENGEMBANGAN KESEHATAN

BALAI BESAR PENELITIAN DAN PENGEMBANGAN

TANAMAN OBAT DAN OBAT TRADISIONAL

Jalan Lawu No.11 Tawamangu, Karanganyar, Jawa Tengah 57792

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Nomor : KM.04.02/2/2249/2021

05 Oktober 2021

Lampiran : -

Hal : Keterangan Determinasi

Yth. Dekan Fakultas Farmasi Universitas Setia Budi
Jalan Letjend. Sutoyo Solo 57127

Merujuk surat Saudara nomor: 400/H6 – 04/23.08.2021 tanggal 23 Agustus 2021 hal permohonan determinasi, dengan ini kami sampaikan bahwa hasil determinasi sampel tanaman sebagai berikut:

Nama Pemohon : Fadhillah Nur Rohmah
Nama Sampel : Dlingo
Sampel : Segar
Spesies : *Acorus calamus* L.
Sinonim : *Acorus calamus* var. *americanus* Raf.;
Acorus calamus var. *angustatus* Besser
Familia : Acoraceae
Penanggung Jawab : Isna Jati Asiyah, M.Sc.

Hasil determinasi tersebut hanya mencakup sampel tanaman yang telah dikirimkan ke B2P2TOOT.

Atas perhatian Saudara, kami sampaikan terima kasih.

Kepala Balai Besar Penelitian
dan Pengembangan Tanaman Obat
dan Obat Tradisional
Tawangmangu,



Akhmad Saikhu, S.K.M.,
M.Sc.PH.
NIP 196805251992031004

Tembusan :

-

Lampiran 2. Gambar tanaman dlingo (*Acorus calamus* L.)



Tanaman dlingo



Daun dlingo kering



Serbuk daun dlingo



Ekstrak daun dlingo

Lampiran 3. Gambar alat penelitian



Perkolasi



Vacum Rotary Evaporator



Moisture Balance



Oven



Autoclave



Inkubator



Vortex



pH meter



Mikroskop

Lampiran 4. Uji mutu fisik

Uji homogenitas



F II

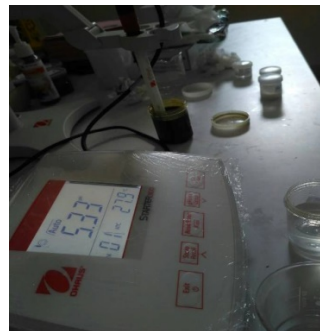
F III



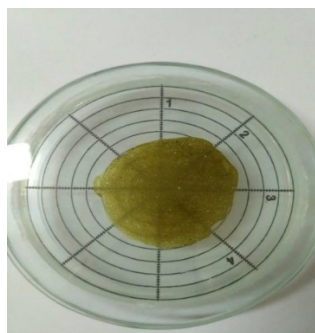
Uji viskositas



Uji pH



Uji daya sebar



Uji daya lekat



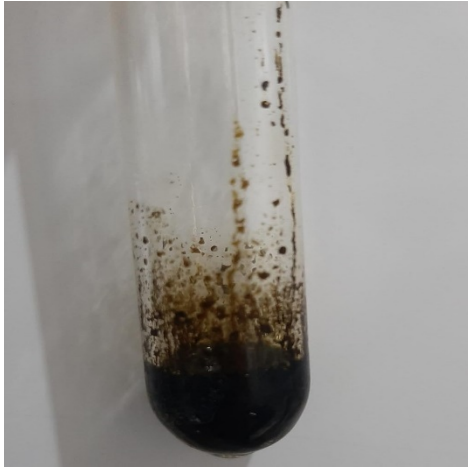
Lampiran 5. Hasil uji kandungan kimia

Alkaloid

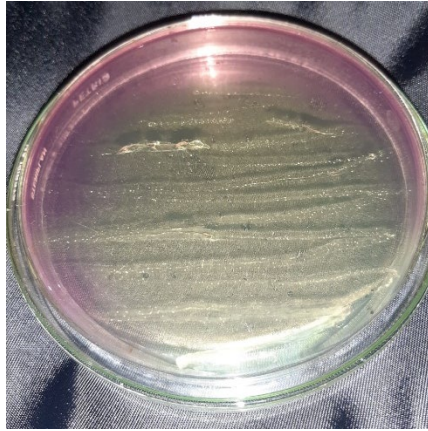
Flavonoid

Saponin

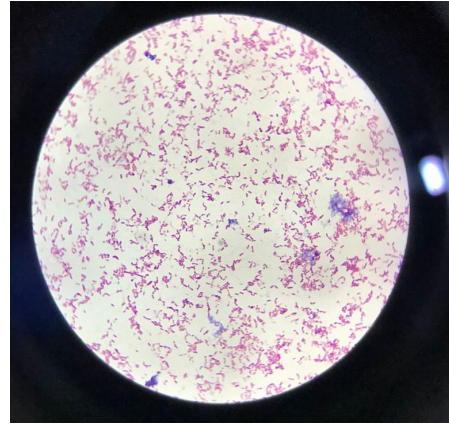
Tanin

Lampiran 6. Uji bebas etanol

Lampiran 7. Gambar hasil identifikasi *Staphylococcus aureus*



Uji makroskopis *S. aureus* pada media MSA



Pewarnaan Gram



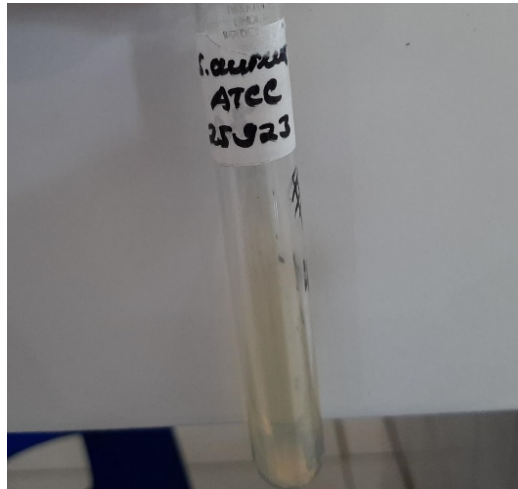
Uji katalase

Uji koagulase

Lampiran 8. Formula deodoran roll on ekstrak daun dlingo



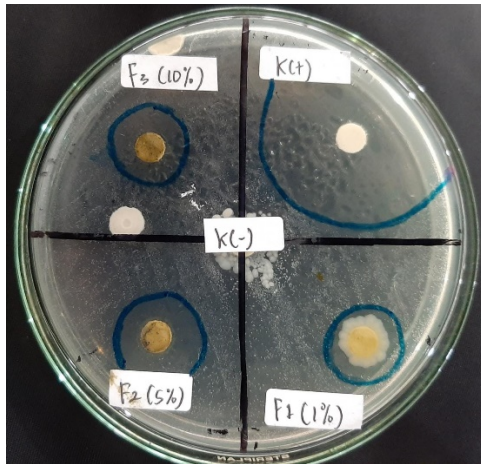
Lampiran 9. Suspensi bakteri *Staphylococcus aureus*



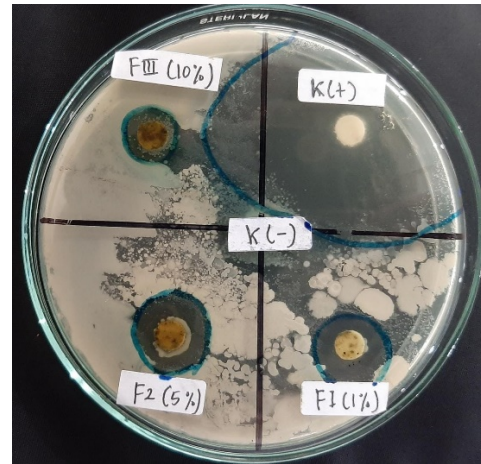
Biakan murni *Staphylococcus aureus*

Suspensi bakteri *S. aureus* dibandingkan dengan standar *Mc Farland 0,5*

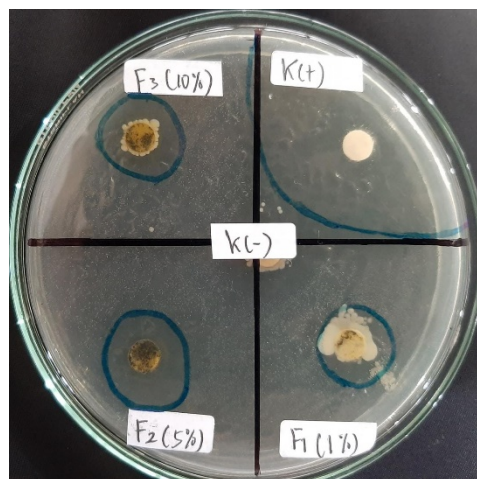
Lampiran 10. Hasil pengujian aktivitas antibakteri ekstrak daun dlingo terhadap *Staphylococcus aureus*



Replikasi 1

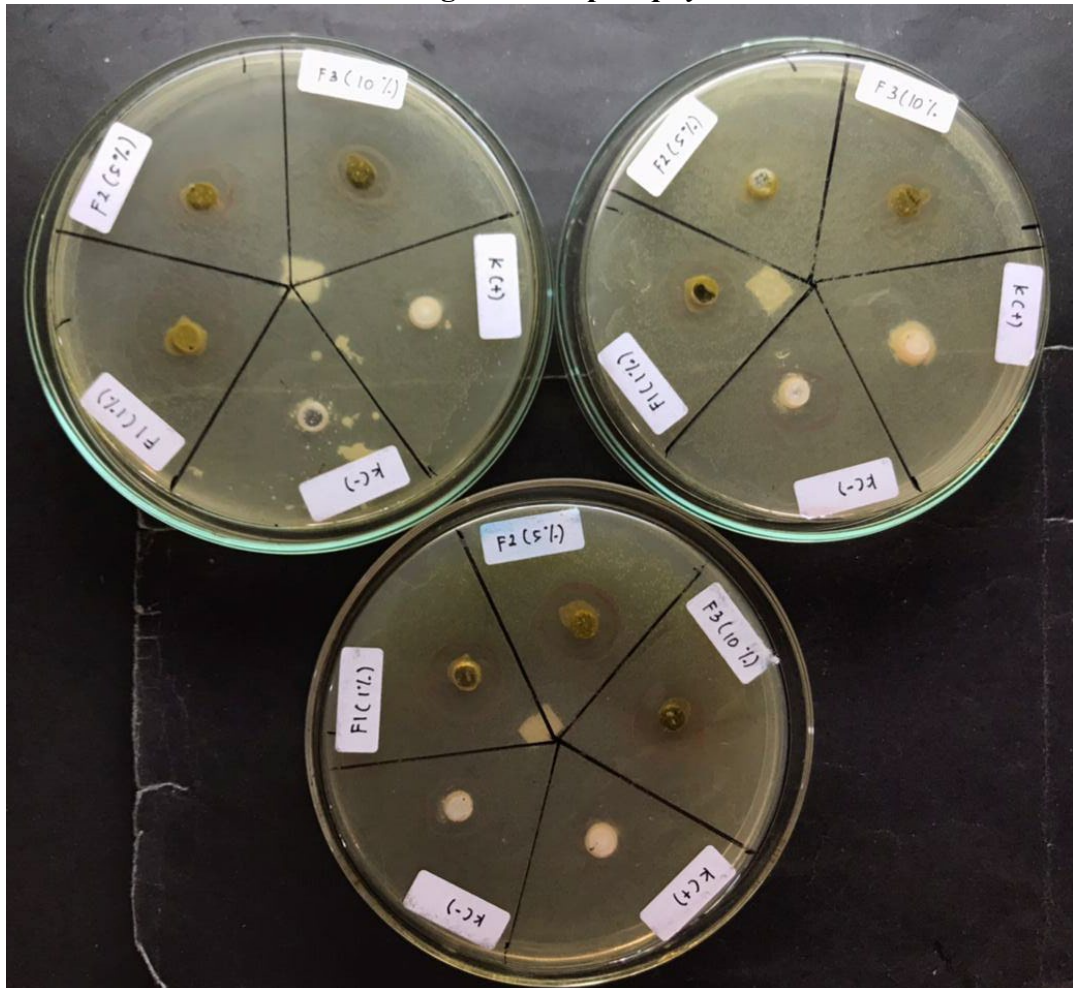


Replikasi 2



Replikasi 3

Lampiran 11. Hasil pengujian aktivitas antibakteri formula deodoran *roll on* ekstrak daun dlingo terhadap *Staphylococcus aureus*



Replikasi 1
Replikasi 2
Replikasi 3

Lampiran 12. Perhitungan persentase rendemen daun dlingo

Bahan awal (g)	Simplisia kering (g)	Rendemen (%)
22.100	4.000	18,09%

$$\begin{aligned}
 \text{Rendemen simplisia kering} &= \frac{\text{Bobot kering (gram)}}{\text{Bobot basah (gram)}} \times 100\% \\
 &= \frac{4000}{22100} \times 100\% \\
 &= 18,09\%
 \end{aligned}$$

Simplisia kering (g)	Berat serbuk (g)	Rendemen (%)
4000	2100	52,5%

$$\begin{aligned}
 \text{Rendemen berat serbuk} &= \frac{\text{Bobot serbuk (gram)}}{\text{Bobot kering (gram)}} \times 100\% \\
 &= \frac{2100}{4000} \times 100\% \\
 &= 52,5\%
 \end{aligned}$$

Serbuk daun dlingo (g)	Ekstrak kental (g)	Rendemen (%)
2100	406	19,33%

$$\begin{aligned}
 \text{Rendemen ekstrak kental} &= \frac{\text{Bobot ekstrak (gram)}}{\text{Bobot serbuk (gram)}} \times 100\% \\
 &= \frac{406}{2100} \times 100\% \\
 &= 19,33\%
 \end{aligned}$$

Lampiran 13. Perhitungan penetapan susut pengeringan serbuk daun dlingo

No	Berat serbuk (gram)	Kadar air (%)
1	2,0	9,5
2	2,0	9,4
3	2,0	9,5
Rata-rata $\pm$ SD		9,47 $\pm$ 0,05 %

$$\text{Rata-rata susut pengeringan} = \frac{9,5+9,4+9,5}{3} = 9,47\%$$

Lampiran 14. Perhitungan kadar air serbuk daun dlingo menggunakan metode destilasi

Replikasi	Berat serbuk (g)	Volume air (mL)	Kadar air (%b/v)
1	20	1,2	6
2	20	1,3	6,5
3	20	1,5	7,5
	Rata-rata		6,6

$$\text{Kadar air serbuk} = \frac{\text{volume air (mL)}}{\text{Berat serbuk}} \times 100\%$$

$$\text{Replikasi 1} = \frac{1,2 \text{ mL}}{20 \text{ g}} \times 100\% = 6\%$$

$$\text{Replikasi 2} = \frac{1,3 \text{ mL}}{20 \text{ g}} \times 100\% = 6,5\%$$

$$\text{Replikasi 3} = \frac{1,5 \text{ mL}}{20 \text{ g}} \times 100\% = 7,5\%$$

$$\text{Rata-rata kadar air serbuk} = \frac{6+6,5+7,5}{3} = 6,6\%$$

Lampiran 15. Perhitungan kadar air ekstrak daun dlingo menggunakan metode gravimetri

Replikasi	Berat ekstrak awal (g)	Berat ekstrak akhir (g)	Kadar air (%b/v)
1	10,383	9,521	8,30
2	10,167	9,292	8,60
3	10,410	9,542	8,33
Rata-rata			8,41

$$\text{Kadar air ekstrak} = \frac{\text{Berat sebelum pengeringan} - \text{berat setelah pengeringan (g)}}{\text{Berat sebelum pengeringan (g)}} \times 100\%$$

$$\text{Replikasi 1} = \frac{10,383 - 9,521 \text{ (g)}}{10,383 \text{ (g)}} \times 100\% = 8,30\%$$

$$\text{Replikasi 2} = \frac{10,167 - 9,292 \text{ (g)}}{10,167} \times 100\% = 8,60\%$$

$$\text{Replikasi 3} = \frac{10,410 - 9,542 \text{ (g)}}{10,410} \times 100\% = 8,33\%$$

$$\text{Rata-rata kadar air ekstrak} = \frac{8,30 + 8,60 + 8,33}{3} = 8,41\%$$

Lampiran 16. Hasil uji statistik daya hambat ekstrak daun dlingo *Shapiro Wilk, Oneway ANOVA, dan Post Hoc*

Daya hambat

Tests of Normality ^b							
	Kelompok uji	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Daya hambat	F I	,175	3	.	1,000	3	1,000
	F II	,175	3	.	1,000	3	1,000
	F III	,175	3	.	1,000	3	1,000
	K (+)	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

b. Daya hambat is constant when Kelompok uji = K (-). It has been omitted.

Oneway

Descriptives

Daya hambat

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F I	3	17,00	1,000	,577	14,52	19,48	16	18
F II	3	19,00	1,000	,577	16,52	21,48	18	20
F III	3	16,00	1,000	,577	13,52	18,48	15	17
K (-)	3	,00	,000	,000	,00	,00	0	0
K (+)	3	47,67	1,528	,882	43,87	51,46	46	49
Total	15	19,93	16,002	4,132	11,07	28,79	0	49

Test of Homogeneity of Variances

Daya hambat

Levene Statistic	df1	df2	Sig.
1,600	4	10	,249

ANOVA

Daya hambat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3574,267	4	893,567	837,719	,000
Within Groups	10,667	10	1,067		
Total	3584,933	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Daya hambat

Tukey HSD

(I) Kelompok uji	(J) Kelompok uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F I	F II	-2,000	,843	,200	-4,78	,78
	F III	1,000	,843	,759	-1,78	3,78
	K (-)	17,000*	,843	,000	14,22	19,78
	K (+)	-30,667*	,843	,000	-33,44	-27,89
F II	F I	2,000	,843	,200	-,78	4,78
	F III	3,000*	,843	,033	,22	5,78
	K (-)	19,000*	,843	,000	16,22	21,78
	K (+)	-28,667*	,843	,000	-31,44	-25,89
F III	F I	-1,000	,843	,759	-3,78	1,78
	F II	-3,000*	,843	,033	-5,78	-,22
	K (-)	16,000*	,843	,000	13,22	18,78
	K (+)	-31,667*	,843	,000	-34,44	-28,89
K (-)	F I	-17,000*	,843	,000	-19,78	-14,22
	F II	-19,000*	,843	,000	-21,78	-16,22
	F III	-16,000*	,843	,000	-18,78	-13,22
	K (+)	-47,667*	,843	,000	-50,44	-44,89
K (+)	F I	30,667*	,843	,000	27,89	33,44
	F II	28,667*	,843	,000	25,89	31,44
	F III	31,667*	,843	,000	28,89	34,44
	K (-)	47,667*	,843	,000	44,89	50,44

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

Homogeneous Subsets

Daya hambat

Tukey HSD^a

Kelompok uji	N	Subset for alpha = 0.05			
		1	2	3	4
K (-)	3	,00			
F III	3		16,00		
F I	3		17,00	17,00	
F II	3			19,00	
K (+)	3				47,67
Sig.		1,000	,759	,200	1,000

Means for groups in homogeneous subsets are displayed.

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

Lampiran 17. Hasil uji statistik pH *Shapiro Wilk*, Oneway ANOVA, Post Hoc, dan Paired samples t-test

a) Hasil uji pH hari ke-0 sampai hari ke-21

Formula	Replikasi	Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21
I	1	5,51	5,45	5,39	5,35
	2	5,51	5,45	5,38	5,36
	3	5,52	5,45	5,39	5,35
II	1	6,04	5,54	5,92	5,85
	2	6,04	5,53	5,93	5,84
	3	6,03	5,54	5,92	5,84
III	1	6,85	6,82	6,72	6,65
	2	6,85	6,81	6,71	6,64
	3	6,86	6,81	6,72	6,65
K (-)	1	6,08	6,01	5,86	5,75
	2	6,08	6,01	5,86	5,76
	3	6,08	6,00	5,86	5,76
K (+)	1	5,40	5,40	5,35	5,31
	2	5,41	5,40	5,36	5,31
	3	5,40	5,40	5,36	5,31

b) Rata-rata uji pH

Formula	Nilai pH $\pm$ SD			
	Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21
Formula I	5,51 $\pm$ 0,01	5,45 $\pm$ 0,01	5,39 $\pm$ 0,01	5,35 $\pm$ 0,01
Formula II	6,04 $\pm$ 0,01	5,54 $\pm$ 0,01	5,92 $\pm$ 0,01	5,84 $\pm$ 0,01
Formula III	6,85 $\pm$ 0,01	6,81 $\pm$ 0,01	6,72 $\pm$ 0,01	6,65 $\pm$ 0,01
Kontrol (-)	6,08 $\pm$ 0,01	6,01 $\pm$ 0,01	5,86 $\pm$ 0,01	5,76 $\pm$ 0,01
Kontrol (+)	5,40 $\pm$ 0,01	5,40 $\pm$ 0,01	5,36 $\pm$ 0,01	5,31 $\pm$ 0,01

Explore

Tests of Normality

	Kelompok uji	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
pH	F I	,215	4	.	,946	4	,689
	F II	,355	4	.	,848	4	,218
	F III	,299	4	.	,844	4	,206
	K (-)	,299	4	.	,846	4	,214
	K (+)	,298	4	.	,849	4	,224

a. Lilliefors Significance Correction

Oneway

Descriptives

pH

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F I	4	5,4400	,05292	,02646	5,3558	5,5242	5,39	5,51
F II	4	5,8525	,21654	,10827	5,5079	6,1971	5,54	6,04
F III	4	6,7750	,06557	,03279	6,6707	6,8793	6,72	6,85
K (-)	4	5,9525	,11057	,05528	5,7766	6,1284	5,86	6,08
K (+)	4	5,3750	,03000	,01500	5,3273	5,4227	5,34	5,40
Total	20	5,8790	,52435	,11725	5,6336	6,1244	5,34	6,85

Test of Homogeneity of Variances

pH

Levene Statistic	df1	df2	Sig.
3,412	4	15	,036

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5,023	4	1,256	93,543	,000
Within Groups	,201	15	,013		
Total	5,224	19			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: pH

Tukey HSD

(I) Kelompok uji	(J) Kelompok uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F I	F II	-,41250*	,08192	,001	-,6655	-,1595
	F III	-1,33500*	,08192	,000	-1,5880	-1,0820
	K (-)	-,51250*	,08192	,000	-,7655	-,2595
	K (+)	,06500	,08192	,929	-,1880	,3180
F II	F I	,41250*	,08192	,001	,1595	,6655
	F III	-,92250*	,08192	,000	-1,1755	-,6695

	K (-)	-,10000	,08192	,740	-,3530	,1530
	K (+)	,47750*	,08192	,000	,2245	,7305
F III	F I	1,33500*	,08192	,000	1,0820	1,5880
	F II	,92250*	,08192	,000	,6695	1,1755
	K (-)	,82250*	,08192	,000	,5695	1,0755
	K (+)	1,40000*	,08192	,000	1,1470	1,6530
K (-)	F I	,51250*	,08192	,000	,2595	,7655
	F II	,10000	,08192	,740	-,1530	,3530
	F III	-,82250*	,08192	,000	-1,0755	-,5695
	K (+)	,57750*	,08192	,000	,3245	,8305
K (+)	F I	-,06500	,08192	,929	-,3180	,1880
	F II	-,47750*	,08192	,000	-,7305	-,2245
	F III	-1,40000*	,08192	,000	-1,6530	-1,1470
	K (-)	-,57750*	,08192	,000	-,8305	-,3245

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

Homogeneous Subsets

pH

Tukey HSD^a

Kelompok uji	N	Subset for alpha = 0.05		
		1	2	3
K (+)	4	5,3750		
F I	4	5,4400		
F II	4		5,8525	
K (-)	4		5,9525	
F III	4			6,7750
Sig.		,929	,740	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

T-Test

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Hari ke-0	5,9760	5	,58089	,25978
Hari ke-21	5,7820	5	,54006	,24152

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Hari ke-0 & Hari ke-21	5	,991	,001

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	Hari ke-0 - Hari ke-21	,19400	,08706	,03894	,08590	,30210	4,983	4	,008

Lampiran 18. Hasil uji statistik viskositas *Shapiro Wilk*, *Oneway ANOVA*, *Post Hoc*, dan *Paired samples t-test*

a) Hasil uji viskositas hari ke-0 sampai hari ke-21

Formula	Replikasi	Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21
I	1	3,1	3,3	3,1	3,1
	2	3,2	3,4	3,0	3,0
	3	3,2	3,4	3,1	3,0
II	1	3,7	3,8	3,7	3,6
	2	3,6	3,9	3,6	3,6
	3	3,7	3,9	3,7	3,5
III	1	3,9	4,1	3,8	3,7
	2	4,0	4,1	3,9	3,7
	3	3,9	4,0	3,8	3,8
K (-)	1	3,0	2,8	2,7	2,5
	2	3,1	2,8	2,6	2,6
	3	3,1	2,9	2,7	2,5
K (+)	1	3,3	3,4	3,2	3,2
	2	3,2	3,4	3,3	3,1
	3	3,3	3,5	3,3	3,2

b) Rata-rata uji viskositas

Formula	Nilai viskositas (dPas) $\pm$ SD			
	Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21
Formula I	3,2 $\pm$ 0,05	3,4 $\pm$ 0,05	3,1 $\pm$ 0,05	3,0 $\pm$ 0,05
Formula II	3,7 $\pm$ 0,05	3,9 $\pm$ 0,05	3,7 $\pm$ 0,05	3,6 $\pm$ 0,05
Formula III	3,9 $\pm$ 0,05	4,1 $\pm$ 0,05	3,8 $\pm$ 0,05	3,7 $\pm$ 0,05
Kontrol (-)	3,1 $\pm$ 0,05	2,8 $\pm$ 0,05	2,7 $\pm$ 0,05	2,5 $\pm$ 0,05
Kontrol (+)	3,3 $\pm$ 0,05	3,4 $\pm$ 0,05	3,3 $\pm$ 0,05	3,2 $\pm$ 0,05

Explore

Tests of Normality

	Kelompok uji	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Viskositas	F I	,192	4	.	,971	4	,850
	F II	,329	4	.	,895	4	,406
	F III	,192	4	.	,971	4	,850
	K (-)	,210	4	.	,982	4	,911
	K (+)	,250	4	.	,945	4	,683

a. Lilliefors Significance Correction

Oneway

Descriptives

Viskositas

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F I	4	3,175	,1708	,0854	2,903	3,447	3,0	3,4
F II	4	3,725	,1258	,0629	3,525	3,925	3,6	3,9
F III	4	3,875	,1708	,0854	3,603	4,147	3,7	4,1
K (-)	4	2,775	,2500	,1250	2,377	3,173	2,5	3,1
K (+)	4	3,300	,0816	,0408	3,170	3,430	3,2	3,4
Total	20	3,370	,4318	,0965	3,168	3,572	2,5	4,1

Test of Homogeneity of Variances

Viskositas

Levene Statistic	df1	df2	Sig.
,925	4	15	,475

ANOVA

Viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,112	4	,778	27,140	,000
Within Groups	,430	15	,029		
Total	3,542	19			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Viskositas

Tukey HSD

(I) Kelompok uji	(J) Kelompok uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F I	F II	-,5500*	,1197	,003	-,920	-,180
	F III	-,7000*	,1197	,000	-1,070	-,330
	K (-)	,4000*	,1197	,031	,030	,770
	K (+)	-,1250	,1197	,831	-,495	,245
F II	F I	,5500*	,1197	,003	,180	,920
	F III	-,1500	,1197	,722	-,520	,220

	K (-)	,9500*	,1197	,000	,580	1,320
	K (+)	,4250*	,1197	,021	,055	,795
F III	F I	,7000*	,1197	,000	,330	1,070
	F II	,1500	,1197	,722	-,220	,520
	K (-)	1,1000*	,1197	,000	,730	1,470
	K (+)	,5750*	,1197	,002	,205	,945
K (-)	F I	-,4000*	,1197	,031	-,770	-,030
	F II	-,9500*	,1197	,000	-1,320	-,580
	F III	-1,1000*	,1197	,000	-1,470	-,730
	K (+)	-,5250*	,1197	,004	-,895	-,155
K (+)	F I	,1250	,1197	,831	-,245	,495
	F II	-,4250*	,1197	,021	-,795	-,055
	F III	-,5750*	,1197	,002	-,945	-,205
	K (-)	,5250*	,1197	,004	,155	,895

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

Homogeneous Subsets

Viskositas

Tukey HSD^a

Kelompok uji	N	Subset for alpha = 0.05		
		1	2	3
K (-)	4	2,775		
F I	4		3,175	
K (+)	4		3,300	
F II	4			3,725
F III	4			3,875
Sig.		1,000	,831	,722

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

T-Test

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Hari ke-0	3,440	5	,3435	,1536
Hari ke-21	3,200	5	,4848	,2168

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Hari ke-0 & Hari ke-21	5	,931	,022

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	Hari ke-0 - Hari ke-21	,2400	,2074	,0927	-,0175	,4975	2,588	4	,061

**Lampiran 19. Hasil uji statistik daya sebar *Shapiro Wilk*, *Oneway ANOVA*,
dan *Post Hoc***

Rata-rata uji daya sebar

Formula	Beban	Diameter daya sebar (cm)				Rata-rata $\pm$ SD
		Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21	
I	tb	5,3	5,6	5,6	5,5	5,5 $\pm$ 0,14
	50 gram	6,4	6,4	6,2	6,3	6,3 $\pm$ 0,09
	100 gram	6,7	6,8	6,6	6,5	6,7 $\pm$ 0,12
	150 gram	7,0	7,0	6,9	7,0	7,0 $\pm$ 0,05
II	tb	5,3	5,5	5,6	5,8	5,6 $\pm$ 0,20
	50 gram	6,3	6,4	6,2	6,5	6,4 $\pm$ 0,12
	100 gram	6,7	6,7	6,6	6,8	6,7 $\pm$ 0,08
	150 gram	6,9	7,0	7,0	7,0	7,0 $\pm$ 0,05
III	tb	5,3	5,5	5,6	5,7	5,5, $\pm$ 0,17
	50 gram	5,9	6,2	6,2	6,5	6,2 $\pm$ 0,24
	100 gram	6,3	6,6	6,7	6,6	6,6 $\pm$ 0,17
	150 gram	6,9	6,9	7,0	7,0	7,0 $\pm$ 0,05
K (-)	tb	5,5	5,7	5,8	5,9	5,7 $\pm$ 0,17
	50 gram	6,2	6,3	6,2	6,3	6,3 $\pm$ 0,05
	100 gram	6,5	6,6	6,7	6,8	6,7 $\pm$ 0,12
	150 gram	6,9	7,0	7,0	7,0	6,9 $\pm$ 0,05
K (+)	tb	6,0	6,1	6,0	6,2	6,1 $\pm$ 0,09
	50 gram	6,5	6,5	6,3	6,5	6,5 $\pm$ 0,1
	100 gram	6,8	6,9	6,7	6,9	6,9 $\pm$ 0,09
	150 gram	7,0	7,0	6,9	7,0	7,0 $\pm$ 0,05

Explore

Tests of Normality

	Kelompok uji	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Daya Sebar	F I	,155	4	.	,998	4	,995
	F II	,151	4	.	,993	4	,972
	F III	,237	4	.	,939	4	,650
	K (-)	,283	4	.	,863	4	,272
	K (+)	,151	4	.	,993	4	,972

a. Lilliefors Significance Correction

Oneway

Tests of Normality

	Kelompok uji	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Daya Sebar	F I	,155	4	.	,998	4	,995
	F II	,151	4	.	,993	4	,972
	F III	,237	4	.	,939	4	,650
	K (-)	,283	4	.	,863	4	,272
	K (+)	,151	4	.	,993	4	,972

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Daya Sebar

Levene Statistic	df1	df2	Sig.
1,500	4	15	,252

ANOVA

Daya Sebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,302	4	1,575	41,643	,000
Within Groups	,567	15	,038		
Total	6,869	19			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Daya Sebar

Tukey HSD

(I) Kelompok uji	(J) Kelompok uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F I	F II	,9000*	,1375	,000	,475	1,325
	F III	,9750*	,1375	,000	,550	1,400
	K (-)	1,4000*	,1375	,000	,975	1,825
	K (+)	,0000	,1375	1,000	-,425	,425
F II	F I	-,9000*	,1375	,000	-1,325	-,475
	F III	,0750	,1375	,981	-,350	,500
	K (-)	,5000*	,1375	,018	,075	,925
	K (+)	-,9000*	,1375	,000	-1,325	-,475
F III	F I	-,9750*	,1375	,000	-1,400	-,550

	F II	-,0750	,1375	,981	-,500	,350
	K (-)	,4250*	,1375	,050	,000	,850
	K (+)	-,9750*	,1375	,000	-1,400	-,550
K (-)	F I	-1,4000*	,1375	,000	-1,825	-,975
	F II	-,5000*	,1375	,018	-,925	-,075
	F III	-,4250*	,1375	,050	-,850	,000
	K (+)	-1,4000*	,1375	,000	-1,825	-,975
K (+)	F I	,0000	,1375	1,000	-,425	,425
	F II	,9000*	,1375	,000	,475	1,325
	F III	,9750*	,1375	,000	,550	1,400
	K (-)	1,4000*	,1375	,000	,975	1,825

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

Homogeneous Subsets

Daya Sebar

Tukey HSD^a

Kelompok uji	N	Subset for alpha = 0.05		
		1	2	3
K (-)	4	5,550		
F III	4		5,975	
F II	4		6,050	
K (+)	4			6,950
F I	4			6,950
Sig.		1,000	,981	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

**Lampiran 20. Hasil uji statistik uji daya lekat *Shapiro Wilk*, *Oneway ANOVA*,
dan *Post Hoc***

a) Hasil uji daya lekat hari ke-0 sampai hari ke-21

Formula	Replikasi	Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21
I	1	1,58	1,52	1,48	1,45
	2	1,57	1,53	1,49	1,45
	3	1,58	1,52	1,49	1,46
II	1	1,48	1,45	1,43	1,38
	2	1,47	1,46	1,42	1,37
	3	1,47	1,46	1,42	1,38
III	1	1,42	1,38	1,34	1,29
	2	1,41	1,37	1,35	1,30
	3	1,41	1,37	1,34	1,29
K (-)	1	1,05	0,95	0,87	0,81
	2	1,04	0,96	0,86	0,82
	3	1,05	0,95	0,87	0,81
K (+)	1	1,60	1,61	1,52	1,49
	2	1,61	1,60	1,53	1,49
	3	1,61	1,61	1,52	1,48

b) Rata-rata uji daya lekat

Formula	Beban (gram)	Nilai daya lekat (detik) $\pm$ SD			
		Hari ke-0	Hari ke-7	Hari ke-14	Hari ke-21
Formula I	1000	1,58 $\pm$ 0,01	1,52 $\pm$ 0,01	1,49 $\pm$ 0,01	1,46 $\pm$ 0,01
Formula II	1000	1,47 $\pm$ 0,01	1,46 $\pm$ 0,01	1,42 $\pm$ 0,01	1,38 $\pm$ 0,01
Formula III	1000	1,41 $\pm$ 0,01	1,37 $\pm$ 0,01	1,34 $\pm$ 0,01	1,29 $\pm$ 0,01
Kontrol (-)	1000	1,05 $\pm$ 0,01	0,95 $\pm$ 0,01	0,87 $\pm$ 0,01	0,81 $\pm$ 0,01
Kontrol (+)	1000	1,61 $\pm$ 0,01	1,61 $\pm$ 0,01	1,52 $\pm$ 0,01	1,49 $\pm$ 0,01

Explore

Tests of Normality

	Kelompok uji	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Daya Lekat	F I	,192	4	.	,971	4	,850
	F II	,248	4	.	,925	4	,564
	F III	,152	4	.	,997	4	,989
	K (-)	,185	4	.	,981	4	,906
	K (+)	,302	4	.	,827	4	,161

a. Lilliefors Significance Correction

Oneway

Descriptives

Daya Lekat

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F I	4	1,5125	,05123	,02562	1,4310	1,5940	1,46	1,58
F II	4	1,4325	,04113	,02056	1,3671	1,4979	1,38	1,47
F III	4	1,3525	,05058	,02529	1,2720	1,4330	1,29	1,41
K (-)	4	,9200	,10392	,05196	,7546	1,0854	,81	1,05
K (+)	4	1,5575	,06185	,03092	1,4591	1,6559	1,49	1,61
Total	20	1,3550	,24156	,05402	1,2419	1,4681	,81	1,61

Test of Homogeneity of Variances

Daya Lekat

Levene Statistic	df1	df2	Sig.
1,821	4	15	,177

ANOVA

Daya Lekat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,044	4	,261	60,709	,000
Within Groups	,065	15	,004		
Total	1,109	19			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Daya Lekat

Tukey HSD

(I) Kelompok uji	(J) Kelompok uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F I	F II	,08000	,04637	,449	-,0632	,2232
	F III	,16000*	,04637	,025	,0168	,3032
	K (-)	,59250*	,04637	,000	,4493	,7357
	K (+)	-,04500	,04637	,864	-,1882	,0982
F II	F I	-,08000	,04637	,449	-,2232	,0632
	F III	,08000	,04637	,449	-,0632	,2232
	K (-)	,51250*	,04637	,000	,3693	,6557

	K (+)	-,12500	,04637	,102	-,2682	,0182
F III	F I	-,16000*	,04637	,025	-,3032	-,0168
	F II	-,08000	,04637	,449	-,2232	,0632
	K (-)	,43250*	,04637	,000	,2893	,5757
	K (+)	-,20500*	,04637	,004	-,3482	-,0618
K (-)	F I	-,59250*	,04637	,000	-,7357	-,4493
	F II	-,51250*	,04637	,000	-,6557	-,3693
	F III	-,43250*	,04637	,000	-,5757	-,2893
	K (+)	-,63750*	,04637	,000	-,7807	-,4943
K (+)	F I	,04500	,04637	,864	-,0982	,1882
	F II	,12500	,04637	,102	-,0182	,2682
	F III	,20500*	,04637	,004	,0618	,3482
	K (-)	,63750*	,04637	,000	,4943	,7807

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

Homogeneous Subsets

Daya Lekat

Tukey HSD^a

Kelompok uji	N	Subset for alpha = 0.05		
		1	2	3
K (-)	4	,9200		
F III	4		1,3525	
F II	4		1,4325	1,4325
F I	4			1,5125
K (+)	4			1,5575
Sig.		1,000	,449	,102

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

Lampiran 21. Hasil uji statistik daya hambat sediaan deodoran *roll on* Kolmogorov-smirnov, Oneway ANOVA, dan Post Hoc

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya hambat	15	16,73	4,367	9	23
Kelompok uji	15	3,00	1,464	1	5

One-Sample Kolmogorov-Smirnov Test

		Daya hambat	Kelompok uji
N		15	15
Normal Parameters ^{a,b}	Mean	16,73	3,00
	Std. Deviation	4,367	1,464
Most Extreme Differences	Absolute	,169	,153
	Positive	,076	,153
	Negative	-,169	-,153
Test Statistic		,169	,153
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

Descriptives

Daya hambat

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F I	3	20,67	1,528	,882	16,87	24,46	19	22
F II	3	16,67	,577	,333	15,23	18,10	16	17
F III	3	14,00	1,000	,577	11,52	16,48	13	15
K (-)	3	10,67	1,528	,882	6,87	14,46	9	12
K (+)	3	21,67	1,155	,667	18,80	24,54	21	23
Total	15	16,73	4,367	1,127	14,32	19,15	9	23

Test of Homogeneity of Variances

Daya hambat

Levene Statistic	df1	df2	Sig.
,850	4	10	,525

ANOVA

Daya hambat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	252,267	4	63,067	43,000	,000
Within Groups	14,667	10	1,467		
Total	266,933	14			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Daya hambat

Tukey HSD

(I) Kelompok uji	(J) Kelompok uji	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F I	F II	4,000*	,989	,016	,75	7,25
	F III	6,667*	,989	,000	3,41	9,92
	K (-)	10,000*	,989	,000	6,75	13,25
	K (+)	-1,000	,989	,845	-4,25	2,25
F II	F I	-4,000*	,989	,016	-7,25	-,75
	F III	2,667	,989	,124	-,59	5,92
	K (-)	6,000*	,989	,001	2,75	9,25
	K (+)	-5,000*	,989	,004	-8,25	-1,75
F III	F I	-6,667*	,989	,000	-9,92	-3,41
	F II	-2,667	,989	,124	-5,92	,59
	K (-)	3,333*	,989	,044	,08	6,59
	K (+)	-7,667*	,989	,000	-10,92	-4,41
K (-)	F I	-10,000*	,989	,000	-13,25	-6,75
	F II	-6,000*	,989	,001	-9,25	-2,75
	F III	-3,333*	,989	,044	-6,59	-,08
	K (+)	-11,000*	,989	,000	-14,25	-7,75
K (+)	F I	1,000	,989	,845	-2,25	4,25
	F II	5,000*	,989	,004	1,75	8,25
	F III	7,667*	,989	,000	4,41	10,92
	K (-)	11,000*	,989	,000	7,75	14,25

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

Homogeneous Subsets

Daya hambat

Tukey HSD^a

Kelompok uji	N	Subset for alpha = 0.05		
		1	2	3
K (-)	3	10,67		
F III	3		14,00	
F II	3		16,67	
F I	3			20,67
K (+)	3			21,67
Sig.		1,000	,124	,845

Means for groups in homogeneous subsets are displayed.

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

Lampiran 22. Hasil uji statistik stabilitas pH menggunakan *Paired Samples T-Test*

T-Test

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Sebelum Cycling Test	6,1200	4	,55166	,27583
Sesudah Cycling Test	5,9725	4	,55181	,27590

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Sebelum Cycling Test & Sesudah Cycling Test	4	,996	,004

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Lower	Upper								
Pair 1	Sebelum Cycling Test - Sesudah Cycling Test	,14750	,04856	,02428	,07023	,22477	6,075	3	,009

Lampiran 23. Hasil uji statistik stabilitas viskositas menggunakan *Paired Samples T-Test*

T-Test

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Sebelum Cycling Test	3,4750	4	,38622	,19311
Sesudah Cycling Test	3,3250	4	,51881	,25941

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 Sebelum Cycling Test & Sesudah Cycling Test	4	,969	,031

Paired Samples Test

	Paired Sample Test					t	df	Sig. (2-tailed)
	Paired Differences							
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Sebelum Cycling Test - Sesudah Cycling Test	,15000	,17321	,08660	-,12561	,42561	1,732	3	,182