


L
A
M
P
I
R
A
N

LAMPIRAN 1. Hasil determinasi tanaman buah belimbing



**UNIVERSITAS
SETIA BUDI**

UPT-LABORATORIUM

Nomor : 152/DET/UPT-LAB/05.03.2021
Hal : Hasil determinasi tumbuhan
Lamp. : -

Nama Pemesan : Siti Nurul Aliya
NIM : 23175080A
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
Homepage : www.setiabudi.ac.id, e-mail : Info@setiabudi.ac.id

- 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.

Kepala UPT-LAB
Universitas Setia Budi



Asik Gunawan, Amdk

Surakarta, 5 Maret 2021
Penanggung jawab
Determinasi Tumbuhan



Dra. Dewi Sulistyawati. M.Sc.

LAMPIRAN 2. Pembuatan ekstrak buah belimbing wuluh



Buah belimbing wuluh



Serbuk buah belimbing wuluh



Alat rotary evaporator



Ekstrak buah belimbing wuluh

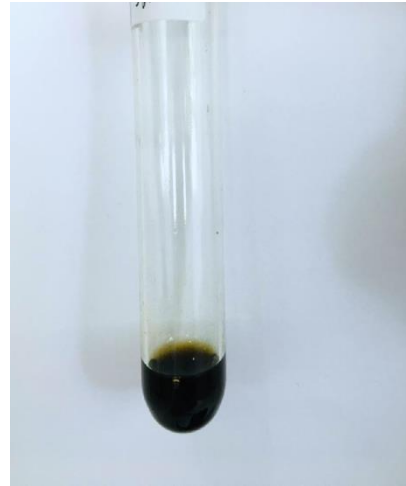
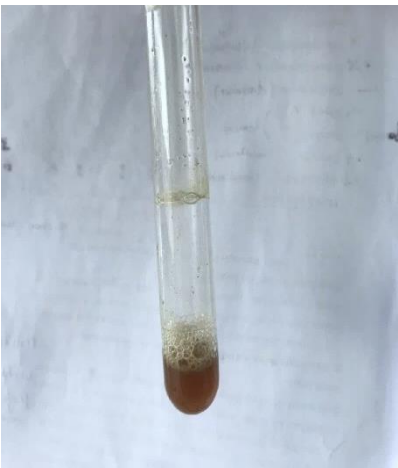
LAMPIRAN 3. Hasil penetapan susut pengeringan serbuk dan ekstrak buah belimbing wuluh

a. Serbuk

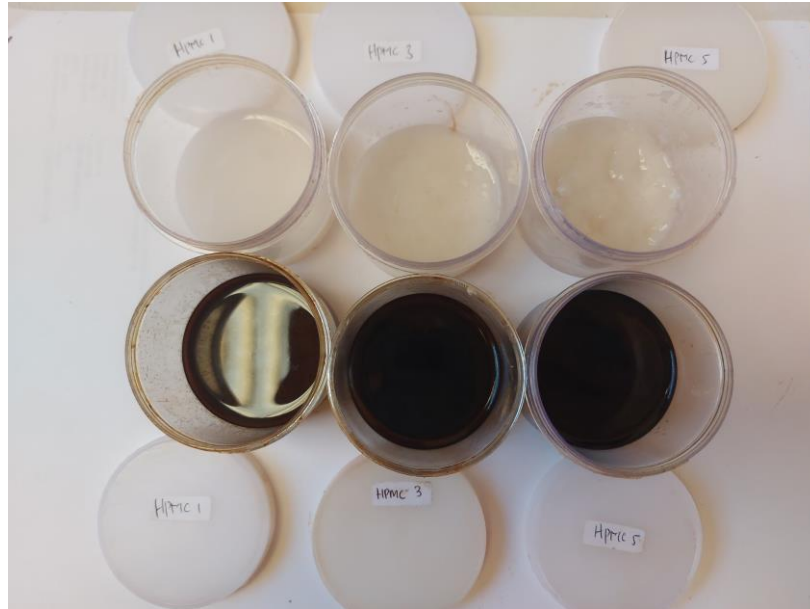


b. Ekstrak



LAMPIRAN 4. Identifikasi kandungan kimia ekstrak buah belimbing wuluh**a. Uji flavonoid****b. Uji tanin****c. Uji saponin****d. Uji alkaloid**

LAMPIRAN 5. Gambar uji mutu fisik sediaan emulgel ekstrak buah belimbing wuluh

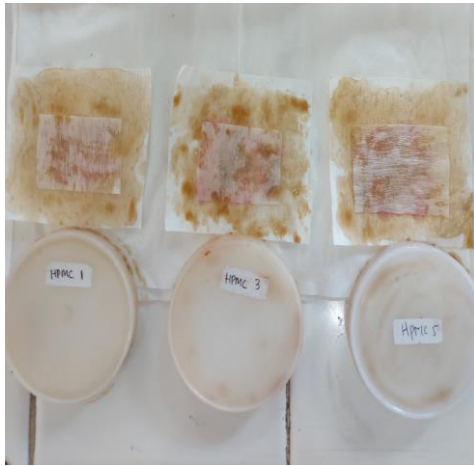
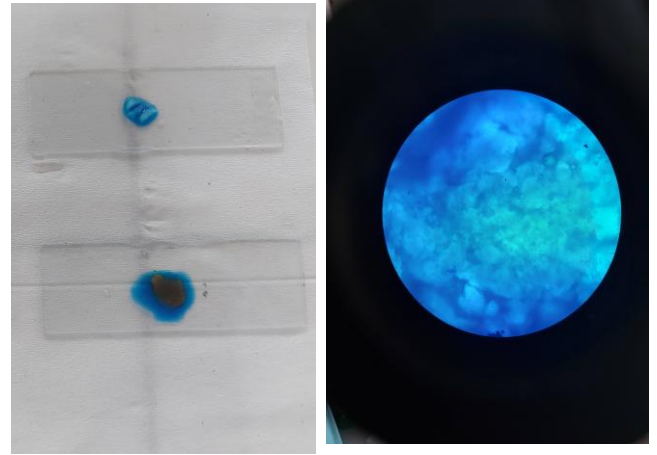
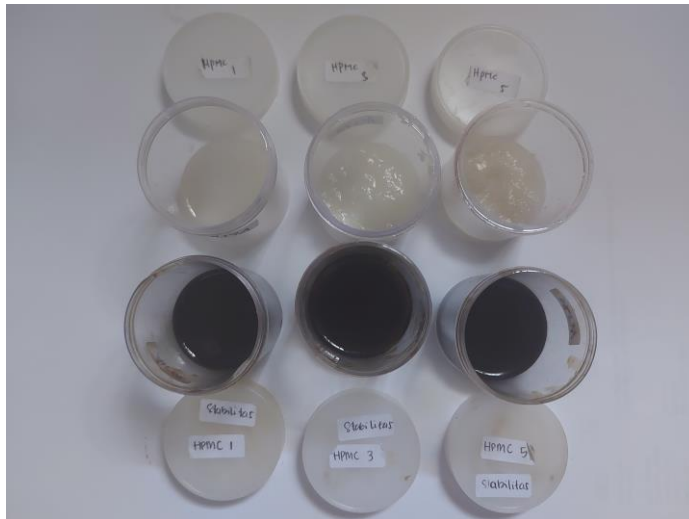


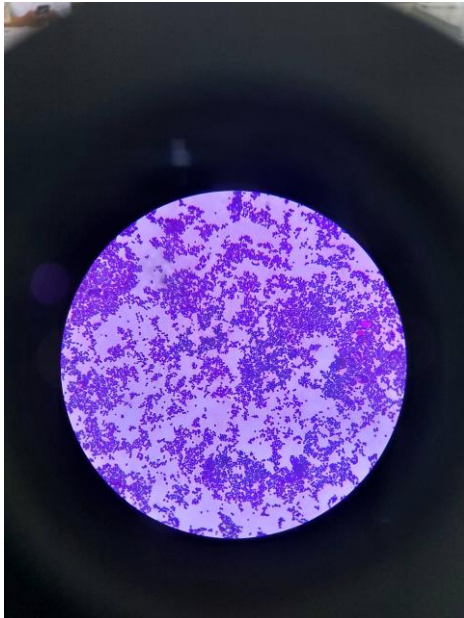
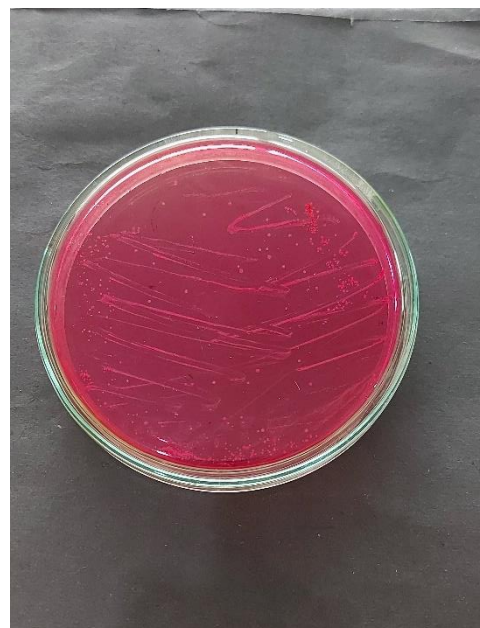
Emulgel kontrol negatif, konsentrasi HPMC 1%, 3%, 5%

a. Uji homogenitas



b. Uji viskositas**c. Uji pH****d. Uji daya lekat****e. Uji daya sebar**

f. Uji daya proteksi**g. Uji tipe emulsi****g. Uji stabilitas**

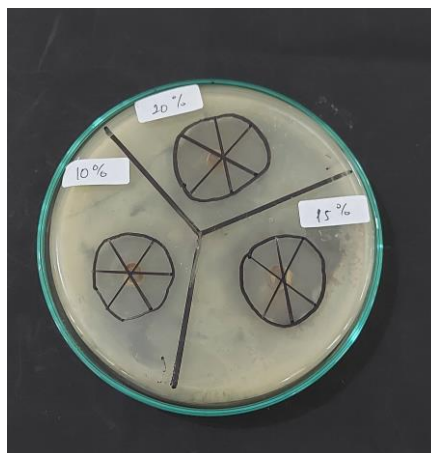
LAMPIRAN 6. Identifikasi bakteri Staphylococcus epidermidis ATCC 12228**a. Uji pewarnaan Gram****b. Uji katalase****c. Uji koagulase****d. MSA(Mannitol salt agar)**

LAMPIRAN 7. Uji aktivitas terhadap antibakteri terhadap *Staphylococcus epidermidis* ATCC 12228

a. Suspensi bakteri *Staphylococcus epidermidis*



d. Hasil pengujian daya hambat bakteri





Replikasi 1



Replikasi 2



Replikasi 3

LAMPIRAN 8. Hasil perhitungan rendemen simplisia dan ekstrak

a. Perhitungan rendemen simplisia

Bobot basah (g)	Bobot kering (g)	Rendemen (%)
12000	900	7,5

$$\begin{aligned}
 \text{Rendemen simplisia} &= \frac{\text{Bobot kering}}{\text{bobot basah}} \times 100\% \\
 &= \frac{900}{12000} \times 100\% \\
 &= 7,5\%
 \end{aligned}$$

b. Perhitungan rendemen serbuk

Bobot kering (g)	Bobot serbuk (g)	Rendemen (%)
900 gram	550 gram	61,11

$$\begin{aligned}
 \text{Rendemen serbuk} &= \frac{\text{Bobot serbuk}}{\text{bobot kering}} \times 100\% \\
 &= \frac{550}{900} \times 100\% \\
 &= 61,11\%
 \end{aligned}$$

c. Perhitungan rendemen ekstrak

Bobot serbuk (g)	Bobot ekstrak (g)	Rendemen (%)
550	110,86	20,15

$$\begin{aligned}
 \text{Rendemen ekstrak} &= \frac{\text{Bobot ekstrak}}{\text{bobot serbuk}} \times 100\% \\
 &= \frac{110,85}{550} \times 100\% \\
 &= 20,15\%
 \end{aligned}$$

LAMPIRAN 9. Data hasil uji mutu fisik sediaan emulgel ekstrak buah belimbing wuluh

a. Uji pH

Waktu	Formula	Replikasi				
		1	2	3	Rata-rata	±SD
Hari ke 1	KN1	7,18	7,16	7,19	7,18	0,02
	KN2	7,27	7,35	7,30	7,31	0,04
	KN3	7,56	7,55	7,60	7,57	0,03
	F1	3,30	3,35	3,31	3,32	0,03
	F2	3,42	3,40	3,45	3,42	0,03
	F3	3,50	3,49	3,51	3,50	0,01
Hari ke 21	KN1	7,14	7,15	7,17	7,15	0,02
	KN2	7,24	7,28	7,26	7,26	0,02
	KN3	7,53	7,50	7,57	7,53	0,04
	F1	3,27	3,33	3,28	3,29	0,03
	F2	3,38	3,37	3,44	3,40	0,04
	F3	3,48	3,47	3,49	3,48	0,01

b. Uji daya lekat

Waktu	Formula	Replikasi				
		1	2	3	Rata-rata	±SD
Hari ke 1	KN1	1,75	1,54	1,70	1,66	0,11
	KN2	2,29	2,25	2,15	2,23	0,07
	KN3	2,65	2,55	2,70	2,63	0,08
	F1	1,50	1,35	1,30	1,38	0,10
	F2	2,00	2,40	2,29	2,23	0,21
	F3	2,80	2,60	2,77	2,72	0,11
Hari ke 21	KN1	1,78	1,50	1,60	1,63	0,14
	KN2	2,25	2,16	2,20	2,20	0,05
	KN3	2,50	2,55	2,65	2,57	0,08
	F1	1,40	1,30	1,29	1,33	0,06
	F2	2,01	2,35	2,20	2,19	0,17
	F3	2,75	2,57	2,69	2,67	0,09

c. Uji daya sebar

Formula	Beban (g)	Waktu (detik)	
		Hari ke-1	Hari ke-21
Kontrol Formula 1	150	6,55±0,02	6,60±0,02
Kontrol Formula 2	150	5,55±0,05	6,06±0,03
Kontrol Formula 3	150	4,90±0,02	4,98±0,04
Formula 1	150	6,65±0,03	6,78±0,08
Formula 2	150	5,95±0,02	6,45±0,03
Formula 3	150	5,78±0,05	6,25±0,03

d. Uji daya proteksi

Wktu	Formula	Replikasi				
		1	2	3	Rata-rata	±SD
Hari ke 1	KN1	60,23	60,27	60,24	60,25	0,02
	KN2	60,36	60,34	60,37	60,36	0,02
	KN3	60,47	60,44	60,42	60,44	0,03
	F1	5,80	5,79	5,85	5,81	0,03
	F2	6,15	6,20	6,18	6,18	0,03
	F3	6,75	6,80	6,74	6,76	0,03
Hari ke 21	KN1	60,19	60,23	60,21	60,21	0,02
	KN2	60,30	60,32	60,34	60,32	0,02
	KN3	60,37	60,40	60,39	60,39	0,02
	F1	5,73	5,78	5,77	5,76	0,03
	F2	6,13	6,17	6,14	6,15	0,02
	F3	6,72	6,77	6,70	6,73	0,04

e. Uji viskositas

Waktu	Formula	Replikasi				
		1	2	3	Rata-rata	±SD
Hari ke 1	KN1	255	240	265	253,33	12,58
	KN2	330	310	335	325,00	13,23
	KN3	360	375	370	368,33	7,64
	F1	250	245	255	250,00	5,00
	F2	315	310	325	316,67	7,64
	F3	355	365	340	353,33	12,58
Hari ke 21	KN1	245	230	255	243,33	12,58
	KN2	325	310	315	316,67	7,64
	KN3	355	365	360	360,00	5,00
	F1	240	230	245	238,33	7,64
	F2	300	320	305	308,33	10,41
	F3	345	355	330	343,33	12,58

f. Stabilitas *freeze thaw*

- Viskositas

Waktu	Formula	Replikasi				
		1	2	3	Rata-rata	±SD
Sebelum	KN1	255	240	265	253,33	12,58
	KN2	330	310	335	325,00	13,23
	KN3	360	375	370	368,33	7,64
	F1	250	245	255	250,00	5,00
	F2	315	310	325	316,67	7,64
	F3	355	365	340	353,33	12,58
Setelah	KN1	240	230	245	238,33	7,64
	KN2	290	285	275	283,33	7,64
	KN3	350	360	345	351,67	7,64
	F1	235	225	245	235,00	10,00
	F2	275	260	255	263,33	10,41
	F3	340	350	330	340,00	10,00

- pH

Waktu	Formula	Replikasi			Rata-rata	±SD
		1	2	3		
Sebelum	KN1	7,18	7,16	7,19	7,18	0,02
	KN2	7,27	7,35	7,30	7,31	0,04
	KN3	7,56	7,55	7,60	7,57	0,03
	F1	3,30	3,35	3,31	3,32	0,03
	F2	3,42	3,40	3,45	3,42	0,03
	F3	3,50	3,49	3,51	3,50	0,01
Sesudah	KN1	7,10	7,15	7,14	7,13	0,03
	KN2	7,20	7,24	7,26	7,23	0,03
	KN3	7,50	7,52	7,54	7,52	0,02
	F1	3,24	3,30	3,26	3,27	0,03
	F2	3,35	3,34	3,40	3,36	0,03
	F3	3,40	3,45	3,45	3,43	0,03

LAMPIRAN 10. Hasil analisis terhadap uji pH, daya lekat, uji daya sebar, uji daya proteksi, dan uji viskositas

a. Uji pH

- Hari ke 1

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
UJI PH HARI KE 1	KN1	,253	3	.	,964	3	,637
	KN2	,232	3	.	,980	3	,726
	KN3	,314	3	.	,893	3	,363
	F1	,314	3	.	,893	3	,363
	F2	,219	3	.	,987	3	,780
	F3	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
UJI PH HARI KE 1	Based on Mean	1,315	5	12	,321
	Based on Median	,457	5	12	,801

Based on Median and with adjusted df	,457	5	8,274	,798
Based on trimmed mean	1,239	5	12	,350

ANOVA

UJI PH HARI KE 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	70,028	5	14,006	21008,388	,000
Within Groups	,008	12	,001		
Total	70,036	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: UJI PH HARI KE 1

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	-,13000*	,02108	,001	-,2008	-,0592
	KN3	-,39333*	,02108	,000	-,4641	-,3225
	F1	3,85667*	,02108	,000	3,7859	3,9275
	F2	3,75333*	,02108	,000	3,6825	3,8241
	F3	3,67667*	,02108	,000	3,6059	3,7475
KN2	KN1	,13000*	,02108	,001	,0592	,2008
	KN3	-,26333*	,02108	,000	-,3341	-,1925
	F1	3,98667*	,02108	,000	3,9159	4,0575
	F2	3,88333*	,02108	,000	3,8125	3,9541
	F3	3,80667*	,02108	,000	3,7359	3,8775
KN3	KN1	,39333*	,02108	,000	,3225	,4641
	KN2	,26333*	,02108	,000	,1925	,3341
	F1	4,25000*	,02108	,000	4,1792	4,3208
	F2	4,14667*	,02108	,000	4,0759	4,2175
	F3	4,07000*	,02108	,000	3,9992	4,1408

F1	KN1	-3,85667*	,02108	,000	-3,9275	-3,7859
	KN2	-3,98667*	,02108	,000	-4,0575	-3,9159
	KN3	-4,25000*	,02108	,000	-4,3208	-4,1792
	F2	-,10333*	,02108	,004	-,1741	-,0325
	F3	-,18000*	,02108	,000	-,2508	-,1092
F2	KN1	-3,75333*	,02108	,000	-3,8241	-3,6825
	KN2	-3,88333*	,02108	,000	-3,9541	-3,8125
	KN3	-4,14667*	,02108	,000	-4,2175	-4,0759
	F1	,10333*	,02108	,004	,0325	,1741
	F3	-,07667*	,02108	,031	-,1475	-,0059
F3	KN1	-3,67667*	,02108	,000	-3,7475	-3,6059
	KN2	-3,80667*	,02108	,000	-3,8775	-3,7359
	KN3	-4,07000*	,02108	,000	-4,1408	-3,9992
	F1	,18000*	,02108	,000	,1092	,2508
	F2	,07667*	,02108	,031	,0059	,1475

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

Homogeneous Subsets

UJI PH HARI KE 1

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
F1	3	3,3200					
F2	3		3,4233				
F3	3			3,5000			
KN1	3				7,1767		
KN2	3					7,3067	
KN3	3						7,5700
Sig.		1,000	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

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

- Hari ke 21

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
UJI PH HARI KE	KN1	,253	3	.	,964	3	,637
21	KN2	,175	3	.	1,000	3	1,000
	KN3	,204	3	.	,993	3	,843
	F1	,328	3	.	,871	3	,298
	F2	,337	3	.	,855	3	,253
	F3	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Oneway**Test of Homogeneity of Variances**

		Levene			
		Statistic	df1	df2	Sig.
UJI PH HARI KE	Based on Mean	1,651	5	12	,221
21	Based on Median	,375	5	12	,856
	Based on Median and with adjusted df	,375	5	6,674	,850
	Based on trimmed mean	1,518	5	12	,256

ANOVA

UJI PH HARI KE 21

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	69,628	5	13,926	18846,648	,000
Within Groups	,009	12	,001		
Total	69,637	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: UJI PH HARI KE 21

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	-,10667*	,02219	,004	-,1812	-,0321
	KN3	-,38000*	,02219	,000	-,4545	-,3055
	F1	3,86000*	,02219	,000	3,7855	3,9345
	F2	3,75667*	,02219	,000	3,6821	3,8312
	F3	3,67333*	,02219	,000	3,5988	3,7479
KN2	KN1	,10667*	,02219	,004	,0321	,1812
	KN3	-,27333*	,02219	,000	-,3479	-,1988
	F1	3,96667*	,02219	,000	3,8921	4,0412
	F2	3,86333*	,02219	,000	3,7888	3,9379
	F3	3,78000*	,02219	,000	3,7055	3,8545
KN3	KN1	,38000*	,02219	,000	,3055	,4545
	KN2	,27333*	,02219	,000	,1988	,3479
	F1	4,24000*	,02219	,000	4,1655	4,3145
	F2	4,13667*	,02219	,000	4,0621	4,2112
	F3	4,05333*	,02219	,000	3,9788	4,1279
F1	KN1	-3,86000*	,02219	,000	-3,9345	-3,7855
	KN2	-3,96667*	,02219	,000	-4,0412	-3,8921
	KN3	-4,24000*	,02219	,000	-4,3145	-4,1655
	F2	-,10333*	,02219	,006	-,1779	-,0288
	F3	-,18667*	,02219	,000	-,2612	-,1121
F2	KN1	-3,75667*	,02219	,000	-3,8312	-3,6821
	KN2	-3,86333*	,02219	,000	-3,9379	-3,7888
	KN3	-4,13667*	,02219	,000	-4,2112	-4,0621
	F1	,10333*	,02219	,006	,0288	,1779
	F3	-,08333*	,02219	,026	-,1579	-,0088
F3	KN1	-3,67333*	,02219	,000	-3,7479	-3,5988
	KN2	-3,78000*	,02219	,000	-3,8545	-3,7055
	KN3	-4,05333*	,02219	,000	-4,1279	-3,9788
	F1	,18667*	,02219	,000	,1121	,2612
	F2	,08333*	,02219	,026	,0088	,1579

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

Homogeneous Subsets

UJI PH HARI KE 21

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
F1	3	3,2933					
F2	3		3,3967				
F3	3			3,4800			
KN1	3				7,1533		
KN2	3					7,2600	
KN3	3						7,5333
Sig.		1,000	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

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

- Perbandingan hari ke 1 dan 21

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
UJI PH	HARI KE 1	,322	18	,000	,696	18	,000
	HARI KE 21	,321	18	,000	,696	18	,000

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
UJI PH	36	5,3678	1,99772	3,27	7,60
FORMULA	36	1,5000	,50709	1,00	2,00

Mann-Whitney Test

		Ranks		
	FORMULA	N	Mean Rank	Sum of Ranks
UJI PH	HARI KE 1	18	19,53	351,50
	HARI KE 21	18	17,47	314,50
	Total	36		

Test Statistics^a

	UJI PH
Mann-Whitney U	143,500
Wilcoxon W	314,500
Z	-,585
Asymp. Sig. (2-tailed)	,558
Exact Sig. [2*(1-tailed Sig.)]	,563 ^b

a. Grouping Variable: FORMULA

b. Not corrected for ties.

- **Setelah freeze thaw**

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
UJI PH	SEBELUM FREEZE THAW	,322	18	,000	,696	18	,000
	SESUDAH FREEZE THAW	,322	18	,000	,695	18	,000

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
UJI PH	36	5,3536	2,00157	3,24	7,60
FORMULA	36	1,5000	,50709	1,00	2,00

Mann-Whitney Test

		Ranks		
	FORMULA	N	Mean Rank	Sum of Ranks
UJI PH	SEBELUM FREEZE THAW	18	20,22	364,00
	SESUDAH FREEZE THAW	18	16,78	302,00
	Total	36		

Test Statistics^a

		UJI PH
Mann-Whitney U		131,000
Wilcoxon W		302,000
Z		-,981
Asymp. Sig. (2-tailed)		,326
Exact Sig. [2*(1-tailed Sig.)]		,339 ^b

a. Grouping Variable: FORMULA

b. Not corrected for ties.

b. Uji daya lekat - Hari ke 1

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
DAYA LEKAT HARI	KN1	,298	3	.	,916	3	,439
KE 1	KN2	,276	3	.	,942	3	,537
	KN3	,253	3	.	,964	3	,637
	F1	,292	3	.	,923	3	,463
	F2	,281	3	.	,937	3	,515
	F3	,334	3	.	,860	3	,266

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
DAYA LEKAT HARI KE 1	Based on Mean	1,615	5	12	,230
	Based on Median	,377	5	12	,855
	Based on Median and with adjusted df	,377	5	7,211	,850
	Based on trimmed mean	1,472	5	12	,269

ANOVA

DAYA LEKAT HARI KE 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,199	5	,840	57,102	,000
Within Groups	,176	12	,015		
Total	4,375	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA LEKAT HARI KE 1

Tukey HSD

(I)	(J)	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	-,56667*	,09901	,001	-,8992	-,2341
	KN3	-,97000*	,09901	,000	-1,3026	-,6374
	F1	,28000	,09901	,120	-,0526	,6126
	F2	-,56667*	,09901	,001	-,8992	-,2341
	F3	-1,06000*	,09901	,000	-1,3926	-,7274
KN2	KN1	,56667*	,09901	,001	,2341	,8992
	KN3	-,40333*	,09901	,015	-,7359	-,0708
	F1	,84667*	,09901	,000	,5141	1,1792
	F2	,00000	,09901	1,000	-,3326	,3326

	F3	-,49333*	,09901	,003	-,8259	-,1608
KN3	KN1	,97000*	,09901	,000	,6374	1,3026
	KN2	,40333*	,09901	,015	,0708	,7359
	F1	1,25000*	,09901	,000	,9174	1,5826
	F2	,40333*	,09901	,015	,0708	,7359
	F3	-,09000	,09901	,937	-,4226	,2426
F1	KN1	-,28000	,09901	,120	-,6126	,0526
	KN2	-,84667*	,09901	,000	-1,1792	-,5141
	KN3	-1,25000*	,09901	,000	-1,5826	-,9174
	F2	-,84667*	,09901	,000	-1,1792	-,5141
	F3	-1,34000*	,09901	,000	-1,6726	-1,0074
F2	KN1	,56667*	,09901	,001	,2341	,8992
	KN2	,00000	,09901	1,000	-,3326	,3326
	KN3	-,40333*	,09901	,015	-,7359	-,0708
	F1	,84667*	,09901	,000	,5141	1,1792
	F3	-,49333*	,09901	,003	-,8259	-,1608
F3	KN1	1,06000*	,09901	,000	,7274	1,3926
	KN2	,49333*	,09901	,003	,1608	,8259
	KN3	,09000	,09901	,937	-,2426	,4226
	F1	1,34000*	,09901	,000	1,0074	1,6726
	F2	,49333*	,09901	,003	,1608	,8259

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

Homogeneous Subsets

DAYA LEKAT HARI KE 1

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05		
		1	2	3
F1	3	1,3833		
KN1	3	1,6633		
KN2	3		2,2300	
F2	3		2,2300	
KN3	3			2,6333
F3	3			2,7233
Sig.		,120	1,000	,937

Means for groups in homogeneous subsets are displayed.

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

- **Hari ke 21**

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
DAYA LEKAT HARI	KN1	,241	3	.	,974	3	,688
KE 21	KN2	,196	3	.	,996	3	,878
	KN3	,253	3	.	,964	3	,637
	F1	,356	3	.	,818	3	,157
	F2	,198	3	.	,995	3	,870
	F3	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
DAYA LEKAT HARI KE	Based on Mean	1,211	5	12	,361
21	Based on Median	,695	5	12	,637
	Based on Median and with adjusted df	,695	5	8,011	,642
	Based on trimmed mean	1,176	5	12	,376

ANOVA

DAYA LEKAT HARI KE 21

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,133	5	,827	71,745	,000
Within Groups	,138	12	,012		
Total	4,272	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA LEKAT HARI KE 21

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	-,57667*	,08764	,000	-,8711	-,2823
	KN3	-,94000*	,08764	,000	-1,2344	-,6456
	F1	,29667*	,08764	,048	,0023	,5911
	F2	-,56000*	,08764	,000	-,8544	-,2656
	F3	-1,04333*	,08764	,000	-1,3377	-,7489
KN2	KN1	,57667*	,08764	,000	,2823	,8711
	KN3	-,36333*	,08764	,013	-,6577	-,0689
	F1	,87333*	,08764	,000	,5789	1,1677
	F2	,01667	,08764	1,000	-,2777	,3111
	F3	-,46667*	,08764	,002	-,7611	-,1723
KN3	KN1	,94000*	,08764	,000	,6456	1,2344
	KN2	,36333*	,08764	,013	,0689	,6577
	F1	1,23667*	,08764	,000	,9423	1,5311
	F2	,38000*	,08764	,010	,0856	,6744
	F3	-,10333	,08764	,838	-,3977	,1911
F1	KN1	-,29667*	,08764	,048	-,5911	-,0023
	KN2	-,87333*	,08764	,000	-1,1677	-,5789
	KN3	-1,23667*	,08764	,000	-1,5311	-,9423
	F2	-,85667*	,08764	,000	-1,1511	-,5623
	F3	-1,34000*	,08764	,000	-1,6344	-1,0456
F2	KN1	,56000*	,08764	,000	,2656	,8544
	KN2	-,01667	,08764	1,000	-,3111	,2777
	KN3	-,38000*	,08764	,010	-,6744	-,0856
	F1	,85667*	,08764	,000	,5623	1,1511
	F3	-,48333*	,08764	,001	-,7777	-,1889
F3	KN1	1,04333*	,08764	,000	,7489	1,3377
	KN2	,46667*	,08764	,002	,1723	,7611
	KN3	,10333	,08764	,838	-,1911	,3977
	F1	1,34000*	,08764	,000	1,0456	1,6344
	F2	,48333*	,08764	,001	,1889	,7777

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

Homogeneous Subsets

DAYA LEKAT HARI KE 21

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05			
		1	2	3	4
F1	3	1,3300			
KN1	3		1,6267		
F2	3			2,1867	
KN2	3			2,2033	
KN3	3				2,5667
F3	3				2,6700
Sig.		1,000	1,000	1,000	,838

Means for groups in homogeneous subsets are displayed.

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

- Perbandingan hari ke 1 dan hari ke 21

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DAYA	HARI KE 1	,138	18	,200*	,920	18	,127
LEKAT	HARI KE 21	,161	18	,200*	,910	18	,085

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

a. Lilliefors Significance Correction

T-Tes

Group Statistics

	FORMULA	N	Mean	Std. Deviation	Std. Error Mean
DAYA LEKAT	HARI KE 1	18	2,1489	,50597	,11926
	HARI KE 21	18	2,0922	,50206	,11834

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
DAYA LEKAT	Equal variances assumed	,006	,940	,337	34	,738	,05667	,16801	-,28477	,39810
	Equal variances not assumed			,337	33,998	,738	,05667	,16801	-,28477	,39810

c. Uji daya sebar - Hari ke 1

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk			
		FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
DAYA SEBAR HARI KE 1	KN1		,204	3	.	,993	3	,843
	KN2		,219	3	.	,987	3	,780
	KN3		,175	3	.	1,000	3	1,000
	F1		,292	3	.	,923	3	,463
	F2		,253	3	.	,964	3	,637
	F3		,219	3	.	,987	3	,780

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
DAYA SEBAR HARI KE 1	Based on Mean	,583	5	12	,713
	Based on Median	,409	5	12	,833
	Based on Median and with adjusted df	,409	5	8,857	,831
	Based on trimmed mean	,572	5	12	,720

ANOVA

DAYA SEBAR HARI KE 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,365	5	1,273	1013,955	,000
Within Groups	,015	12	,001		
Total	6,380	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA SEBAR HARI KE 1

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	,69333*	,02893	,000	,5962	,7905
	KN3	,86667*	,02893	,000	,7695	,9638
	F1	,09000	,02893	,076	-,0072	,1872
	F2	1,09667*	,02893	,000	,9995	1,1938
	F3	1,74333*	,02893	,000	1,6462	1,8405
KN2	KN1	-,69333*	,02893	,000	-,7905	-,5962
	KN3	,17333*	,02893	,001	,0762	,2705
	F1	-,60333*	,02893	,000	-,7005	-,5062
	F2	,40333*	,02893	,000	,3062	,5005

	F3	1,05000*	,02893	,000	,9528	1,1472
KN3	KN1	-,86667*	,02893	,000	-,9638	-,7695
	KN2	-,17333*	,02893	,001	-,2705	-,0762
	F1	-,77667*	,02893	,000	-,8738	-,6795
	F2	,23000*	,02893	,000	,1328	,3272
	F3	,87667*	,02893	,000	,7795	,9738
F1	KN1	-,09000	,02893	,076	-,1872	,0072
	KN2	,60333*	,02893	,000	,5062	,7005
	KN3	,77667*	,02893	,000	,6795	,8738
	F2	1,00667*	,02893	,000	,9095	1,1038
	F3	1,65333*	,02893	,000	1,5562	1,7505
F2	KN1	-1,09667*	,02893	,000	-1,1938	-,9995
	KN2	-,40333*	,02893	,000	-,5005	-,3062
	KN3	-,23000*	,02893	,000	-,3272	-,1328
	F1	-1,00667*	,02893	,000	-1,1038	-,9095
	F3	,64667*	,02893	,000	,5495	,7438
F3	KN1	-1,74333*	,02893	,000	-1,8405	-1,6462
	KN2	-1,05000*	,02893	,000	-1,1472	-,9528
	KN3	-,87667*	,02893	,000	-,9738	-,7795
	F1	-1,65333*	,02893	,000	-1,7505	-1,5562
	F2	-,64667*	,02893	,000	-,7438	-,5495

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

Homogeneous Subsets

DAYA SEBAR HARI KE 1

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05				
		1	2	3	4	5
F3	3	4,9033				
F2	3		5,5500			
KN3	3			5,7800		
KN2	3				5,9533	
F1	3					6,5567
KN1	3					6,6467
Sig.		1,000	1,000	1,000	1,000	,076

Means for groups in homogeneous subsets are displayed.

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

- Hari ke 21

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DAYA SEBAR HARI	KN1	,219	3	.	,987	3	,780
KE 21	KN2	,219	3	.	,987	3	,780
	KN3	,219	3	.	,987	3	,780
	F1	,292	3	.	,923	3	,463
	F2	,328	3	.	,871	3	,298
	F3	,232	3	.	,980	3	,726

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
DAYA SEBAR HARI KE 21	Based on Mean	1,541	5	12	,250
	Based on Median	,802	5	12	,570
	Based on Median and with adjusted df	,802	5	6,253	,585
	Based on trimmed mean	1,487	5	12	,265

ANOVA

DAYA SEBAR HARI KE 21

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,175	5	1,235	736,074	,000
Within Groups	,020	12	,002		
Total	6,195	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA SEBAR HARI KE 21

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	,32667*	,03344	,000	,2143	,4390
	KN3	,52667*	,03344	,000	,4143	,6390
	F1	,17333*	,03344	,002	,0610	,2857
	F2	,71333*	,03344	,000	,6010	,8257
	F3	1,79333*	,03344	,000	1,6810	1,9057
KN2	KN1	-,32667*	,03344	,000	-,4390	-,2143
	KN3	,20000*	,03344	,001	,0877	,3123
	F1	-,15333*	,03344	,006	-,2657	-,0410
	F2	,38667*	,03344	,000	,2743	,4990
	F3	1,46667*	,03344	,000	1,3543	1,5790
KN3	KN1	-,52667*	,03344	,000	-,6390	-,4143
	KN2	-,20000*	,03344	,001	-,3123	-,0877
	F1	-,35333*	,03344	,000	-,4657	-,2410
	F2	,18667*	,03344	,001	,0743	,2990
	F3	1,26667*	,03344	,000	1,1543	1,3790
F1	KN1	-,17333*	,03344	,002	-,2857	-,0610
	KN2	,15333*	,03344	,006	,0410	,2657
	KN3	,35333*	,03344	,000	,2410	,4657
	F2	,54000*	,03344	,000	,4277	,6523
	F3	1,62000*	,03344	,000	1,5077	1,7323
F2	KN1	-,71333*	,03344	,000	-,8257	-,6010
	KN2	-,38667*	,03344	,000	-,4990	-,2743
	KN3	-,18667*	,03344	,001	-,2990	-,0743
	F1	-,54000*	,03344	,000	-,6523	-,4277
	F3	1,08000*	,03344	,000	,9677	1,1923
F3	KN1	-1,79333*	,03344	,000	-1,9057	-1,6810
	KN2	-1,46667*	,03344	,000	-1,5790	-1,3543
	KN3	-1,26667*	,03344	,000	-1,3790	-1,1543
	F1	-1,62000*	,03344	,000	-1,7323	-1,5077
	F2	-1,08000*	,03344	,000	-1,1923	-,9677

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

Homogeneous Subsets

DAYA SEBAR HARI KE 21

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
F3	3	4,9867					
F2	3		6,0667				
KN3	3			6,2533			
KN2	3				6,4533		
F1	3					6,6067	
KN1	3						6,7800
Sig.		1,000	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

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

- Perbandingan hari ke 1 dan hari ke 21

Tests of Normality

FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
DAYA SEBAR HARI KE 1	,186	18	,101	,901	18	,060
DAYA SEBAR HARI KE 21	,228	18	,014	,810	18	,002

a. Lilliefors Significance Correction

Mann-Whitney Test

Ranks

FORMULA	N	Mean Rank	Sum of Ranks
DAYA SEBAR HARI KE 1	18	15,44	278,00
DAYA SEBAR HARI KE 21	18	21,56	388,00
Total	36		

Test Statistics^a

DAYA SEBAR	
Mann-Whitney U	107,000
Wilcoxon W	278,000
Z	-1,740
Asymp. Sig. (2-tailed)	,082
Exact Sig. [2*(1-tailed Sig.)]	,085 ^b

a. Grouping Variable: FORMULA

b. Not corrected for ties.

d. Uji daya proteksi

- **Hari ke 1**

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DAYA PROTEKSI	KN1	,292	3	.	,923	3	,463
HARI KE 1	KN2	,253	3	.	,964	3	,637
	KN3	,219	3	.	,987	3	,780
	F1	,328	3	.	,871	3	,298
	F2	,219	3	.	,987	3	,780
	F3	,328	3	.	,871	3	,298

a. Lilliefors Significance Correction

Oneway**Test of Homogeneity of Variances**

		Levene	df1	df2	Sig.
		Statistic			
DAYA PROTEKSI HARI	Based on Mean	,683	5	12	,645
KE 1	Based on Median	,124	5	12	,984
	Based on Median and with adjusted df	,124	5	8,393	,983
	Based on trimmed mean	,618	5	12	,689

ANOVA

DAYA PROTEKSI HARI KE 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13171,000	5	2634,200	3951300,000	,000
Within Groups	,008	12	,001		
Total	13171,008	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA PROTEKSI HARI KE 1

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	-,11000*	,02108	,002	-,1808	-,0392
	KN3	-,19667*	,02108	,000	-,2675	-,1259
	F1	54,43333*	,02108	,000	54,3625	54,5041
	F2	54,07000*	,02108	,000	53,9992	54,1408
	F3	53,48333*	,02108	,000	53,4125	53,5541
KN2	KN1	,11000*	,02108	,002	,0392	,1808
	KN3	-,08667*	,02108	,014	-,1575	-,0159
	F1	54,54333*	,02108	,000	54,4725	54,6141
	F2	54,18000*	,02108	,000	54,1092	54,2508
	F3	53,59333*	,02108	,000	53,5225	53,6641
KN3	KN1	,19667*	,02108	,000	,1259	,2675
	KN2	,08667*	,02108	,014	,0159	,1575
	F1	54,63000*	,02108	,000	54,5592	54,7008
	F2	54,26667*	,02108	,000	54,1959	54,3375
	F3	53,68000*	,02108	,000	53,6092	53,7508
F1	KN1	-54,43333*	,02108	,000	-54,5041	-54,3625
	KN2	-54,54333*	,02108	,000	-54,6141	-54,4725
	KN3	-54,63000*	,02108	,000	-54,7008	-54,5592
	F2	-,36333*	,02108	,000	-,4341	-,2925
	F3	-,95000*	,02108	,000	-1,0208	-,8792
F2	KN1	-54,07000*	,02108	,000	-54,1408	-53,9992

	KN2	-54,18000*	,02108	,000	-54,2508	-54,1092
	KN3	-54,26667*	,02108	,000	-54,3375	-54,1959
	F1	,36333*	,02108	,000	,2925	,4341
	F3	-,58667*	,02108	,000	-,6575	-,5159
F3	KN1	-53,48333*	,02108	,000	-53,5541	-53,4125
	KN2	-53,59333*	,02108	,000	-53,6641	-53,5225
	KN3	-53,68000*	,02108	,000	-53,7508	-53,6092
	F1	,95000*	,02108	,000	,8792	1,0208
	F2	,58667*	,02108	,000	,5159	,6575

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

Homogeneous Subsets

DAYA PROTEKSI HARI KE 1

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
F1	3	5,8133					
F2	3		6,1767				
F3	3			6,7633			
KN1	3				60,2467		
KN2	3					60,3567	
KN3	3						60,4433
Sig.		1,000	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

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

- Hari ke 21

Tests of Normality

FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
DAYA PROTEKSI HARI KE 21	KN1	,175	3	.	1,000	3	1,000
	KN2	,175	3	.	1,000	3	1,000

KN3	,253	3	.	,964	3	,637
F1	,314	3	.	,893	3	,363
F2	,292	3	.	,923	3	,463
F3	,276	3	.	,942	3	,537

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
DAYA PROTEKSI HARI	Based on Mean	,829	5	12	,553
KE 21	Based on Median	,228	5	12	,943
	Based on Median and with adjusted df	,228	5	8,065	,940
	Based on trimmed mean	,772	5	12	,588

ANOVA

DAYA PROTEKSI HARI KE 21

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13168,878	5	2633,776	4558457,646	,000
Within Groups	,007	12	,001		
Total	13168,885	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA PROTEKSI HARI KE 21

Tukey HSD

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

KN1	KN2	-,11000*	,01963	,001	-,1759	-,0441
	KN3	-,17667*	,01963	,000	-,2426	-,1107
	F1	54,45000*	,01963	,000	54,3841	54,5159
	F2	54,06333*	,01963	,000	53,9974	54,1293
	F3	53,48000*	,01963	,000	53,4141	53,5459
KN2	KN1	,11000*	,01963	,001	,0441	,1759
	KN3	-,06667*	,01963	,047	-,1326	-,0007
	F1	54,56000*	,01963	,000	54,4941	54,6259
	F2	54,17333*	,01963	,000	54,1074	54,2393
	F3	53,59000*	,01963	,000	53,5241	53,6559
KN3	KN1	,17667*	,01963	,000	,1107	,2426
	KN2	,06667*	,01963	,047	,0007	,1326
	F1	54,62667*	,01963	,000	54,5607	54,6926
	F2	54,24000*	,01963	,000	54,1741	54,3059
	F3	53,65667*	,01963	,000	53,5907	53,7226
F1	KN1	-54,45000*	,01963	,000	-54,5159	-54,3841
	KN2	-54,56000*	,01963	,000	-54,6259	-54,4941
	KN3	-54,62667*	,01963	,000	-54,6926	-54,5607
	F2	-,38667*	,01963	,000	-,4526	-,3207
	F3	-,97000*	,01963	,000	-1,0359	-,9041
F2	KN1	-54,06333*	,01963	,000	-54,1293	-53,9974
	KN2	-54,17333*	,01963	,000	-54,2393	-54,1074
	KN3	-54,24000*	,01963	,000	-54,3059	-54,1741
	F1	,38667*	,01963	,000	,3207	,4526
	F3	-,58333*	,01963	,000	-,6493	-,5174
F3	KN1	-53,48000*	,01963	,000	-53,5459	-53,4141
	KN2	-53,59000*	,01963	,000	-53,6559	-53,5241
	KN3	-53,65667*	,01963	,000	-53,7226	-53,5907
	F1	,97000*	,01963	,000	,9041	1,0359
	F2	,58333*	,01963	,000	,5174	,6493

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

Homogeneous Subsets

DAYA PROTEKSI HARI KE 21

Tukey HSD^a

		Subset for alpha = 0.05					
FORMULA	N	1	2	3	4	5	6
F1	3	5,7600					
F2	3		6,1467				
F3	3			6,7300			
KN1	3				60,2100		
KN2	3					60,3200	
KN3	3						60,3867
Sig.		1,000	1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

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

- Perbandingan hari ke – 1 dan hari ke – 21

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
FORMULA		Statistic	df	Sig.	Statistic	df	Sig.
DAYAPROTEKSI	HARI KE 1	,333	18	,000	,650	18	,000
	HARI KE 21	,333	18	,000	,650	18	,000

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
DAYAPROTEKSI	36	33,2794	27,43299	5,73	60,47
FORMULA	36	1,5000	,50709	1,00	2,00

Mann-Whitney Test

Ranks

		FORMULA	N	Mean Rank	Sum of Ranks
DAYAPROTEKSI	HARI KE 1		18	19,81	356,50
	HARI KE 21		18	17,19	309,50
	Total		36		

Test Statistics^a

DAYAPROTEKS

	I
Mann-Whitney U	138,500
Wilcoxon W	309,500
Z	-,744
Asymp. Sig. (2-tailed)	,457
Exact Sig. [2*(1-tailed Sig.)]	,462 ^b

a. Grouping Variable: FORMULA

b. Not corrected for ties.

e. Uji viskositas

- Hari ke 1

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
UJI VISKOSITAS	KN1	,219	3	.	,987	3	,780
HARI KE 1	KN2	,314	3	.	,893	3	,363
	KN3	,253	3	.	,964	3	,637
	F1	,175	3	.	1,000	3	1,000
	F2	,253	3	.	,964	3	,637
	F3	,219	3	.	,987	3	,780

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene	df1	df2	Sig.
		Statistic			
UJI VISKOSITAS HARI KE 1	Based on Mean	,886	5	12	,519
	Based on Median	,312	5	12	,896
	Based on Median and with adjusted df	,312	5	8,084	,893
	Based on trimmed mean	,837	5	12	,548

ANOVA

UJI VISKOSITAS HARI KE 1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	37061,111	5	7412,222	70,221	,000
Within Groups	1266,667	12	105,556		
Total	38327,778	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: UJI VISKOSITAS HARI KE 1

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	-71,66667*	8,38870	,000	-99,8437	-43,4897
	KN3	-115,00000*	8,38870	,000	-143,1770	-86,8230
	F1	3,33333	8,38870	,998	-24,8437	31,5103
	F2	-63,33333*	8,38870	,000	-91,5103	-35,1563
	F3	-100,00000*	8,38870	,000	-128,1770	-71,8230
KN2	KN1	71,66667*	8,38870	,000	43,4897	99,8437
	KN3	-43,33333*	8,38870	,002	-71,5103	-15,1563
	F1	75,00000*	8,38870	,000	46,8230	103,1770
	F2	8,33333	8,38870	,911	-19,8437	36,5103
	F3	-28,33333*	8,38870	,048	-56,5103	-,1563
KN3	KN1	115,00000*	8,38870	,000	86,8230	143,1770
	KN2	43,33333*	8,38870	,002	15,1563	71,5103
	F1	118,33333*	8,38870	,000	90,1563	146,5103
	F2	51,66667*	8,38870	,001	23,4897	79,8437
	F3	15,00000	8,38870	,507	-13,1770	43,1770
F1	KN1	-3,33333	8,38870	,998	-31,5103	24,8437
	KN2	-75,00000*	8,38870	,000	-103,1770	-46,8230
	KN3	-118,33333*	8,38870	,000	-146,5103	-90,1563
	F2	-66,66667*	8,38870	,000	-94,8437	-38,4897
	F3	-103,33333*	8,38870	,000	-131,5103	-75,1563
F2	KN1	63,33333*	8,38870	,000	35,1563	91,5103
	KN2	-8,33333	8,38870	,911	-36,5103	19,8437
	KN3	-51,66667*	8,38870	,001	-79,8437	-23,4897
	F1	66,66667*	8,38870	,000	38,4897	94,8437

	F3	-36,66667*	8,38870	,009	-64,8437	-8,4897
F3	KN1	100,00000*	8,38870	,000	71,8230	128,1770
	KN2	28,33333*	8,38870	,048	,1563	56,5103
	KN3	-15,00000	8,38870	,507	-43,1770	13,1770
	F1	103,33333*	8,38870	,000	75,1563	131,5103
	F2	36,66667*	8,38870	,009	8,4897	64,8437

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

Homogeneous Subsets

UJI VISKOSITAS HARI KE 1

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05		
		1	2	3
F1	3	250,0000		
KN1	3	253,3333		
F2	3		316,6667	
KN2	3		325,0000	
F3	3			353,3333
KN3	3			368,3333
Sig.		,998	,911	,507

Means for groups in homogeneous subsets are displayed.

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

- Hari ke 21

Tests of Normality

	FORMULA	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
UJI VISKOSITAS HARI KE 21	KN1	,219	3	.	,987	3	,780
	KN2	,253	3	.	,964	3	,637
	KN3	,175	3	.	1,000	3	1,000
	F1	,253	3	.	,964	3	,637
	F2	,292	3	.	,923	3	,463
	F3	,219	3	.	,987	3	,780

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
UJI VISKOSITAS HARI KE 21	Based on Mean	,686	5	12	,643
	Based on Median	,314	5	12	,895
	Based on Median and with adjusted df	,314	5	9,446	,893
	Based on trimmed mean	,657	5	12	,663

ANOVA

UJI VISKOSITAS HARI KE 21

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38466,667	5	7693,333	81,459	,000
Within Groups	1133,333	12	94,444		
Total	39600,000	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: UJI VISKOSITAS HARI KE 21

Tukey HSD

(I)	(J)	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
FORMULA KN1	FORMULA KN2	-73,33333*	7,93492	,000	-99,9861	-46,6806
	KN3	-116,66667*	7,93492	,000	-143,3194	-90,0139
	F1	5,00000	7,93492	,986	-21,6528	31,6528
	F2	-65,00000*	7,93492	,000	-91,6528	-38,3472
	F3	-100,00000*	7,93492	,000	-126,6528	-73,3472
KN2	KN1	73,33333*	7,93492	,000	46,6806	99,9861
	KN3	-43,33333*	7,93492	,002	-69,9861	-16,6806
	F1	78,33333*	7,93492	,000	51,6806	104,9861
	F2	8,33333	7,93492	,892	-18,3194	34,9861

	F3	-26,66667*	7,93492	,050	-53,3194	-,0139
KN3	KN1	116,66667*	7,93492	,000	90,0139	143,3194
	KN2	43,33333*	7,93492	,002	16,6806	69,9861
	F1	121,66667*	7,93492	,000	95,0139	148,3194
	F2	51,66667*	7,93492	,000	25,0139	78,3194
	F3	16,66667	7,93492	,348	-9,9861	43,3194
F1	KN1	-5,00000	7,93492	,986	-31,6528	21,6528
	KN2	-78,33333*	7,93492	,000	-104,9861	-51,6806
	KN3	-121,66667*	7,93492	,000	-148,3194	-95,0139
	F2	-70,00000*	7,93492	,000	-96,6528	-43,3472
	F3	-105,00000*	7,93492	,000	-131,6528	-78,3472
F2	KN1	65,00000*	7,93492	,000	38,3472	91,6528
	KN2	-8,333333	7,93492	,892	-34,9861	18,3194
	KN3	-51,66667*	7,93492	,000	-78,3194	-25,0139
	F1	70,00000*	7,93492	,000	43,3472	96,6528
	F3	-35,00000*	7,93492	,009	-61,6528	-8,3472
F3	KN1	100,00000*	7,93492	,000	73,3472	126,6528
	KN2	26,66667*	7,93492	,050	,0139	53,3194
	KN3	-16,66667	7,93492	,348	-43,3194	9,9861
	F1	105,00000*	7,93492	,000	78,3472	131,6528
	F2	35,00000*	7,93492	,009	8,3472	61,6528

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

Homogeneous Subsets

UJI VISKOSITAS HARI KE 21

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05		
		1	2	3
F1	3	238,3333		
KN1	3	243,3333		
F2	3		308,3333	
KN2	3		316,6667	
F3	3			343,3333
KN3	3			360,0000
Sig.		,986	,892	,348

Means for groups in homogeneous subsets are displayed.

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

- **Perbandingan hari ke 1 dan hari ke 21**

T-Test

		Group Statistics			
	FORMULA	N	Mean	Std. Deviation	Std. Error Mean
UJI VISKOSITAS	HARI KE 1	18	311,1111	47,48237	11,19170
	HARI KE 21	18	301,6667	48,26398	11,37593

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
UJI VISKOSITAS	Equal variances assumed	,012	,914	,592	34	,558	9,44444	15,95826	-22,98663	41,87552
	Equal variances not assumed			,592	33,991	,558	9,44444	15,95826	-22,98695	41,87584

- **Setelah freeze thaw**

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
UJI VISKOSITAS	SEBELUM FREEZE THAW	,168	18	,196	,896	18	,050

SETELAH FREEZE THAW	,159	18	,200 ^a	,882	18	,028
------------------------	------	----	-------------------	------	----	------

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

a. Lilliefors Significance Correction

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
UJI VISKOSITAS	36	298,1944	48,74354	225,00	375,00
FORMULA	36	1,5000	,50709	1,00	2,00

Mann-Whitney Test

Ranks

		FORMULA	N	Mean Rank	Sum of Ranks
UJI VISKOSITAS	SEBELUM FREEZE THAW		18	21,22	382,00
	SETELAH FREEZE THAW		18	15,78	284,00
	Total		36		

Test Statistics^a

		UJI VISKOSITAS
Mann-Whitney U		113,000
Wilcoxon W		284,000
Z		-1,552
Asymp. Sig. (2-tailed)		,121
Exact Sig. [2*(1-tailed Sig.)]		,126 ^b

a. Grouping Variable: FORMULA

b. Not corrected for ties.

LAMPIRAN 11. Hasil analisis statistik daya hambat emulgel ekstrak buah belimbing wuluh terhadap bakteri *Staphylococcus epidermidis*

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	FORMULA	Statistic	df	Sig.	Statistic	df	Sig.
DAYA	KN1	,301	3	.	,912	3	,424
HAMBAT	KN2	,286	3	.	,930	3	,490
	KN3	,176	3	.	1,000	3	,984
	F1	,351	3	.	,827	3	,181
	F2	,312	3	.	,895	3	,370
	F3	,191	3	.	,997	3	,901
	K+	,315	3	.	,891	3	,358

a. Lilliefors Significance Correction

Oneway

Test of Homogeneity of Variances

		Levene			
		Statistic	df1	df2	Sig.
DAYA HAMBAT	Based on Mean	6,534	6	14	,002
	Based on Median	,977	6	14	,476
	Based on Median and with adjusted df	,977	6	2,950	,555
	Based on trimmed mean	5,767	6	14	,003

ANOVA

DAYA HAMBAT

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5900,065	6	983,344	400,152	,000
Within Groups	34,404	14	2,457		
Total	5934,469	20			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: DAYA HAMBAT

Tukey HSD

(I) FORMULA	(J) FORMULA	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KN1	KN2	,44333	1,27996	1,000	-3,9272	4,8139
	KN3	,49667	1,27996	1,000	-3,8739	4,8672
	F1	-35,83667*	1,27996	,000	-40,2072	-31,4661
	F2	-33,83667*	1,27996	,000	-38,2072	-29,4661
	F3	-32,05667*	1,27996	,000	-36,4272	-27,6861
	K+	-32,17000*	1,27996	,000	-36,5405	-27,7995
KN2	KN1	-,44333	1,27996	1,000	-4,8139	3,9272
	KN3	,05333	1,27996	1,000	-4,3172	4,4239
	F1	-36,28000*	1,27996	,000	-40,6505	-31,9095
	F2	-34,28000*	1,27996	,000	-38,6505	-29,9095
	F3	-32,50000*	1,27996	,000	-36,8705	-28,1295
	K+	-32,61333*	1,27996	,000	-36,9839	-28,2428
KN3	KN1	-,49667	1,27996	1,000	-4,8672	3,8739
	KN2	-,05333	1,27996	1,000	-4,4239	4,3172
	F1	-36,33333*	1,27996	,000	-40,7039	-31,9628
	F2	-34,33333*	1,27996	,000	-38,7039	-29,9628
	F3	-32,55333*	1,27996	,000	-36,9239	-28,1828
	K+	-32,66667*	1,27996	,000	-37,0372	-28,2961
F1	KN1	35,83667*	1,27996	,000	31,4661	40,2072
	KN2	36,28000*	1,27996	,000	31,9095	40,6505
	KN3	36,33333*	1,27996	,000	31,9628	40,7039
	F2	2,00000	1,27996	,706	-2,3705	6,3705
	F3	3,78000	1,27996	,111	-,5905	8,1505
	K+	3,66667	1,27996	,129	-,7039	8,0372
F2	KN1	33,83667*	1,27996	,000	29,4661	38,2072
	KN2	34,28000*	1,27996	,000	29,9095	38,6505
	KN3	34,33333*	1,27996	,000	29,9628	38,7039
	F1	-2,00000	1,27996	,706	-6,3705	2,3705
	F3	1,78000	1,27996	,798	-2,5905	6,1505
	K+	1,66667	1,27996	,840	-2,7039	6,0372

F3	KN1	32,05667*	1,27996	,000	27,6861	36,4272
	KN2	32,50000*	1,27996	,000	28,1295	36,8705
	KN3	32,55333*	1,27996	,000	28,1828	36,9239
	F1	-3,78000	1,27996	,111	-8,1505	,5905
	F2	-1,78000	1,27996	,798	-6,1505	2,5905
	K+	-,11333	1,27996	1,000	-4,4839	4,2572
K+	KN1	32,17000*	1,27996	,000	27,7995	36,5405
	KN2	32,61333*	1,27996	,000	28,2428	36,9839
	KN3	32,66667*	1,27996	,000	28,2961	37,0372
	F1	-3,66667	1,27996	,129	-8,0372	,7039
	F2	-1,66667	1,27996	,840	-6,0372	2,7039
	F3	,11333	1,27996	1,000	-4,2572	4,4839

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

Homogeneous Subsets

DAYA HAMBAT

Tukey HSD^a

FORMULA	N	Subset for alpha = 0.05	
		1	2
KN3	3	1,6667	
KN2	3	1,7200	
KN1	3	2,1633	
F3	3		34,2200
K+	3		34,3333
F2	3		36,0000
F1	3		38,0000
Sig.		1,000	,111

Means for groups in homogeneous subsets are displayed.

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