L A M P I R A N

Lampiran 1. Lembar determinasi tanaman pinang (*Areca catechu* L).

UNIVERSITAS SETIA BUDI

UPT- LABORATORIUM

No : 392/DET/UPT-LAB/01/V/2019
Hal : Surat Keterangan Determinasi Tumbuhan

Menerangkan bahwa :
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Fakultas : Farmasi Universitas Setia Budi

Telah mendeterminasikan tumbuhan : **Pinang / *Areca catechu* L.**
Hasil determinasi berdasarkan : Steenis : FLORA
1b – 2b – 3b – 4b – 6b – 7a – 8b. Familia 21. Palmae. 1b – 3b – 4b – 6b – 7a – 7b – 9b.10.

Areca. *Areca catechu* L.

Deskripsi :
Habitus : Pohon, sampai tinggi 25 m.
Batang : Tidak bercabang langsing, besar lk 15 cm, tajuk tidak rimbun.
Daun : Pelepah daun berbentuk tabung, panjang lk 79 cm; tangkai daun pendek; anak daun 78 cm, lebar lk 5cm, ujung sobek dan bergigi.
Bunga : Tongkol bunga dengan seludang (spatha) yang panjang dan mudah rontok, muncul di bawah daun, panjang lk 75 cm, dengan tangkai pendek bercabang rangkap, sumbu ujung sampai panjang 35 cm, dengan 1 bunga betina pada pangkal, di atasnya dengan banyak bunga jantan tersusun dalam 2 baris yang tertancap dalam alur. Bunga jantan panjang 4 mm, putih kuning, benangsari 6. Bunga betina panjang lk 1,5 cm, hijau, bakal buah beruang 1.
Buah : Buni, bulat telur terbalik memanjang, merah oranye, panjang lk 6 cm, dinding buah berserabut.
Biji : Satu, berbentuk bulat telur, ada gambaran seperti jala.

Pustaka : Steenis C.G.G.J., Bloembergen S. Eyma P.J. (1978): *FLORA*. PT PradnyaParamita. Jl. KebonSirih 46.Jakarta Pusat, 1978.

Surakarta, 01 Mei 2019
Timdeterminasi

Dra. Kartinah Wirjosoendjojo, SU

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Lampiran 2. Gambar tanaman biji pinang (*Areca catechu* L.).

Tanaman pinang (Areca catechu L.)

Buah pinang

Biji pinang kering

Serbuk biji pinang

Ekstrak biji pinang

Lampiran 3. Gambar alat penelitian

nkubator

Evaporator

Autoklaf

Viskometer

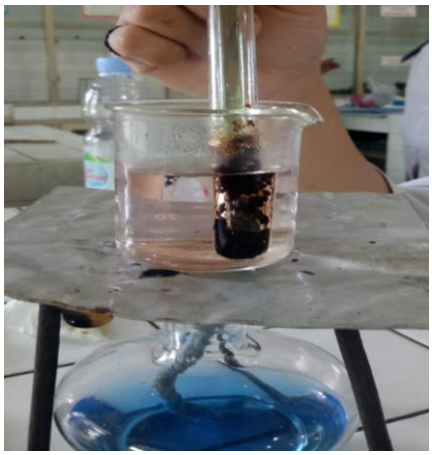
Uji Daya Sebar

Uji pH

Uji Daya Lekat

Moisture Balance

Lampiran 4. Hasil uji bebas etanol ekstrak biji pinang.



Tes bebas etanol	Hasil uji
Ekstrak biji pinang CH_3COOH + H_2SO_4 +	Tidak tercium bau ester yang khas dari alkohol

Lampiran 5. Hasil identifikasi kandungan kimia biji pinang.

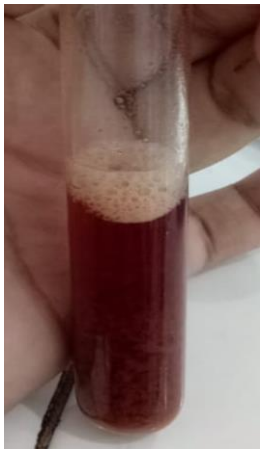
Alkaloid

Dragendrof

Mayer

Flavonoid

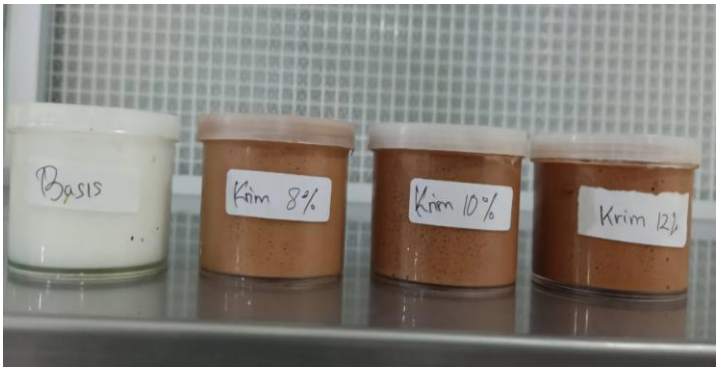
Saponin



Tanin

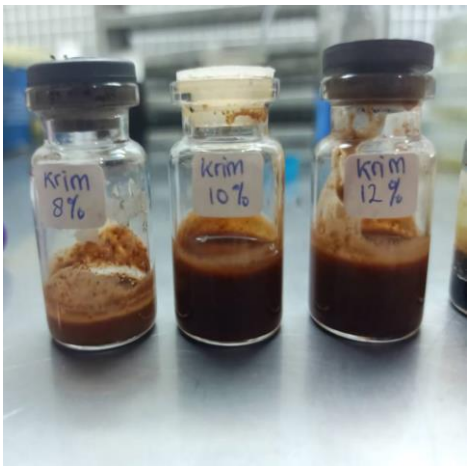
Polifenol

Lampiran 6. Gambar formulasi sediaan krim



Lampiran 7. Gambar larutan stok dan suspensi bakteri *Staphylococcus aureus* ATCC 25923.

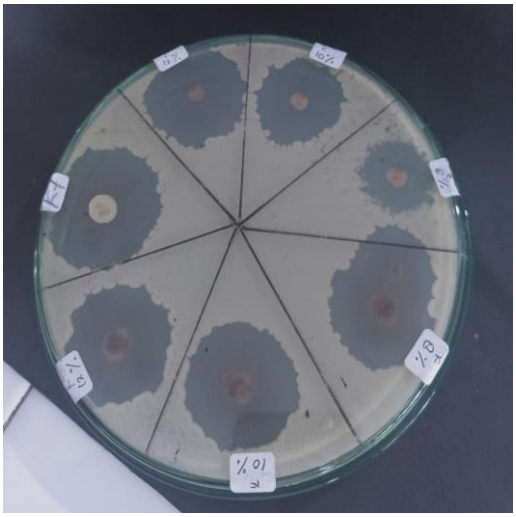
Larutan Stok Ekstrak 8, 10, dan 12 %



Larutan Stok Ekstrak 8, 10, dan 12%

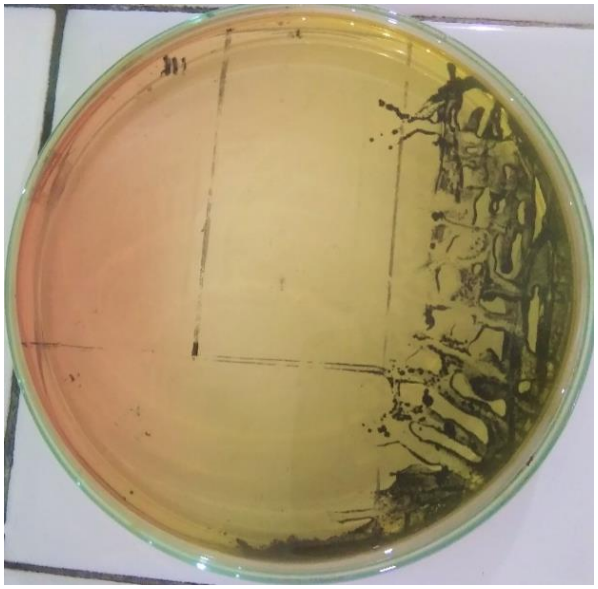
Suspensi bakteri *Staphylococcus aureus*

Lampiran 8. Hasil pengujian aktivitas antibakteri ekstrak biji pinang dan sediaan krim ekstrak biji pinang terhadap *Staphylococcus aureus* ATCC 25923.

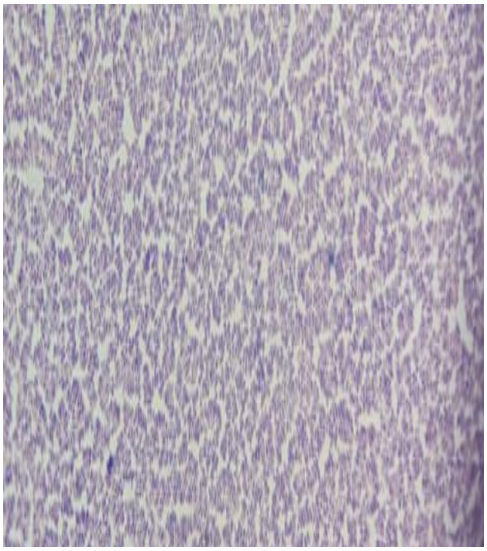


Keterangan :
E 8% :(Ekstrak 8%)
E 10% :(Ekstrak 10%)
E 12% :(Ekstrak 20%)
K 8% :(Krim 8%)
K 10% :(Krim 10%)
K 12% :(Krim 20%)
K+ :(Kontrol positif gentamycin)

Lampiran 9. Identifikasi bakteri *Staphylococcus aureus*.



Hasil identifikasi Staphylococcus aureus pada media VJA



Hasil pewarnaan gram bakteri Staphylococcus aureus

Uji Koagulase

Uji Katalase

Lampiran 10. Perhitungan prosentase rendemen bobot kering terhadap bobot basah Biji pinang

Serbuk biji pinang memiliki bobot basah 7000 gram, setelah dikeringkan mempunyai bobot 900 gram.

Prosentase bobot kering terhadap bobot basah biji pinang

Bobot basah (gram)	Bobot kering (gram)	Prosentase (%)
7000	900	12,86%

Perhitungan rendemen :

$$\frac{bobot\ kering\ (gram)}{bobot\ basah\ (gram} \ x\ 100\%$$

Rendemen = $\frac{900}{7000}\ x\ 100\% = 12{,}86\ \%$

Kesimpulan : prosentase rendemen biji pinang kering terhadap biji pinang basah adalah 12,86%.

Lampiran 11. Perhitungan Prosentase rendemen ekstrak biji pinang

Bobot serbuk (gram)	Bobot ekstrak (gram)	Rendemen ekstrak (%)
500	313	62,6

Rendemen ekstrak = $\frac{313}{500}\ x\ 100\% = 62{,}6\%$

Kesimpulan : prosentase rendemen ekstrak biji pinang adalah 62,6%.

Lampiran 12. Perhitungan penetapan kadar lembab serbuk dan ekstrak biji pinang.

	Serbuk	Ekstrak
	8,0	10,0
	8,1	11,0
	8,5	10,5
Rata-rata	8,2 %	10,5 %

Hasil perhitungan prosentase susut pengeringan serbuk dan ekstrak biji pinang diatas dapat dihitung sebagai berikut :

Rata-rata susut pengeringan serbuk biji pinang = $\frac{8,0+8,1+8,5}{3} = 8,2\%$

Rata-rata susut pengeringan ekstrak biji pinang = $\frac{10,0+11,0+10,5}{3} = 10,5\%$

Kesimpulan : prosentase rata-rata susut pengeringan serbuk biji pinang adalah 8,2% dan ekstrak biji pinang adalah 10,5%.

Lampiran 13. Perhitungan konsentrasi sediaan krim ekstrak biji pinang.

Formula I 0%

Setil alkohol $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Asam stearate $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Propilen $\frac{10\ gram}{50\ gram}$ x 50 gram = 10 gram

Span 80 $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Tween $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Nipasol $\frac{0{,}09\ gram}{50\ gram}$ x 50 gram = 0,09 gram

Nipagin $\frac{0{,}01\ gram}{50\ gram}$ x 50 gram = 0,01 gram

Aquadest ad = 50 – (19,1 gram)

= 30,9 gram

Formula II 8%

Ekstrak biji pinang $\frac{8\ gram}{50\ gram}$ x 50 gram = 8 gram

Setil alkohol $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Asam stearate $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Propilen $\frac{10\ gram}{50\ gram}$ x 50 gram = 10 gram

Span 80 $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Tween $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Nipasol $\frac{0{,}09\ gram}{50\ gram}$ x 50 gram = 0,09 gram

Nipagin $\frac{0{,}01\ gram}{50\ gram}$ x 50 gram = 0,01 gram

Aquadest ad = 50 – (27,1 gram)
= 22,9 gram

Formula III 10%

Ekstrak biji pinang $\frac{10\ gram}{50\ gram}$ x 50 gram = 10 gram

Setil alkohol $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Asam stearate $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Propilen $\frac{10\ gram}{50\ gram}$ x 50 gram = 10 gram

Span 80 $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Tween $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Nipasol $\frac{0{,}09\ gram}{50\ gram}$ x 50 gram = 0,09 gram

Nipagin $\frac{0{,}01\ gram}{50\ gram}$ x 50 gram = 0,01 gram

Aquadest ad = 50 – (29,1 gram)
= 20,9 gram

Formula IV 12%

Ekstrak biji pinang $\frac{12\ gram}{50\ gram}$ x 50 gram = 12 gram

Setil alkohol $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Asam stearate $\frac{2\ gram}{50\ gram}$ x 50 gram = 2 gram

Propilen $\frac{10\ gram}{50\ gram}$ x 50 gram = 10 gram

Span 80 $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Tween $\frac{2{,}5\ gram}{50\ gram}$ x 50 gram = 2,5 gram

Nipasol $\frac{0{,}09\ \text{gram}}{50\ \text{gram}}$ x 50 gram = 0,09 gram

Nipagin $\frac{0{,}01\ \text{gram}}{50\ \text{gram}}$ x 50 gram = 0,01 gram

Aquadest ad = 50 – (31,1 gram)

= 18,9 gram

Lampiran 14. Hasil uji statistik viskositas

Konsentrasi	Minggu 1	Minggu 2	Minggu 3	Minggu 4
0%	225 ± 4,08	203,33 ± 4,71	195 ± 4,08	183,33 ± 6,23
8%	238,33 ± 2,35	218,33 ± 6,23	198,33 ± 2,35	188,33 ± 6,23
10%	273,33 ± 4,71	256,67 ± 4,71	241,67 ± 2,35	223,33 ± 2,35
12%	283,33 ± 4,71	256,67 ± 4,71	248,33 ± 6,23	223,33 ± 4,71

NPar Tests

Descriptive Statistics

pH	48	5.3483	.61682	4.52	6.48

One-Sample Kolmogorov-Smirnov Test

		Viskositas
Normal Parameters[a,,b]	N	48
	Mean	228.54
	Std. Deviation	29.999
Most Extreme Differences	Absolute	.121
	Positive	.121
	Negative	-.065
	Kolmogorov-Smirnov Z	.838
	Asymp. Sig. (2-tailed)	.484

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Konsentrasi Formula	1	Konsentrasi 0%	12
	2	Konsentrasi 10%	12
	3	Konsentrasi 15%	12
	4	Konsentrasi 20%	12
(Minggu)	1	Minggu 1	12
	2	Minggu 2	12
	3	Minggu 3	12
	4	Minggu 4	12

Descriptive Statistics

Dependent Variable:Viskositas

Konsentrasi Formula	(Minggu)	Mean	Std. Deviation	N
Konsentrasi 0%	Minggu 1	225.00	5.000	3
	Minggu 2	203.33	5.774	3
	Minggu 3	195.00	5.000	3
	Minggu 4	183.33	7.638	3
	Total	201.67	16.697	12
Konsentrasi 10%	Minggu 1	238.33	2.887	3
	Minggu 2	218.33	7.638	3
	Minggu 3	198.33	2.887	3
	Minggu 4	188.33	7.638	3
	Total	210.83	20.652	12
Konsentrasi 15%	Minggu 1	273.33	5.774	3
	Minggu 2	256.67	5.774	3
	Minggu 3	241.67	2.887	3
	Minggu 4	223.33	2.887	3
	Total	248.75	19.671	12
Konsentrasi 20%	Minggu 1	283.33	5.774	3
	Minggu 2	256.67	5.774	3
	Minggu 3	248.33	7.638	3
	Minggu 4	223.33	5.774	3
	Total	252.92	23.008	12
Total	Minggu 1	255.00	25.495	12
	Minggu 2	233.75	25.147	12
	Minggu 3	220.83	25.746	12
	Minggu 4	204.58	20.389	12
	Total	228.54	29.999	48

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

Dependent Variable:Viskositas

F	df1	df2	Sig.
.860	15	32	.610

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

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

Tests of Between-Subjects Effects

Dependent Variable:Viskositas

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	41264.583[a]	15	2750.972	85.191	.000
Intercept	2507102.083	1	2507102.083	77639.290	.000
Formula	24460.417	3	8153.472	252.495	.000
Waktu	16327.083	3	5442.361	168.538	.000
Formula * Waktu	477.083	9	53.009	1.642	.145
Error	1033.333	32	32.292		
Total	2549400.000	48			
Corrected Total	42297.917	47			

a. R Squared = ,976 (Adjusted R Squared = ,964)

Post Hoc Tests

Homogeneous Subsets

Viskositas

Tukey HSD[a]

Konsentrasi Formula	N	Subset for alpha = 0.05	
		1	2
Konsentrasi 0%	12	201.67	
Konsentrasi 10%	12	210.83	
Konsentrasi 15%	12		248.75
Konsentrasi 20%	12		252.92
Sig.		.682	.957

Means for groups in homogeneous subsets are displayed.
Uses Harmonic Mean Sample Size = 12,000.
Alpha = .05.

Lampiran 15. Hasil uji statistik daya sebar krim ekstrak biji pinang.

Konsentrasi	Beban	Minggu 1	Minggu 2	Minggu 3	Minggu 4
0%	Kaca	4.00 ± 0.00	4.58 ± 0.08	4.90 ± 0.00	5.15 ± 0.08
	Kaca + 50	4.15 ± 0.05	5.18 ± 0.04	5.45 ± 0.05	5.68 ± 0.08
	Kaca + 100	4.58 ± 0.08	5.48 ± 0.08	5.83 ± 0.04	6.28 ± 0.11
	Kaca + 150	5.40 ± 0.07	5.98 ± 0.08	6.43 ± 0.04	6.58 ± 0.11
8%	Kaca	2.88 ± 0.08	3.43 ± 0.04	3.88 ± 0.04	4.28 ± 0.04
	Kaca + 50	3.38 ± 0.08	3.80 ± 0.00	4.10 ± 0.07	4.53 ± 0.04
	Kaca +100	3.78 ± 0.04	4.23 ± 0.04	4.40 ± 0.07	4.93 ± 0.04
	Kaca + 150	4.18 ± 0.04	4.43 ± 0.04	4.70 ± 0.13	5.38 ± 0.08
10%	Kaca	2.63 ± 0.04	3.15 ± 0.05	3.63 ± 0.13	3.83 ± 0.04
	Kaca + 50	3.05 ± 0.05	3.48 ± 0.04	3.83 ± 0.11	4.33 ± 0.08
	Kaca + 100	3.60 ± 0.07	3.90 ± 0.07	4.10 ± 0.10	4.60 ± 0.00
	Kaca + 150	3.83 ± 0.11	4.33 ± 0.13	4.50 ± 0.00	5.20 ± 0.12
12%	Kaca	2.40 ± 0.07	2.95 ± 0.05	3.18 ± 0.08	3.58 ± 0.08
	Kaca + 50	2.75 ± 0.05	3.43 ± 0.04	3.63 ± 0.13	4.03 ± 0.08
	Kaca + 100	3.00 ± 0.07	3.68 ± 0.08	4.00 ± 0.10	4.45 ± 0.05
	Kaca + 150	3.40 ± 0.07	4.05 ± 0.08	4.50 ± 0.07	4.93 ± 0.04

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar	256	4.2160	.89004	2.30	6.50

One-Sample Kolmogorov-Smirnov Test

		Daya Sebar
N		256
Normal Parameters[a,,b]	Mean	4.2160
	Std. Deviation	.89004
Most Extreme Differences	Absolute	.074
	Positive	.074
	Negative	-.053
Kolmogorov-Smirnov Z		1.185
Asymp. Sig. (2-tailed)		.121

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula Sediaan	0	0	64
	8	8	64
	10	10	64
	12	12	64
Waktu	1	minggu ke 1	64
	2	minggu ke 2	64
	3	minggu ke 3	64
	4	minggu ke 4	64
Replikasi	1		256
Beban	0	0	64
	50	50	64
	100	100	64
	150	150	64

Descriptive Statistics

Dependent Variable:Daya Sebar

Formula Sediaan	Waktu	Replikasi	Beban	Mean	Std. Deviation	N
0	minggu ke 1	1	0	4.0000	.00000	4
			50	4.1500	.05774	4
			100	4.5750	.09574	4
			150	5.4000	.08165	4
			Total	4.5313	.56535	16
		Total	0	4.0000	.00000	4
			50	4.1500	.05774	4
			100	4.5750	.09574	4
			150	5.4000	.08165	4
			Total	4.5313	.56535	16
	minggu ke 2	1	0	4.5750	.09574	4
			50	5.1750	.05000	4
			100	5.4750	.09574	4
			150	5.9750	.09574	4
			Total	5.3000	.52915	16
		Total	0	4.5750	.09574	4
			50	5.1750	.05000	4
			100	5.4750	.09574	4
			150	5.9750	.09574	4
			Total	5.3000	.52915	16
	minggu ke 3	1	0	4.9000	.00000	4
			50	5.4500	.05774	4
			100	5.4750	.09574	4
			150	5.9750	.09574	4
			Total	5.4500	.39833	16
		Total	0	4.9000	.00000	4
			50	5.4500	.05774	4
			100	5.4750	.09574	4
			150	5.9750	.09574	4

			Total	5.4500	.39833	16
	minggu ke 4	1	0	4.9000	.00000	4
			50	5.4500	.05774	4
			100	5.8250	.05000	4
			150	6.4250	.05000	4
			Total	5.6500	.57504	16
		Total	0	4.9000	.00000	4
			50	5.4500	.05774	4
			100	5.8250	.05000	4
			150	6.4250	.05000	4
			Total	5.6500	.57504	16
	Total	1	0	4.5938	.38204	16
			50	5.0563	.55494	16
			100	5.3375	.48425	16
			150	5.9438	.38292	16
			Total	5.2328	.66453	64
		Total	0	4.5938	.38204	16
			50	5.0563	.55494	16
			100	5.3375	.48425	16
			150	5.9438	.38292	16
			Total	5.2328	.66453	64
8	minggu ke 1	1	0	2.8750	.09574	4
			50	3.3750	.09574	4
			100	3.7750	.05000	4
			150	4.1750	.05000	4
			Total	3.5500	.50200	16
		Total	0	2.8750	.09574	4
			50	3.3750	.09574	4
			100	3.7750	.05000	4
			150	4.1750	.05000	4
			Total	3.5500	.50200	16
	minggu ke 2	1	0	3.4250	.05000	4
			50	3.8000	.00000	4
			100	4.2250	.05000	4
			150	4.4250	.05000	4

		Total	3.9688	.40120	16
	Total	0	3.4250	.05000	4
		50	3.8000	.00000	4
		100	4.2250	.05000	4
		150	4.4250	.05000	4
		Total	3.9688	.40120	16
minggu ke 3	1	0	3.8750	.05000	4
		50	4.1000	.08165	4
		100	4.4000	.08165	4
		150	4.7000	.14142	4
		Total	4.2687	.33210	16
	Total	0	3.8750	.05000	4
		50	4.1000	.08165	4
		100	4.4000	.08165	4
		150	4.7000	.14142	4
		Total	4.2687	.33210	16
minggu ke 4	1	0	4.2750	.05000	4
		50	4.5250	.05000	4
		100	4.9250	.05000	4
		150	5.3750	.09574	4
		Total	4.7750	.43436	16
	Total	0	4.2750	.05000	4
		50	4.5250	.05000	4
		100	4.9250	.05000	4
		150	5.3750	.09574	4
		Total	4.7750	.43436	16
Total	1	0	3.6125	.54145	16
		50	3.9500	.43818	16
		100	4.3313	.42851	16
		150	4.6688	.47006	16
		Total	4.1406	.60990	64
	Total	0	3.6125	.54145	16
		50	3.9500	.43818	16
		100	4.3313	.42851	16
		150	4.6688	.47006	16
		Total	4.1406	.60990	64

10	minggu ke 1	1	0	2.6250	.05000	4
			50	3.0500	.05774	4
			100	3.6000	.08165	4
			150	3.8250	.12583	4
			Total	3.2750	.49058	16
		Total	0	2.6250	.05000	4
			50	3.0500	.05774	4
			100	3.6000	.08165	4
			150	3.8250	.12583	4
			Total	3.2750	.49058	16
	minggu ke 2	1	0	3.1500	.05774	4
			50	3.4750	.05000	4
			100	3.9000	.08165	4
			150	4.3250	.15000	4
			Total	3.7125	.46458	16
		Total	0	3.1500	.05774	4
			50	3.4750	.05000	4
			100	3.9000	.08165	4
			150	4.3250	.15000	4
			Total	3.7125	.46458	16
	minggu ke 3	1	0	3.6250	.15000	4
			50	3.8250	.12583	4
			100	4.1000	.11547	4
			150	4.5000	.00000	4
			Total	4.0125	.35379	16
		Total	0	3.6250	.15000	4
			50	3.8250	.12583	4
			100	4.1000	.11547	4
			150	4.5000	.00000	4
			Total	4.0125	.35379	16
	minggu ke 4	1	0	3.8250	.05000	4
			50	4.3250	.09574	4
			100	4.6000	.00000	4
			150	5.2000	.14142	4
			Total	4.4875	.51881	16
		Total	0	3.8250	.05000	4

			50	4.3250	.09574	4
			100	4.6000	.00000	4
			150	5.2000	.14142	4
			Total	4.4875	.51881	16
	Total	1	0	3.3062	.48507	16
			50	3.6687	.48952	16
			100	4.0500	.38297	16
			150	4.4625	.52010	16
			Total	3.8719	.63307	64
		Total	0	3.3062	.48507	16
			50	3.6687	.48952	16
			100	4.0500	.38297	16
			150	4.4625	.52010	16
			Total	3.8719	.63307	64
12	minggu ke 1	1	0	2.4000	.08165	4
			50	2.7500	.05774	4
			100	3.0000	.08165	4
			150	3.4000	.08165	4
			Total	2.8875	.38275	16
		Total	0	2.4000	.08165	4
			50	2.7500	.05774	4
			100	3.0000	.08165	4
			150	3.4000	.08165	4
			Total	2.8875	.38275	16
	minggu ke 2	1	0	2.9500	.05774	4
			50	3.4250	.05000	4
			100	3.6750	.09574	4
			150	4.0500	.10000	4
			Total	3.5250	.41873	16
		Total	0	2.9500	.05774	4
			50	3.4250	.05000	4
			100	3.6750	.09574	4
			150	4.0500	.10000	4
			Total	3.5250	.41873	16
	minggu ke 3	1	0	3.1500	.05774	4
			50	3.6250	.15000	4

			100	4.0000	.11547	4
			150	4.5000	.08165	4
			Total	3.8188	.52054	16
		Total	0	3.1500	.05774	4
			50	3.6250	.15000	4
			100	4.0000	.11547	4
			150	4.5000	.08165	4
			Total	3.8188	.52054	16
	minggu ke 4	1	0	3.5750	.09574	4
			50	4.0250	.09574	4
			100	4.4500	.05774	4
			150	4.9250	.05000	4
			Total	4.2437	.52150	16
		Total	0	3.5750	.09574	4
			50	4.0250	.09574	4
			100	4.4500	.05774	4
			150	4.9250	.05000	4
			Total	4.2437	.52150	16
	Total	1	0	3.0187	.44154	16
			50	3.4563	.48438	16
			100	3.7813	.55163	16
			150	4.2187	.58790	16
			Total	3.6188	.67327	64
		Total	0	3.0187	.44154	16
			50	3.4563	.48438	16
			100	3.7813	.55163	16
			150	4.2187	.58790	16
			Total	3.6188	.67327	64
Total	minggu ke 1	1	0	2.9750	.63823	16
			50	3.3313	.54249	16
			100	3.7375	.58523	16
			150	4.2000	.77374	16
			Total	3.5609	.77677	64
		Total	0	2.9750	.63823	16
			50	3.3313	.54249	16
			100	3.7375	.58523	16

		150	4.2000	.77374	16
		Total	3.5609	.77677	64
minggu ke 2	1	0	3.5250	.65269	16
		50	3.9688	.73550	16
		100	4.3188	.72224	16
		150	4.6938	.78270	16
		Total	4.1266	.83042	64
	Total	0	3.5250	.65269	16
		50	3.9688	.73550	16
		100	4.3188	.72224	16
		150	4.6938	.78270	16
		Total	4.1266	.83042	64
minggu ke 3	1	0	3.8875	.66521	16
		50	4.2500	.74297	16
		100	4.4937	.61152	16
		150	4.9188	.64106	16
		Total	4.3875	.75267	64
	Total	0	3.8875	.66521	16
		50	4.2500	.74297	16
		100	4.4937	.61152	16
		150	4.9188	.64106	16
		Total	4.3875	.75267	64
minggu ke 4	1	0	4.1438	.52277	16
		50	4.5813	.55404	16
		100	4.9500	.55257	16
		150	5.4813	.59242	16
		Total	4.7891	.73444	64
	Total	0	4.1438	.52277	16
		50	4.5813	.55404	16
		100	4.9500	.55257	16
		150	5.4813	.59242	16
		Total	4.7891	.73444	64
Total	1	0	3.6328	.75131	64
		50	4.0328	.78600	64
		100	4.3750	.74769	64
		150	4.8234	.82765	64

	Total	4.2160	.89004	256
Total	0	3.6328	.75131	64
	50	4.0328	.78600	64
	100	4.3750	.74769	64
	150	4.8234	.82765	64
	Total	4.2160	.89004	256

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

Dependent Variable:Daya Sebar

F	df1	df2	Sig.
2.179	63	192	.000

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

a. Design: Intercept + Konsentrasi + Waktu penyimpanan + Konsentrasi

Tests of Between-Subjects Effects

Dependent Variable:Daya Sebar

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	200.722[a]	63	3.186	476.978	.000
Intercept	4550.346	1	4550.346	681221.339	.000
Formula	96.942	3	32.314	4837.651	.000
Waktu	50.875	3	16.958	2538.782	.000
Replikasi	.000	0	.	.	.
Beban	49.147	3	16.382	2452.575	.000
Formula * Waktu	1.441	9	.160	23.964	.000
Formula * Replikasi	.000	0	.	.	.
Formula * Beban	.469	9	.052	7.808	.000
Waktu * Replikasi	.000	0	.	.	.
Waktu * Beban	.583	9	.065	9.695	.000
Replikasi * Beban	.000	0	.	.	.
Formula * Waktu * Replikasi	.000	0	.	.	.
Formula * Waktu * Beban	1.265	27	.047	7.013	.000
Formula * Replikasi * Beban	.000	0	.	.	.
Waktu * Replikasi * Beban	.000	0	.	.	.
Formula * Waktu * Replikasi * Beban	.000	0	.	.	.
Error	1.282	192	.007		
Total	4752.350	256			
Corrected Total	202.004	255			

a. R Squared = ,994 (Adjusted R Squared = ,992)

b. Computed using alpha = ,05

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar	256	4.2160	.89004	2.30	6.50

Kruskal-Wallis Test

Ranks

	Waktu	N	Mean Rank
Daya Sebar	minggu ke 1	64	74.25
	minggu ke 2	64	118.03
	minggu ke 3	64	143.92
	minggu ke 4	64	177.80
	Total	256	

Test Statistics[a,b]

	Daya Sebar
Chi-Square	66.910
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Waktu

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Sebar	256	4.2160	.89004	2.30	6.50
Beban	256	75.00	56.011	0	150

Ranks

	Beban	N	Mean Rank
Daya Sebar	0	64	81.50
	50	64	111.55
	100	64	143.95
	150	64	176.99
	Total	256	

Test Statistics[a,b]

	Daya Sebar
Chi-Square	59.492
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Beban

Lampiran 16. Hasil uji daya lekat krim ekstrak biji pinang.

Konsentrasi	Minggu 1	Minggu 2	Minggu 3	Minggu 4
0%	0.83 ± 0.05	0.67 ± 0.05	0.57 ± 0.05	0.43 ± 0.50
8%	1.13 ± 0.05	1.07 ± 0.05	0.97 ± 0.05	0.73 ± 0.05
10%	1.23 ± 0.05	1.17 ± 0.05	1.07 ± 0.05	0.97 ± 0.05
12%	1.33 ± 0.50	1.23 ± 0.50	1.00 ± 0.50	0.97 ± 0.50

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Daya Lekat	48	.9604	.25411	.40	1.40

One-Sample Kolmogorov-Smirnov Test

		Daya Lekat
	N	48
Normal Parameters[a,,b]	Mean	.9604
	Std. Deviation	.25411
Most Extreme Differences	Absolute	.166
	Positive	.076
	Negative	-.166
	Kolmogorov-Smirnov Z	1.151
	Asymp. Sig. (2-tailed)	.142

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula	1	Konsentrasi 0%	12
	2	Konsentrasi 8%	12
	3	Konsentrasi 10%	12
	4	Konsentrasi 12%	12
Waktu	1		16
	2		16
	3		16

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

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

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

Tests of Between-Subjects Effects

Dependent Variable:Daya Lekat

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

Source	Type III Sum of Squares	df	Mean Square	F	Sig.

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

Corrected Model	2.017[a]	11	.183	6.488	.000
Intercept	44.275	1	44.275	1566.494	.000

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

Formula	1.974	3	.658	23.280	.000
Waktu	.015	2	.008	.273	.763

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

Formula * Waktu	.028	6	.005	.165	.985
Error	1.018	36	.028		

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

Total	47.310	48			
Corrected Total	3.035	47			

Descriptive Statistics

Dependent Variable:Daya Lekat

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	1	.6000	.16330	4
	2	.6250	.15000	4
	3	.6500	.20817	4
	Total	.6250	.16026	12
Konsentrasi 8%	1	1.0000	.14142	4
	2	.9500	.17321	4
	3	.9750	.22174	4
	Total	.9750	.16583	12
Konsentrasi 10%	1	1.1250	.09574	4
	2	1.1000	.08165	4
	3	1.1000	.18257	4
	Total	1.1083	.11645	12
Konsentrasi 12%	1	1.2000	.18257	4
	2	1.0750	.20616	4
	3	1.1250	.15000	4
	Total	1.1333	.17233	12
Total	1	.9812	.27379	16
	2	.9375	.24187	16
	3	.9625	.26045	16
	Total	.9604	.25411	48

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

Dependent Variable:Daya Lekat

F	df1	df2	Sig.
1.051	11	36	.426

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

a. R Squared = ,665 (Adjusted R Squared = ,562)

Tests of Between-Subjects Effects

Dependent Variable:Daya Lekat

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.017[a]	11	.183	6.488	.000
Intercept	44.275	1	44.275	1566.494	.000
Formula	1.974	3	.658	23.280	.000
Waktu	.015	2	.008	.273	.763
Formula * Waktu	.028	6	.005	.165	.985
Error	1.018	36	.028		
Total	47.310	48			
Corrected Total	3.035	47			

a. R Squared = ,665 (Adjusted R Squared = ,562)

Post Hoc Tests

Daya Lekat

Formula	N	Subset for alpha = 0.05	
		1	2
Konsentrasi 0%	12	.6250	
Konsentrasi 8%	12		.9750
Konsentrasi 10%	12		1.1083
Konsentrasi 12%	12		1.1333
Sig.		1.000	.074

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 12,000.

Lampiran 17. Hasil uji statistik pH krim ekstrak biji pinang.

Formula	Waktu	x ± SD
0%	Minggu 1	6,463333 ± 0,012472
	Minggu 2	6,356667 ± 0,018856
	Minggu 3	6,226667 ± 0,02357
	Minggu 4	6,123333 ± 0,012472
8%	Minggu 1	5,546667 ± 0,016997
	Minggu 2	5,426667 ± 0,024944
	Minggu 3	5,31 ± 0,029439
	Minggu 4	5,223333 ± 0,018856
10%	Minggu 1	5,17 ± 0,01633
	Minggu 2	5,11 ± 0,014142
	Minggu 3	5,04 ± 0,113431
	Minggu 4	4,923333 ± 0,004714
12%	Minggu 1	4,846667 ± 0,024944
	Minggu 2	4,73 ± 0,014142
	Minggu 3	4,613333 ± 0,026247
	Minggu 4	4,523333 ± 0,004714

NPar Tests

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
pH	48	5.3483	.61682	4.52	6.48

One-Sample Kolmogorov-Smirnov Test

		pH
	N	48
Normal Parameters[a,,b]	Mean	5.3483
	Std. Deviation	.61682
Most Extreme Differences	Absolute	.142
	Positive	.135
	Negative	-.142
	Kolmogorov-Smirnov Z	.981
	Asymp. Sig. (2-tailed)	.291

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula	1	Konsentrasi 0%	12
	2	Konsentrasi 8%	12
	3	Konsentrasi 10%	12
	4	Konsentrasi 12%	12
Waktu	1	Minggu 1	12
	2	Minggu 2	12
	3	Minggu 3	12
	4	Minggu 4	12

Descriptive Statistics

Dependent Variable:pH

Formula	Waktu	Mean	Std. Deviation	N
Konsentrasi 0%	Minggu 1	6.4633	.01528	3
	Minggu 2	6.3567	.02309	3
	Minggu 3	6.2267	.02887	3
	Minggu 4	6.1233	.01528	3
	Total	6.2925	.13565	12
Konsentrasi 8%	Minggu 1	5.5467	.02082	3
	Minggu 2	5.4267	.03055	3
	Minggu 3	5.3100	.03606	3
	Minggu 4	5.2233	.02309	3
	Total	5.3767	.12950	12
Konsentrasi 10%	Minggu 1	5.1700	.02000	3
	Minggu 2	5.1100	.01732	3
	Minggu 3	4.9800	.03606	3
	Minggu 4	4.9233	.00577	3
	Total	5.0458	.10475	12
Konsentrasi 12%	Minggu 1	4.8467	.03055	3
	Minggu 2	4.7300	.01732	3
	Minggu 3	4.6133	.03215	3
	Minggu 4	4.5233	.00577	3
	Total	4.6783	.12876	12
Total	Minggu 1	5.5067	.63255	12
	Minggu 2	5.4058	.62889	12
	Minggu 3	5.2825	.62548	12
	Minggu 4	5.1983	.61527	12
	Total	5.3483	.61682	48

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

Dependent Variable:pH

F	df1	df2	Sig.
1.526	15	32	.154

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

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

Tests of Between-Subjects Effects

Dependent Variable:pH

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17.863[a]	15	1.191	2034.236	.000
Intercept	1373.024	1	1373.024	2345379.302	.000
Formula	17.192	3	5.731	9788.992	.000
Waktu	.663	3	.221	377.234	.000
Formula * Waktu	.009	9	.001	1.651	.143
Error	.019	32	.001		
Total	1390.906	48			
Corrected Total	17.882	47			

a. R Squared = ,999 (Adjusted R Squared = ,998)

Post Hoc Tests

pH

Tukey HSD[a]

Formula	N	Subset for alpha = 0.05			
		1	2	3	4
Konsentrasi 12%	12	4.6783			
Konsentrasi 10%	12		5.0458		
Konsentrasi 8%	12			5.3767	
Konsentrasi 0%	12				6.2925
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 12,000.