BAB V
KESIMPULAN DAN SARAN

A. Kesimpulan

Pertama, sediaan *lotion* setelah penambahan ekstrak etanol buah tomat menunjukkan hasil yang tidak stabil.

Kedua, *lotion* ekstrak etanol buah tomat (*Solanum lycopersicon* L.*)* memiliki aktivitas antioksidan.

Ketiga, hasil menunjukkan bahwa *lotion* ekstrak etanol buah tomat yang memiliki aktivitas antioksidan yang paling kuat yaitu F5 dengan penambahan konsentrasi ekstrak sebanyak 25% pada hari ke-1 dengan nilai IC_{50} 191,4024 ppm.

B. Saran

Pertama, perlu dilakukan penelitian lebih lanjut dengan menggunakan bsis atau konsistensi basis yang berbeda

Kedua, perlu dilakukan penelitian aktivitas antioksidan pada *lotion* ekstrak etanol buah tomat dengan menggunakan metode selain DPPH untuk mengetahui seberapa besar potensi antioksidan terhadap radikal bebas jenis .

Ketiga, perlu dilakukan optimasi fase gerak yang cocok untuk mendapatkan hasil KLT yang baik.

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LAMPIRAN

Lampiran 1. Determinasi tumbuhan tomat (*Solanum lycopersicon* L.)

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
BADAN PENELITIAN DAN PENGEMBANGAN KESEHATAN
BALAI BESAR PENELITIAN DAN PENGEMBANGAN
TANAMAN OBAT DAN OBAT TRADISIONAL
Jalan Raya Lawu No. 11 Tawangmangu, Karanganyar, Jawa Tengah 57792
Telepon : (0271) 697010 Faksimile : (0271) 697451
Surat Elektronik b2p2to2t@gmail.com / b2p2to2t@litbang.depkes.go.id
Laman www.b2p2toot.litbang.kemkes.go.id

Nomor : YK.01.03/2/ 2091 /2019 24 Juni 2019
Hal : Keterangan Determinasi

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

Merujuk surat Saudara nomor: 4233/A10 – 4/15.12.2018 tanggal 15 Desember 2018 hal permohonan determinasi, dengan ini kami sampaikan bahwa hasil determinasi sampel tanaman sebagai berikut:

Nama Sampel	: Tomat
Sampel	: Sampel Segar/ Vegetatif
Spesies	: *Lycopersicon esculentum* Mill.
Sinonim	: *Solanum lycopersicum* L.; *Lycopersicon lycopersicum* (L.) H. Karst.
Familia	: Solanaceae
Nama Pemohon	: Firda Sonia
Penanggung Jawab Identifikasi	: Dyah Subositi, M.Sc.

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

Atas perhatian Saudara, kami sampaikan terima kasih.

Plh. Kepala Balai Besar Litbang
Tanaman Obat dan Obat Tradisional,

Nita Supriyati, M.Biotech., Apt.
NIP. 19781152002122001

Lampiran 2. Rangkaian kegiatan dan alat yang digunakan

1. Proses pembuatan bubur tomat

Buah tomat segar

Penimbangan buah tomat segar

Buah tomat yang sudah dibersihkan

Pembuatan bubur tomat

Bubur tomat

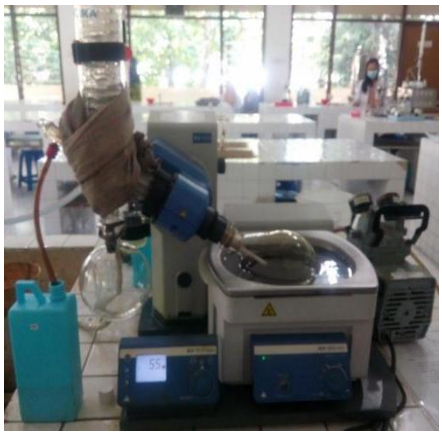
Penimbangan bubur tomat

2. Proses maserasi

Alat dan bahan

Ampas tomat

Penyaringan dengan kertas saring



Pemekatan ekstrak dengan *rotary vacum evaporator*

Ekstrak kental buah tomat

3. Pengujian etanol buah tomat ekstrak

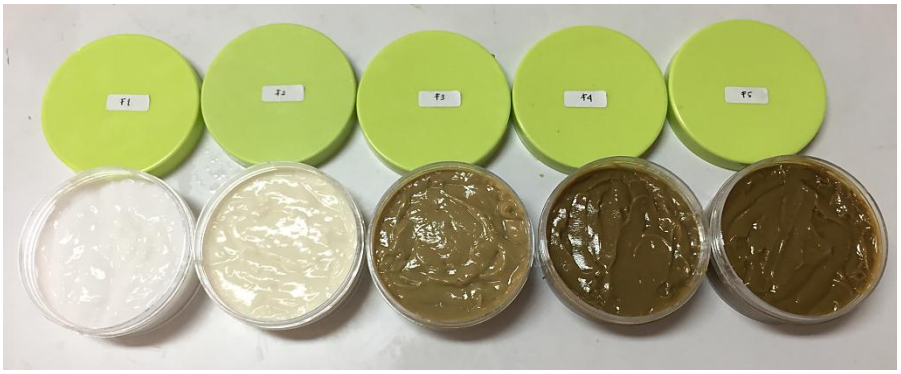
Uji tabung senyawa fenol

Uji tabung senyawa flavonoid

4. Pembuatan sediaan *lotion*

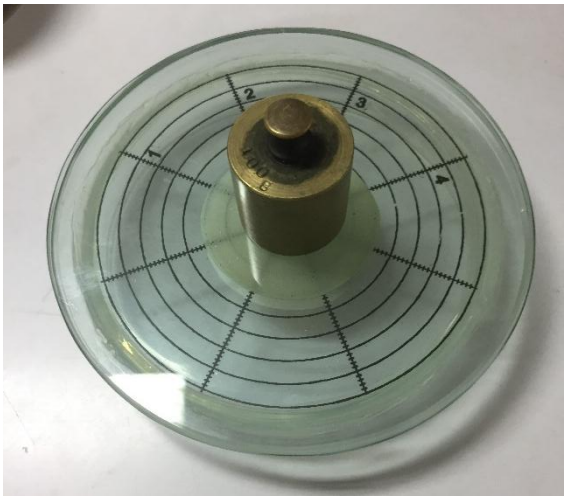
Peleburan fase minyak dan fase air

Pencampuran fase minyak dan fase air



Hasil formula *lotion*

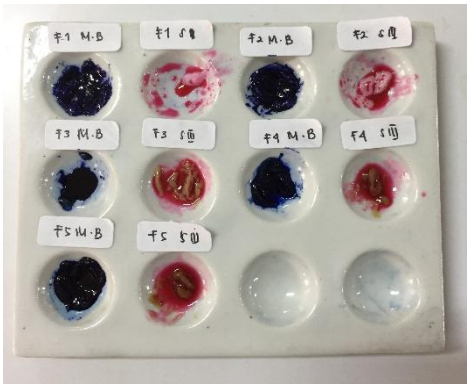
5. Pengujian sediaan *lotion*



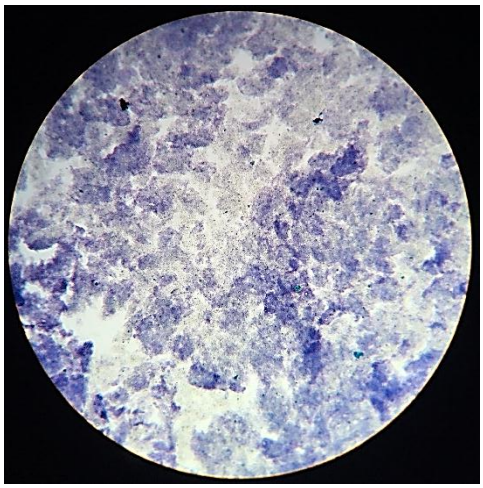
Uji daya sebar *lotion*

Uji daya lekat *lotion*

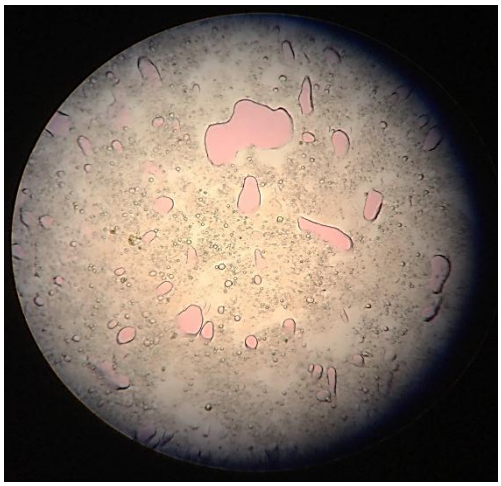
Uji pH *lotion*



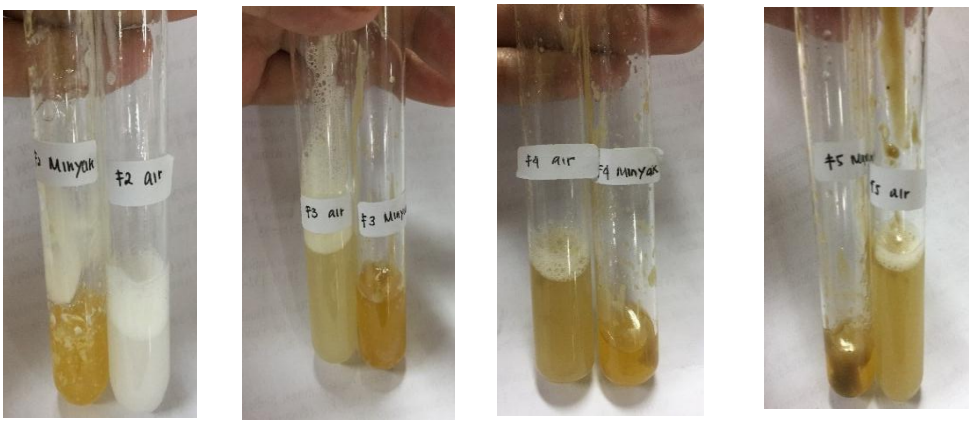
Uji tipe emulsi metode pewarnaan



Pewarnaan dengan *methylen blue*



Pewarnaan dengan sudan III



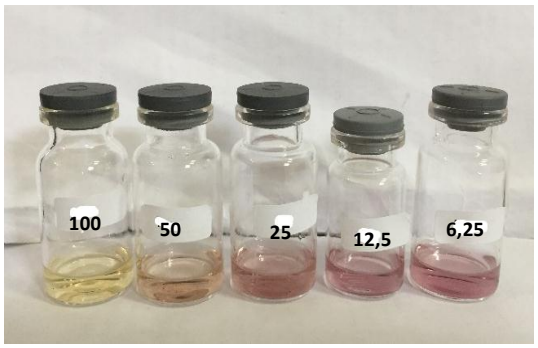
Uji tipe emulsi metode pengenceran dengan air

Uji viskositas *lotion*

Uji *cycling test*

6. Pengujian aktivitas antioksidan

Larutan seri konsentrasi



Perubahan warna larutan uji

Lampiran 3. Perhitungan rendemen ekstrak buah tomat

Berat bubur (gram)	Berat gelas kosong (gram)	Berat gelas + ektstrak (gram)	Berat ekstrak (gram)	Persentase rendemen (% b/b)
4000	67,24	186,66	119,42	33,50

Persentase rendemen ekstrak etanol buah tomat:

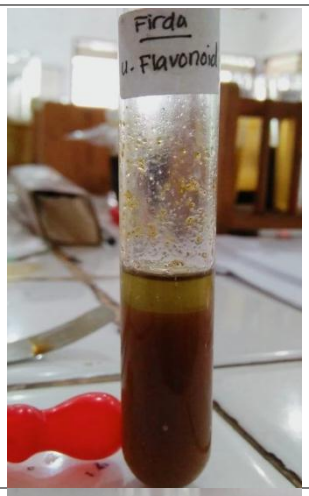
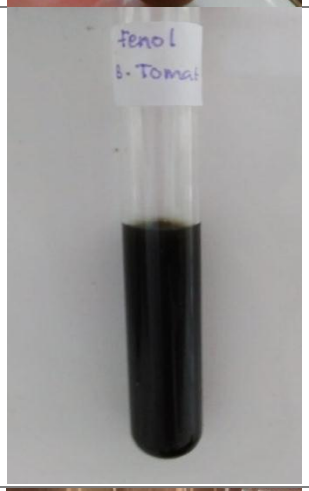
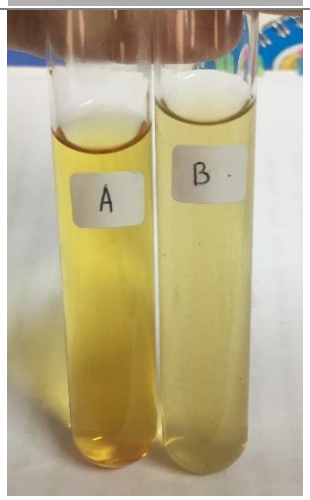
$$\text{Persentase rendemen} = \frac{\text{berat ekstrak (gram)}}{\text{berat bubur (gram)}} \text{ x } 100\%$$

$$= \frac{119,42}{4000} \text{ x } 100\%$$

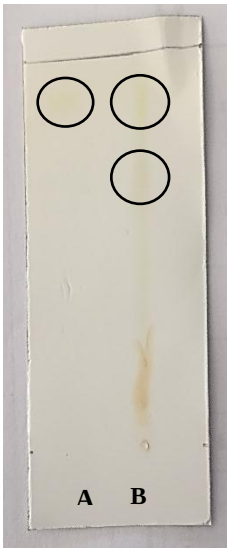
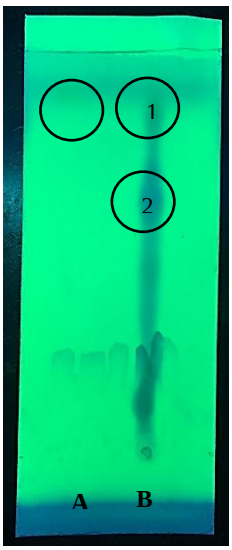
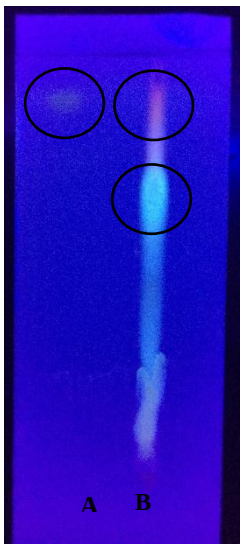
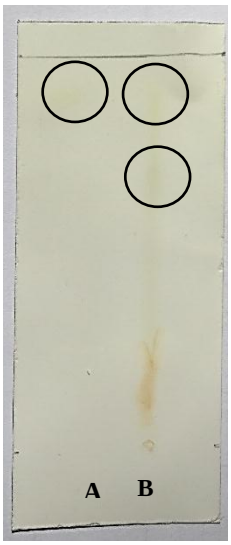
$$= 33,50 \text{ (\% b/b)}$$

Jadi, rendemen ekstrak etanol buah tomat adalah 33,50 (% b/b)

Lampiran 4. Identifikasi kandungan senyawa dengan metode reaksi warna

Identifikasi	Gambar	Keterangan
Flavonoid		**(+)** Flavonoid Terbentuk warna kuning pada lapisan amil akohol
Fenolik		(+) Fenolik Terbentuk warna hitam
Vitamin C		**(+)** Vitamin C Warna iodium hilang A : larutan iodium B : larutan ekstrak setelah ditetesi iodium

Lampiran 5. Identifikasi kandungan senyawa dengan metode KLT

Senyawa	Lempeng KLT	UV 254	UV 366	Penampak bercak
Flavonoid				

Baku pembanding : kuersetin

Penampak bercak : sitroborat

Perhitungan Rf :

A. Baku : **4,9 / 5,5 = 0,89**

B. Sampel : 1. **4,9 / 5,5 = 0,89**

2. 3,8 / 5,5 = 0,69

Lampiran 6. Perhitungan HLB *lotion* ekstrak etanol buah tomat

R/	Asam stearat	2
	Paraffin cair	3
	Gliserin	10
	Setil alkohol	3
	Triethanolamin	2
	Nipagin	0,18
	Nipasol	0,02
	Parfum	qs
	Aquadest ad	100

HLB asam stearat : 15

HLB setil alkohol : 12

HLB paraffin cair : 15

Jumlah fase minyak : 2 + 3 + 3 = 8

Asam stearat : $\frac{2}{8} \text{ x } 15 = 3{,}75$

Setil alkohol : $\frac{3}{8} \text{ x } 12 = 4{,}5$

Paraffin cair : $\frac{3}{8} \text{ x } 15 = 5{,}625$

Jumlah HLB 3,75 + 4,5 + 5,625 = 13,875 > 7

Jadi, tipe sediaan *lotion* yaitu minyak dalam air

Lampiran 7. Hasil uji daya sebar sediaan lotion ekstrak etanol buah tomat

Hari ke-1

BEBAN GRAM	FORMULA														
	F1			F2			F3			F4			F5		
	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3
49,151	4,7	4,7	4,7	4,3	4,3	4,3	4	4,1	4,2	3,8	3,8	3,8	3,5	3,5	3,5
	4,7	4,7	4,7	4,4	4,4	4,3	4,1	4,1	4	3,7	3,7	3,7	3,4	3,4	3,3
	4,6	4,7	4,6	4,4	4,3	4,4	4	4	4	3,7	3,8	3,7	3,5	3,4	3,5
	4,7	4,6	4,6	4,4	4,4	4,3	4	4	4,1	3,7	3,7	3,7	3,5	3,4	3,5
99,151	5	5	5	4,6	4,6	4,6	4,3	4,3	4,4	3,9	4	4	3,6	3,6	3,6
	4,9	4,9	5	4,7	4,6	4,6	4,4	4,3	4,3	4	3,9	4	3,7	3,7	3,5
	5	5	4,9	4,6	4,6	4,6	4,2	4,4	4,3	4	3,9	4	3,6	3,6	3,6
	5	4,9	5	4,6	4,6	4,6	4,4	4,4	4,2	3,9	3,9	4	3,6	3,7	3,7
149,151	5,1	5,2	5,3	4,9	4,8	4,9	4,7	4,6	4,7	4,3	4,3	4,3	4	4	4,1
	5,2	5,2	5,2	4,9	4,9	4,9	4,7	4,7	4,6	4,3	4,3	4,3	4,2	4,1	4
	5,1	5,1	5,1	4,9	4,8	4,9	4,6	4,7	4,7	4,3	4,2	4,4	4,1	4	4,1
	5,1	5,1	5,2	4,8	4,9	4,9	4,6	4,7	4,8	4.3	4,4	4,4	4,1	4	4,1
199,151	5,3	5,4	5,4	5,1	5,1	5,1	4,9	4,9	5	4,7	4,7	4,7	4,3	4,4	4,3
	5,5	5,3	5,5	5,2	5,2	5,2	4,9	4,9	5	4,6	4,6	4,7	4,3	4,3	4,4
	5,3	5,3	5,4	5,1	5,2	5,1	5	5	4,9	4,7	4,5	4,6	4,3	4,4	4,4
	5,4	5,4	5,3	5,2	5,2	5,2	5	4,9	5	4,6	4,7	4,7	4.3	4,4	4,3
249,151	5,7	5,7	5,7	5,4	5,4	5,6	5,3	5,2	5,2	4,9	4,9	4,9	4,5	4,6	4,7
	5,6	5,7	5,6	5,5	5,6	5,5	5,2	5,2	5,2	4,8	4,9	4,8	4,6	4,7	4,6
	5,7	5,7	5,8	5,5	5,5	5,6	5,3	5,2	5,3	4,9	4,9	4,9	4,6	4,5	4,6
	5,6	5,7	5,7	5,6	5,5	5,6	5,2	5,3	5,2	4,8	4,8	4,9	4,6	4,6	4,6
299,151	6	5,9	5,9	5,6	5,7	5,5	5,2	5,4	5,4	5	5	5,1	4,7	4,8	4,9
	5,9	5,8	5,8	5,7	5,6	5,5	5,2	5,4	5,5	5,1	5,2	5	4,8	4,9	4,8
	5,8	5,8	6	5,6	5,7	5,6	5,3	5,6	5,5	5	5,1	5,1	4,8	4,7	4,7
	5,9	6	5,8	5,6	5,7	5,6	5,3	5,7	5,6	5,2	5,1	5,1	4,7	4,7	4,8

Hari ke-21

BEBAN (gram)	FORMULA														
	F1			F2			F3			F4			F5		
	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3
49,151	3,8	3,8	3,7	3,6	3,6	3,6	3,1	3	3	2,5	2,5	2,5	2,3	2,3	2,3
	3,9	3,8	3,8	3,6	3,7	3,6	3,1	3	3	2,5	2,5	2,6	2,3	2,3	2,3
	3,9	3,9	3,8	3,7	3,7	3,7	3,1	3	3	2,5	2,5	2,5	2,4	2,3	2,4
	3,9	3,9	3,8	3,7	3,7	3,7	3,1	3,1	3	2,5	2,6	2,5	2,4	2,4	2,4
99,151	4,2	4,1	4	3,8	3,8	3,8	3,3	3,3	3,3	2,7	2,6	2,7	2,6	2,6	2,6
	4,2	4,2	4	3,8	3,8	3,8	3,3	3,3	3,3	2,6	2,6	2,6	2,6	2,6	2,6
	4,1	4,2	4	3,8	3,8	3,8	3,3	3,3	3,3	2,6	2,6	2,6	2,6	2,6	2,6
	4,1	4,2	4	3,8	3,9	3,8	3,4	3,3	3,4	2,6	2,7	2,6	2,7	2,7	2,7
149,151	4,3	4,3	4,3	4,2	4,2	4,2	3,4	3,4	3,4	2,8	2,8	2,8	2,9	2,9	2,9
	4,4	4,3	4,3	4,3	4,2	4,2	3,4	3,4	3,4	2,9	2,8	2,9	3	2,9	2,9
	4,4	4,3	4,3	4,1	4,3	4,2	3,5	3,4	3,5	2,8	2,8	2,8	3	3	3
	4,4	4,3	4,3	4,2	4,3	4,2	3,5	3,4	3,5	2,8	2,9	2,8	3	3	3
199,151	4,6	4,6	4,6	4,5	4,4	4,4	3,6	3,6	3,6	3	3	3	3,1	3,1	3,1
	4,,6	4,6	4,6	4,5	4,4	4,4	3,6	3,6	3,6	3,1	3,1	3,1	3,1	3,1	3,1
	4,6	4,6	4,6	4,4	4,4	4,4	3,7	3,6	3,6	3,1	3,1	3,1	3,1	3,1	3,1
	4,6	4,6	4,6	4,4	4,5	4,4	3,7	3,7	3,6	3,1	3,1	3,1	3,1	3,1	3,1
249,151	4,8	4,8	4,8	4,7	4,7	4,6	3,9	3,9	3,9	3,3	3,3	3,3	3,2	3,2	3,2
	4,8	4,8	4,8	4,6	4,6	4,7	3,9	3,9	4	3,3	3,3	3,3	3,2	3,2	3,2
	4,8	4,9	4,8	4,7	4,6	4,6	4	4	4	3,3	3,3	3,3	3,3	3,2	3,2
	4,9	4,9	4,8	4,6	4,6	4,7	4	4	4	3,3	3,3	3,3	3,3	3,2	3,2
299,151	5	5	5,1	5,2	5,2	5,2	4,2	4,2	4,2	3,6	3,6	3,6	3,4	3,4	3,4
	5	5,1	5,1	5,2	5,3	5,2	4,2	4,2	4,2	3,6	3,7	3,7	3,4	3,5	3,4
	5	5,1	5,2	5,3	5,3	5,2	4,2	4,2	4,2	3,7	3,7	3,7	3,5	3,4	3,5
	5	5,1	5,2	5,3	5,3	5,2	4,2	4,2	4,2	3,7	3,7	3,7	3,5	3,4	3,5

Hasil rata-rata uji daya sebar *lotion* esktrak buah tomat

		Diameter penyebaran hari ke-1 (cm)			Diameter penyebaran hari ke-21 (cm)		
Formula	**Beban (gram)**	**R1**	**R2**	**R3**	**R1**	**R2**	**R3**
F1	49,151	4,675	4,675	4,65	3,875	3,85	3,775
	99,151	4,975	4,95	4,975	4,15	4,175	4
	149,151	5,125	5,15	5,2	4,375	4,3	4,3
	199,151	5,375	5,35	5,4	4,6	4,6	4,6
	249,151	5,65	5,7	5,5	4,825	4,85	4,8
	299,151	5,9	5,835	5,875	5	5,075	5,15
F2	49,151	4,375	4,35	4,325	3,65	3,675	3,65
	99,151	4,63	4,625	4,6	3,8	3,825	3,8
	149,151	4,875	4,85	4,9	4,2	4,25	4,2
	199,151	5,15	5,175	5,15	4,45	4,425	4,4
	249,151	5,5	5,5	5,575	4,65	4,625	4,65
	299,151	5,63	5,65	5,55	5,25	5,275	5,2
F3	49,151	4,025	4,05	4,075	3,1	3,025	3
	99,151	4,325	4,35	4,3	3,325	3,3	3,325
	149,151	4,65	4,675	4,7	3,45	3,4	3,45
	199,151	4,95	4,925	4,975	3,65	3,625	3,6
	249,151	5,25	5,225	5,225	3,95	3,95	3,975
	299,151	5,25	5,525	5,5	4,2	4,2	4,2
F4	49,151	3,75	3,75	3,73	2,5	2,52	2,525
	99,151	3,95	3,925	4	2,625	2,635	2,635
	149,151	4,3	4,3	4,4	2,825	2,825	2,825
	199,151	4,65	4,625	4,675	3,075	3,075	3,075
	249,151	4,85	4,875	4,875	3,3	3,3	3,3
	299,151	5,075	5,1	5,075	3,65	3,675	3,675
F5	49,151	3,475	3,425	3,45	2,35	2,325	2,35
	99,151	3,625	3,65	3,6	2,65	2,625	2,625
	149,151	4,1	4	4,075	2,975	2,95	2,95
	199,151	4,3	4,375	4,35	3,1	3,1	3,1
	249,151	4,575	4,6	4,625	3,25	3,2	3,2
	299,151	4,75	4,775	4,8	3,45	3,425	3,45

Formula	**Daya sebar (cm)**	
	Hari ke-1	**Hari ke-21**
F1	5,276 ± 0,414	4,461 ± 0,436
F2	5,023 ± 0,471	4,332 ± 0,544
F3	4,776 ± 0,500	3,596 ± 0,401
F4	4,439 ± 0,492	3,002 ± 0,408
F5	4,142 ± 0,498	2,949 ± 0,377

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Dayasebar	30	2,94	5,28	4,2000	,76726
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Dayasebar
N		30
Normal Parameters[a,b]	Mean	4,2000
	Std. Deviation	,76726
Most Extreme Differences	Absolute	,168
	Positive	,140
	Negative	-,168
Kolmogorov-Smirnov Z		,919
Asymp. Sig. (2-tailed)		,367

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Fomula	1	Formula 1	6
	2	Formula 2	6
	3	Formula3	6
	4	Fomula 4	6
	5	Formula 5	6
Waktu	1	Hari ke-1	15
	2	Hari ke-21	15

Descriptive Statistics

Dependent Variable: Dayasebar

Fomula	Waktu	Mean	Std. Deviation	N
	Hari ke-1	5,2760	,00854	3
Formula 1	Hari ke-21	4,4537	,02250	3
	Total	4,8648	,45067	6
	Hari ke-1	5,0230	,00529	3
Formula 2	Hari ke-21	4,3320	,01453	3
	Total	4,6775	,37860	6
	Hari ke-1	4,7767	,03009	3
Formula3	Hari ke-21	3,5903	,00666	3
	Total	4,1835	,65007	6
	Hari ke-1	4,4550	,02425	3
Fomula 4	Hari ke-21	3,0023	,00551	3
	Total	3,7287	,79581	6
	Hari ke-1	4,1420	,00693	3
Formula 5	Hari ke-21	2,9490	,01277	3
	Total	3,5455	,65350	6
	Hari ke-1	4,7345	,41623	15
Total	Hari ke-21	3,6655	,65871	15
	Total	4,2000	,76726	30

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

Dependent Variable: Dayasebar

F	df1	df2	Sig.
2,384	9	20	,051

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

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

Estimated Marginal Means

1. Fomula

Dependent Variable: Dayasebar

Fomula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula 1	4,865	,007	4,851	4,879
Formula 2	4,678	,007	4,664	4,691
Formula3	4,184	,007	4,170	4,197
Fomula 4	3,729	,007	3,715	3,742
Formula 5	3,546	,007	3,532	3,559

2. Waktu

Dependent Variable: Dayasebar

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Hari ke-1	4,735	,004	4,726	4,743
Hari ke-21	3,665	,004	3,657	3,674

3. Fomula * Waktu

Dependent Variable: Dayasebar

Fomula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula 1	Hari ke-1	5,276	,009	5,257	5,295
	Hari ke-21	4,454	,009	4,434	4,473
Formula 2	Hari ke-1	5,023	,009	5,004	5,042
	Hari ke-21	4,332	,009	4,313	4,351
Formula3	Hari ke-1	4,777	,009	4,757	4,796
	Hari ke-21	3,590	,009	3,571	3,610
Fomula 4	Hari ke-1	4,455	,009	4,436	4,474
	Hari ke-21	3,002	,009	2,983	3,022
Formula 5	Hari ke-1	4,142	,009	4,123	4,161
	Hari ke-21	2,949	,009	2,930	2,968

Post Hoc Tests

Homogeneous Subsets

Dayasebar

Tukey HSD[a,b]

Fomula	N	Subset				
		1	2	3	4	5
Formula 5	6	3,5455				
Fomula 4	6		3,7287			
Formula3	6			4,1835		
Formula 2	6				4,6775	
Formula 1	6					4,8648
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

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

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

b. Alpha = ,05.

T-Test

Fomula 1

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
Dayasebar	Equal variances assumed	6,326	,066	51,072	4	,000	,81467	,01595	,77038	,85895
	Equal variances not assumed			51,072	2,418	,000	,81467	,01595	,75624	,87309

Fomula 2

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
Dayasebar	Equal variances assumed	1,662	,267	77,418	4	,000	,69100	,00893	,66622	,71578
	Equal variances not assumed			77,418	2,522	,000	,69100	,00893	,65929	,72271

Fomula 3

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
Dayasebar	Equal variances assumed	8,844	,041	66,678	4	,000	1,18633	,01779	1,13693	1,23573
	Equal variances not assumed			66,678	2,195	,000	1,18633	,01779	1,11595	1,25671

Fomula 4

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
Dayasebar	Equal variances assumed	6,744	,060	136,912	4	,000	1,43667	,01049	1,40753	1,46580
	Equal variances not assumed			136,912	2,400	,000	1,43667	,01049	1,39802	1,47531

Fomula 5

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
Dayalekat	Equal variances assumed	1,274	,322	142,252	4	,000	1,19300	,00839	1,16972	1,21628
	Equal variances not assumed			142,252	3,084	,000	1,19300	,00839	1,16672	1,21928

Lampiran 8. Hasil uji daya lekat *lotion* ekstrak etanol buah tomat

Formula	Waktu pengujian	Daya lekat (detik)		
		R1	R2	R3
F1	Hari ke-1	01,07	01,07	01,05
	Hari ke-21	01,17	01,19	01,21
F2	Hari ke-1	01,09	01,08	01,09
	Hari ke-21	01,22	01,23	01,22
F3	Hari ke-1	01,14	01,13	01,14
	Hari ke-21	01,25	01,27	01,26
F4	Hari ke-1	01,16	01,15	01,16
	Hari ke-21	01,28	01,30	01,28
F5	Hari ke-1	01,19	01,20	01,21
	Hari ke-21	01,33	01,34	01,33

Formula	**Daya lekat (cm)**	
	Hari ke-1	**Hari ke-21**
F1	1,06 ± 0,01	1,19 ± 0,02
F2	1,09 ± 0,01	1,22 ± 0,01
F3	1,14 ± 0,01	1,26 ± 0,01
F4	1,16 ± 0,01	1,29 ± 0,05
F5	1,20 ± 0,01	1,33 ± 0,01

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Daya lekat	30	1,05	1,34	1,1937	,08340
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Daya lekat
N		30
Normal Parameters[a,b]	Mean	1,1937
	Std. Deviation	,08340
Most Extreme Differences	Absolute	,093
	Positive	,093
	Negative	-,053
Kolmogorov-Smirnov Z		,510
Asymp. Sig. (2-tailed)		,957

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Fomula	1	Formula 1	6
	2	Formula 2	6
	3	Formula3	6
	4	Fomula 4	6
	5	Formula 5	6
Waktu	1	Hai ke-1	15
	2	Hari ke-21	15

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

Dependent Variable: Daya lekat

F	df1	df2	Sig.
1,061	9	20	,430

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

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

Estimated Marginal Means

1. Fomula

Dependent Variable: Daya lekat

Fomula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula 1	1,127	,004	1,118	1,135
Formula 2	1,155	,004	1,146	1,164
Formula3	1,198	,004	1,190	1,207
Fomula 4	1,222	,004	1,213	1,230
Formula 5	1,267	,004	1,258	1,275

2. Fomula * Waktu

Dependent Variable: Daya lekat

Fomula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula 1	Hai ke-1	1,063	,006	1,051	1,076
	Hari ke-21	1,190	,006	1,178	1,202
Formula 2	Hai ke-1	1,087	,006	1,074	1,099
	Hari ke-21	1,223	,006	1,211	1,236
Formula3	Hai ke-1	1,137	,006	1,124	1,149
	Hari ke-21	1,260	,006	1,248	1,272
Fomula 4	Hai ke-1	1,157	,006	1,144	1,169
	Hari ke-21	1,287	,006	1,274	1,299
Formula 5	Hai ke-1	1,200	,006	1,188	1,212
	Hari ke-21	1,333	,006	1,321	1,346

3. Waktu

Dependent Variable: Daya lekat

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Hai ke-1	1,129	,003	1,123	1,134
Hari ke-21	1,259	,003	1,253	1,264

Post Hoc Tests
Homogeneous Subsets

Daya lekat

Viskositas

Tukey HSD[a,b]

Fomula	N	Subset				
		1	2	3	4	5
Formula 1	6	1,1267				
Formula 2	6		1,1550			
Formula3	6			1,1983		
Fomula 4	6				1,2217	
Formula 5	6					1,2667
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = ,000.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test
Fomula 1

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
Dayalekat	Equal variances assumed	,400	,561	-9,500	4	,001	-,12667	,01333	-,16369	-,08965
	Equal variances not assumed			-9,500	3,200	,002	-,12667	,01333	-,16764	-,08570

Fomula 2

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
Dayalekat	Equal variances assumed	,000	1,000	-28,991	4	,000	-,13667	,00471	-,14975	-,12358
	Equal variances not assumed			-28,991	4,000	,000	-,13667	,00471	-,14975	-,12358

Fomula 3

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
Dayalekat	Equal variances assumed	,400	,561	-18,500	4	,000	-,12333	,00667	-,14184	-,10482
	Equal variances not assumed			-18,500	3,200	,000	-,12333	,00667	-,14382	-,10285

Fomula 4

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
Dayalekat	Equal variances assumed	3,200	,148	-17,441	4	,000	-,13000	,00745	-,15069	-,10931
	Equal variances not assumed			-17,441	2,941	,000	-,13000	,00745	-,15399	-,10601

Fomula 5

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
Dayalekat	Equal variances assumed	,400	,561	-20,000	4	,000	-,13333	,00667	-,15184	-,11482
	Equal variances not assumed			-20,000	3,200	,000	-,13333	,00667	-,15382	-,11285

Lampiran 9. Hasil uji pH *lotion* ekstrak etanol buah tomat

Formula	Waktu pengujian	pH

		R1	R2	R3
F1	Hari ke-1	7,44	7,46	7,45
	Hari ke-21	7,56	7,58	7,55
F2	Hari ke-1	6,65	6,61	6,64
	Hari ke-21	6,72	6,69	6,73
F3	Hari ke-1	6,53	6,56	6,55
	Hari ke-21	6,58	6,62	6,61
F4	Hari ke-1	6,31	6,33	6,35
	Hari ke-21	6,38	6,41	6,42
F5	Hari ke-1	5,86	5,90	5,93
	Hari ke-21	5,89	5,95	5,98

Formula	pH	
	Hari ke-1	Hari ke-21
F1	7,450 ± 0,010	7,563 ± 0,015
F2	6,633 ± 0,021	6,713 ± 0,021
F3	6,547 ± 0,015	6,603 ± 0,021
F4	6,330 ± 0,020	6,403 ± 0,021
F5	5,897 ± 0,035	5,940 ± 0,046

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
pH	30	5,86	7,58	6,6080	,52973
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		pH
N		30
Normal Parameters[a,b]	Mean	6,6080
	Std. Deviation	,52973
Most Extreme Differences	Absolute	,209
	Positive	,209
	Negative	-,142
Kolmogorov-Smirnov Z		1,144
Asymp. Sig. (2-tailed)		,146

a. Test distribution is Normal.

a. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula	1	Formula I	6
	2	Formula II	6
	3	Formula III	6
	4	Formula IV	6
	5	Formula V	6
Waktu	1	Hari ke-1	15
	2	Hari ke-21	15

Descriptive Statistics

Dependent Variable: pH

Formula	Waktu	Mean	Std. Deviation	N
Formula I	Hari ke-1	7,4500	,01000	3
	Hari ke-21	7,5633	,01528	3
	Total	7,5067	,06314	6
Formula II	Hari ke-1	6,6333	,02082	3
	Hari ke-21	6,7133	,02082	3
	Total	6,6733	,04761	6
Formula III	Hari ke-1	6,5467	,01528	3
	Hari ke-21	6,6033	,02082	3
	Total	6,5750	,03507	6
Formula IV	Hari ke-1	6,3300	,02000	3
	Hari ke-21	6,4033	,02082	3
	Total	6,3667	,04412	6
Formula V	Hari ke-1	5,8967	,03512	3
	Hari ke-21	5,9400	,04583	3
	Total	5,9183	,04355	6
Total	Hari ke-1	6,5713	,52608	15
	Hari ke-21	6,6447	,54921	15
	Total	6,6080	,52973	30

Levene's Test of Equality of Error Variancesa

Dependent Variable: pH

F	df1	df2	Sig.
1,303	9	20	,295

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

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

Estimated Marginal Means

1. Formula

Dependent Variable: pH

Formula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula I	7,507	,010	7,486	7,528
Formula II	6,673	,010	6,652	6,694
Formula III	6,575	,010	6,554	6,596
Formula IV	6,367	,010	6,346	6,388
Formula V	5,918	,010	5,897	5,939

2. Waktu

Dependent Variable: pH

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Hari ke-1	6,571	,006	6,558	6,585
Hari ke-21	6,645	,006	6,631	6,658

3. Formula * Waktu

Dependent Variable: pH

Formula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula I	Hari ke-1	7,450	,014	7,420	7,480
	Hari ke-21	7,563	,014	7,534	7,593
Formula II	Hari ke-1	6,633	,014	6,604	6,663
	Hari ke-21	6,713	,014	6,684	6,743
Formula III	Hari ke-1	6,547	,014	6,517	6,576
	Hari ke-21	6,603	,014	6,574	6,633
Formula IV	Hari ke-1	6,330	,014	6,300	6,360
	Hari ke-21	6,403	,014	6,374	6,433
Formula V	Hari ke-1	5,897	,014	5,867	5,926
	Hari ke-21	5,940	,014	5,910	5,970

Post Hoc Tests
Homogeneous Subsets

pH

Tukey HSD[a,b]

Formula	N	Subset				
		1	2	3	4	5
Formula V	6	5,9183				
Formula IV	6		6,3667			
Formula III	6			6,5750		
Formula II	6				6,6733	
Formula I	6					7,5067
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = ,001.

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

b. Alpha = ,05.

T-Test

Formula 1

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
Ph	Equal variances assumed	,727	,442	-10,752	4	,000	-,11333	,01054	-,14260	-,08407
	Equal variances not assumed			-10,752	3,448	,001	-,11333	,01054	-,14454	-,08212

Formula 2

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
pH	Equal variances assumed	,000	1,000	-4,707	4	,009	-,08000	,01700	-,12719	-,03281
	Equal variances not assumed			-4,707	4,000	,009	-,08000	,01700	-,12719	-,03281

Formula 3

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
pH	Equal variances assumed	3,670	,128	-,883	4	,427	-,05333	,06037	-,22095	,11428
	Equal variances not assumed			-,883	2,681	,449	-,05333	,06037	-,25903	,15237

Formula 4

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
pH	Equal variances assumed	,073	,801	-4,400	4	,012	-,07333	,01667	-,11961	-,02706
	Equal variances not assumed			-4,400	3,994	,012	-,07333	,01667	-,11964	-,02703

Formula 5

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
pH	Equal variances assumed	,308	,609	-1,300	4	,263	-,04333	,03333	-,13588	,04921
	Equal variances not assumed			-1,300	3,747	,268	-,04333	,03333	-,13840	,05174

Lampiran 10. Hasil uji viskositas *lotion* ekstrak etanol buah tomat

Formula	Waktu pengujian	Viskositas (dPa's)		
		R1	R2	R3
F1	Hari ke-1	10	15	10
	Hari ke-21	20	25	20
F2	Hari ke-1	15	20	20
	Hari ke-21	25	30	25
F3	Hari ke-1	30	30	25
	Hari ke-21	35	30	35
F4	Hari ke-1	30	30	35
	Hari ke-21	40	45	40
F5	Hari ke-1	50	60	50
	Hari ke-21	70	80	80

Formula	Viskositas (dPa's)	
	Hari ke-1	Hari ke-21
F1	11,667 ± 2,887	21,667 ± 2,887
F2	18,333 ± 2,887	26,667 ± 2,887
F3	28,333 ± 2,887	33,333 ± 2,887
F4	31,667 ± 2,887	41,667 ± 5,774
F5	53,333 ± 5,774	76,667 ± 5,774

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Viskositas	30	10,00	80,00	34,3333	18,55715
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Viskositas
N		30
Normal Parameters[a,b]	Mean	34,3333
	Std. Deviation	18,55715
Most Extreme Differences	Absolute	,192
	Positive	,192
	Negative	-,095
Kolmogorov-Smirnov Z		1,053
Asymp. Sig. (2-tailed)		,217

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Fomula	1	Formula 1	6
	2	Formula 2	6
	3	Formula3	6
	4	Fomula 4	6
	5	Formula 5	6
Waktu	1	Hai ke-1	15
	2	Hari ke-21	15

Descriptive Statistics

Dependent Variable: Viskositas

Fomula	Waktu	Mean	Std. Deviation	N
Formula 1	Hai ke-1	1,0633	,01155	3
	Hari ke-21	1,1900	,02000	3
	Total	1,1267	,07090	6
Formula 2	Hai ke-1	1,0867	,00577	3
	Hari ke-21	1,2233	,00577	3
	Total	1,1550	,07503	6
Formula3	Hai ke-1	1,1367	,00577	3
	Hari ke-21	1,2600	,01000	3
	Total	1,1983	,06795	6
Fomula 4	Hai ke-1	1,1567	,00577	3
	Hari ke-21	1,2867	,01155	3
	Total	1,2217	,07167	6
Formula 5	Hai ke-1	1,2000	,01000	3
	Hari ke-21	1,3333	,00577	3
	Total	1,2667	,07339	6
Total	Hai ke-1	1,1287	,05111	15
	Hari ke-21	1,2587	,05235	15
	Total	1,1937	,08340	30

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

Dependent Variable: Viskositas

F	df1	df2	Sig.
1,778	9	20	,136

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

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

Estimated Marginal Means

1. Fomula

Dependent Variable: Viskositas

Fomula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula 1	1,127	,004	1,118	1,135
Formula 2	1,155	,004	1,146	1,164
Formula3	1,198	,004	1,190	1,207
Fomula 4	1,222	,004	1,213	1,230
Formula 5	1,267	,004	1,258	1,275

2. Fomula * Waktu

Dependent Variable: Viskositas

Fomula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula 1	Hai ke-1	1,063	,006	1,051	1,076
	Hari ke-21	1,190	,006	1,178	1,202
Formula 2	Hai ke-1	1,087	,006	1,074	1,099
	Hari ke-21	1,223	,006	1,211	1,236
Formula3	Hai ke-1	1,137	,006	1,124	1,149
	Hari ke-21	1,260	,006	1,248	1,272
Fomula 4	Hai ke-1	1,157	,006	1,144	1,169
	Hari ke-21	1,287	,006	1,274	1,299
Formula 5	Hai ke-1	1,200	,006	1,188	1,212
	Hari ke-21	1,333	,006	1,321	1,346

3. Waktu

Dependent Variable: Viskositas

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Hai ke-1	1,129	,003	1,123	1,134
Hari ke-21	1,259	,003	1,253	1,264

Post Hoc Tests

Homogeneous Subsets

Viskositas

Tukey HSD[a,b]

Fomula	N	Subset		
		1	2	3
Formula 1	6	16,6667		
Formula 2	6	22,5000		
Formula3	6		30,8333	
Fomula 4	6		36,6667	
Formula 5	6			65,0000
Sig.		,079	,079	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 13,333.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test

Formula 1

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
Viskositas	Equal variances assumed	,000	1,000	-4,243	4	,013	-10,00000	2,35702	-16,54414	-3,45586
	Equal variances not assumed			-4,243	4,000	,013	-10,00000	2,35702	-16,54414	-3,45586

Formula 2

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
Viskositas	Equal variances assumed	,000	1,000	-3,536	4	,024	-8,33333	2,35702	-14,87748	-1,78919
	Equal variances not assumed			-3,536	4,000	,024	-8,33333	2,35702	-14,87748	-1,78919

Formula 3

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
Viskositas	Equal variances assumed	,000	1,000	-2,121	4	,101	-5,00000	2,35702	-11,54414	1,54414
	Equal variances not assumed			-2,121	4,000	,101	-5,00000	2,35702	-11,54414	1,54414

Formula 4

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
Viskositas	Equal variances assumed	,000	1,000	-4,243	4	,013	-10,00000	2,35702	-16,54414	-3,45586
	Equal variances not assumed			-4,243	4,000	,013	-10,00000	2,35702	-16,54414	-3,45586

Formula 5

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
Viskositas	Equal variances assumed	,000	1,000	-4,950	4	,008	-23,33333	4,71405	-36,42162	-10,24505
	Equal variances not assumed			-4,950	4,000	,008	-23,33333	4,71405	-36,42162	-10,24505

Lampiran 11. Hasil uji mutu fisik *lotion* sesudah *cycling test*

1. Uji daya sebar

Formula	Waktu pengujian	Daya sebar (cm)		
		R1	R2	R3
F1	Sebelum *cycling test*	5,284	5,277	5,267
	Sesudah *cycling test*	4,971	4,946	4,963
F2	Sebelum *cycling test*	5,027	5,025	5,017
	Sesudah *cycling test*	4,683	4,638	4,708
F3	Sebelum *cycling test*	4,742	4,792	4,796
	Sesudah *cycling test*	4,100	4,108	4,138
F4	Sebelum *cycling test*	4,429	4,429	4,459
	Sesudah *cycling test*	3,596	3,417	3,613
F5	Sebelum *cycling test*	4,138	3,613	4,15
	Sesudah *cycling test*	3,250	3,267	3,221

Formula	**Daya sebar (cm)**	
	Sebelum	**Sesudah**
F1	5,154 ± 0,401	4,832 ± 0,529
F2	4,783 ± 0,487	4,279 ± 0,435
F3	4,308 ± 0,772	3,736 ± 0,437
F4	3,771 ± 0,733	3,375 ± 0,420
F5	3,517 ± 0,584	2,944 ± 0,396

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Dayasebar	30	3,22	5,28	4,4265	,62664
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Dayasebar
N		30
Normal Parameters[a,b]	Mean	4,4265
	Std. Deviation	,62664
Most Extreme Differences	Absolute	,132
	Positive	,103
	Negative	-,132
Kolmogorov-Smirnov Z		,724
Asymp. Sig. (2-tailed)		,671

a. Test distribution is Normal.
b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Fomula	1	Formula 1	6
	2	Formula 2	6
	3	Formula3	6
	4	Fomula 4	6
	5	Formula 5	6
Waktu	1	sebelum cycling test	15
	2	sesudah cycling test	15

Descriptive Statistics

Dependent Variable: Dayasebar

Fomula	Waktu	Mean	Std. Deviation	N
Formula 1	sebelum cycling test	5,2760	,00854	3
	sesudah cycling test	4,9633	,01750	3
	Total	5,1197	,17170	6
Formula 2	sebelum cycling test	5,0230	,00529	3
	sesudah cycling test	4,6763	,03547	3
	Total	4,8497	,19123	6
Formula3	sebelum cycling test	4,7767	,03009	3
	sesudah cycling test	4,1153	,02003	3
	Total	4,4460	,36295	6
Fomula 4	sebelum cycling test	4,4390	,01732	3
	sesudah cycling test	3,6073	,00981	3
	Total	4,0232	,45570	6
Formula 5	sebelum cycling test	4,1420	,00693	3
	sesudah cycling test	3,2460	,02326	3
	Total	3,6940	,49100	6
Total	sebelum cycling test	4,7313	,41853	15
	sesudah cycling test	4,1217	,66265	15
	Total	4,4265	,62664	30

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

Dependent Variable: Dayasebar

F	df1	df2	Sig.
2,252	9	20	,063

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

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

Estimated Marginal Means

1. Fomula

Dependent Variable: Dayasebar

Fomula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula 1	5,120	,008	5,103	5,137
Formula 2	4,850	,008	4,833	4,867
Formula3	4,446	,008	4,429	4,463
Fomula 4	4,023	,008	4,006	4,040
Formula 5	3,694	,008	3,677	3,711

2. Waktu

Dependent Variable: Dayasebar

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
sebelum cycling test	4,731	,005	4,721	4,742
sesudah cycling test	4,122	,005	4,111	4,132

3. Fomula * Waktu

Dependent Variable: Dayasebar

Fomula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula 1	sebelum cycling test	5,276	,011	5,252	5,300
	sesudah cycling test	4,963	,011	4,939	4,987
Formula 2	sebelum cycling test	5,023	,011	4,999	5,047
	sesudah cycling test	4,676	,011	4,652	4,700
Formula3	sebelum cycling test	4,777	,011	4,753	4,801
	sesudah cycling test	4,115	,011	4,091	4,139
Fomula 4	sebelum cycling test	4,439	,011	4,415	4,463
	sesudah cycling test	3,607	,011	3,583	3,631
Formula 5	sebelum cycling test	4,142	,011	4,118	4,166
	sesudah cycling test	3,246	,011	3,222	3,270

Post Hoc Tests
Homogeneous Subsets

Dayasebar

Tukey HSD[a,b]

Fomula	N	Subset				
		1	2	3	4	5
Formula 5	6	3,6940				
Fomula 4	6		4,0232			
Formula3	6			4,4460		
Formula 2	6				4,8497	
Formula 1	6					5,1197
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = ,000.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test

Fomula 1

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
Dayasebar	Equal variances assumed	,308	,609	9,827	4	,001	,08667	,00882	,06218	,11115
	Equal variances not assumed			9,827	3,920	,001	,08667	,00882	,06198	,11135

Fomula 2

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
Dayasebar	Equal variances assumed	2,571	,184	12,728	4	,000	,12000	,00943	,09382	,14618
	Equal variances not assumed			12,728	2,560	,002	,12000	,00943	,08686	,15314

Fomula 3

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
Dayasebar	Equal variances assumed	2,571	,184	-11,314	4	,000	-,10667	,00943	-,13284	-,08049
	Equal variances not assumed			-11,314	2,560	,003	-,10667	,00943	-,13981	-,07352

Fomula 4

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
Dayasebar	Equal variances assumed	,400	,561	-20,000	4	,000	-,13333	,00667	-,15184	-,11482
	Equal variances not assumed			-20,000	3,200	,000	-,13333	,00667	-,15382	-,11285

Fomula 5

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
Dayasebar	Equal variances assumed	,727	,442	-12,649	4	,000	-,13333	,01054	-,16260	-,10407
	Equal variances not assumed			-12,649	3,448	,001	-,13333	,01054	-,16454	-,10212

2. Uji daya lekat

Formula	Waktu pengujian	Daya lekat (detik)		
		R1	R2	R3
F1	Sebelum *cycling test*	01,07	01,07	01,05
	Sesudah *cycling test*	01,15	01,14	01,16
F2	Sebelum *cycling test*	01,09	01,08	01,09
	Sesudah *cycling test*	01,19	01,22	01,21
F3	Sebelum *cycling test*	01,14	01,13	01,14
	Sesudah *cycling test*	01,24	01,26	01,23
F4	Sebelum *cycling test*	01,16	01,15	01,16
	Sesudah *cycling test*	01,28	01,30	01,29
F5	Sebelum *cycling test*	01,19	01,20	01,21
	Sesudah *cycling test*	01,33	01,32	01,35

Formula	Daya lekat (detik)	
	Sebelum	**Sesudah**
F1	1,06 ± 0,01	1,15 ± 0,010
F2	1,09 ± 0,01	1,207 ± 0,015
F3	1,14 ± 0,01	1,243 ± 0,015
F4	1,26 ± 0,01	1,290 ± 0,010
F5	1,20 ± 0,01	1,333 ± 0,015

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Dayalekat	30	1,05	1,35	1,1867	,08310
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Dayalekat
N		30
Normal Parameters[a,b]	Mean	1,1867
	Std. Deviation	,08310
Most Extreme Differences	Absolute	,126
	Positive	,126
	Negative	-,069
Kolmogorov-Smirnov Z		,689
Asymp. Sig. (2-tailed)		,729

a. Test distribution is Normal.
b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula	1	Formula I	6
	2	Formula II	6
	3	Formula III	6
	4	Fomula IV	6
	5	Formula V	6
Waktu	1	Sebelum cycling test	15
	2	Sesudah cycling test	15

Descriptive Statistics

Dependent Variable: Dayalekat

Formula	Waktu	Mean	Std. Deviation	N
Formula I	Sebelum cycling test	1,0633	,01155	3
	Sesudah cycling test	1,1500	,01000	3
	Total	1,1067	,04844	6
Formula II	Sebelum cycling test	1,0867	,00577	3
	Sesudah cycling test	1,2067	,01528	3
	Total	1,1467	,06653	6
Formula III	Sebelum cycling test	1,1367	,00577	3
	Sesudah cycling test	1,2433	,01528	3
	Total	1,1900	,05933	6
Fomula IV	Sebelum cycling test	1,1567	,00577	3
	Sesudah cycling test	1,2900	,01000	3
	Total	1,2233	,07339	6
Formula V	Sebelum cycling test	1,2000	,01000	3
	Sesudah cycling test	1,3333	,01528	3
	Total	1,2667	,07394	6
Total	Sebelum cycling test	1,1287	,05111	15
	Sesudah cycling test	1,2447	,06696	15
	Total	1,1867	,08310	30

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

Dependent Variable: Dayalekat

F	df1	df2	Sig.
,877	9	20	,561

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

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

Estimated Marginal Means

1. Formula

Dependent Variable: Dayalekat

Formula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula I	1,107	,005	1,097	1,116
Formula II	1,147	,005	1,137	1,156
Formula III	1,190	,005	1,181	1,199
Fomula IV	1,223	,005	1,214	1,233
Formula V	1,267	,005	1,257	1,276

2. Waktu

Dependent Variable: Dayalekat

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Sebelum cycling test	1,129	,003	1,123	1,135
Sesudah cycling test	1,245	,003	1,239	1,251

3. Formula * Waktu

Dependent Variable: Dayalekat

Formula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula I	Sebelum cycling test	1,063	,006	1,050	1,077
	Sesudah cycling test	1,150	,006	1,137	1,163
Formula II	Sebelum cycling test	1,087	,006	1,073	1,100
	Sesudah cycling test	1,207	,006	1,193	1,220
Formula III	Sebelum cycling test	1,137	,006	1,123	1,150
	Sesudah cycling test	1,243	,006	1,230	1,257
Fomula IV	Sebelum cycling test	1,157	,006	1,143	1,170
	Sesudah cycling test	1,290	,006	1,277	1,303
Formula V	Sebelum cycling test	1,200	,006	1,187	1,213
	Sesudah cycling test	1,333	,006	1,320	1,347

Post Hoc Tests

Homogeneous Subsets

Dayalekat

Tukey HSD[a,b]

Formula	N	Subset				
		1	2	3	4	5
Formula I	6	1,1067				
Formula II	6		1,1467			
Formula III	6			1,1900		
Fomula IV	6				1,2233	
Formula V	6					1,2667
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = ,000.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test

Formula 1

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
Dayalekat	Equal variances assumed	,308	,609	-9,827	4	,001	-,08667	,00882	-,11115	-,06218
	Equal variances not assumed			-9,827	3,920	,001	-,08667	,00882	-,11135	-,06198

Formula 2

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
Dayalekat	Equal variances assumed	2,571	,184	-12,728	4	,000	-,12000	,00943	-,14618	-,09382
	Equal variances not assumed			-12,728	2,560	,002	-,12000	,00943	-,15314	-,08686

Formula 3

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
Dayalekat	Equal variances assumed	2,571	,184	-11,314	4	,000	-,10667	,00943	-,13284	-,08049
	Equal variances not assumed			-11,314	2,560	,003	-,10667	,00943	-,13981	-,07352

Formula 4

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
Dayalekat	Equal variances assumed	,400	,561	-20,000	4	,000	-,13333	,00667	-,15184	-,11482
	Equal variances not assumed			-20,000	3,200	,000	-,13333	,00667	-,15382	-,11285

Formula 5

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
Dayalekat	Equal variances assumed	,727	,442	-12,649	4	,000	-,13333	,01054	-,16260	-,10407
	Equal variances not assumed			-12,649	3,448	,001	-,13333	,01054	-,16454	-,10212

3. Uji pH

Formula	Waktu pengujian	pH		
		R1	R2	R3
F1	Sebelum *cycling test*	7,44	7,46	7,45
	Sesudah *cycling test*	7,5	7,51	7,49
F2	Sebelum *cycling test*	6,65	6,61	6,64
	Sesudah *cycling test*	6,82	6,81	6,79
F3	Sebelum *cycling test*	6,53	6,56	6,55
	Sesudah *cycling test*	6,72	6,70	6,73
F4	Sebelum *cycling test*	6,31	6,33	6,35
	Sesudah *cycling test*	6,42	6,45	6,48
F5	Sebelum *cycling test*	5,86	5,90	5,93
	Sesudah *cycling test*	6,12	6,17	6,14

Formula	pH	
	Sebelum	Sesudah
F1	7,450 ± 0,010	7,500 ± 0,010
F2	6,633 ± 0,021	6,807 ± 0,015
F3	6,547 ± 0,015	6,717 ± 0,015
F4	6,330 ± 0,020	6,450 ± 0,030
F5	5,897 ± 0,035	6,143 ± 0,025

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
pH	30	5,86	7,51	6,6473	,49536
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		pH
N		30
Norm al Parameters[a,b]	Mean	6,6473
	Std. Deviation	,49536
Most Extreme Differences	Absolute	,164
	Positive	,164
	Negative	-,145
Kolmogorov-Smirnov Z		,897
Asymp. Sig. (2-tailed)		,397

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula	1	Formula I	6
	2	Formula II	6
	3	Formula III	6
	4	Fomula IV	6
	5	Formula V	6
Waktu	1	Sebelum cycling test	15
	2	Sesudah cycling test	15

Descriptive Statistics

Dependent Variable: pH

Formula	Waktu	Mean	Std. Deviation	N
Formula I	Sebelum cycling test	7,4500	,01000	3
	Sesudah cycling test	7,5000	,01000	3
	Total	7,4750	,02881	6
Formula II	Sebelum cycling test	6,6333	,02082	3
	Sesudah cycling test	6,8067	,01528	3
	Total	6,7200	,09633	6
Formula III	Sebelum cycling test	6,5467	,01528	3
	Sesudah cycling test	6,7167	,01528	3
	Total	6,6317	,09411	6
Fomula IV	Sebelum cycling test	6,3300	,02000	3
	Sesudah cycling test	6,4500	,03000	3
	Total	6,3900	,06957	6
Formula V	Sebelum cycling test	5,8967	,03512	3
	Sesudah cycling test	6,1433	,02517	3
	Total	6,0200	,13784	6
Total	Sebelum cycling test	6,5713	,52608	15
	Sesudah cycling test	6,7233	,46814	15
	Total	6,6473	,49536	30

Levene's Test of Equality of Error Variancesa
Dependent Variable: pH

F	df1	df2	Sig.
,810	9	20	,613

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

Estimated Marginal Means

1. Formula

Dependent Variable: pH

Formula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula I	7,475	,009	7,457	7,493
Formula II	6,720	,009	6,702	6,738
Formula III	6,632	,009	6,614	6,650
Fomula IV	6,390	,009	6,372	6,408
Formula V	6,020	,009	6,002	6,038

2. Waktu

Dependent Variable: pH

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Sebelum cycling test	6,571	,005	6,560	6,583
Sesudah cycling test	6,723	,005	6,712	6,735

3. Formula * Waktu

Dependent Variable: pH

Formula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula I	Sebelum cycling test	7,450	,012	7,424	7,476
	Sesudah cycling test	7,500	,012	7,474	7,526
Formula II	Sebelum cycling test	6,633	,012	6,608	6,659
	Sesudah cycling test	6,807	,012	6,781	6,832
Formula III	Sebelum cycling test	6,547	,012	6,521	6,572
	Sesudah cycling test	6,717	,012	6,691	6,742
Fomula IV	Sebelum cycling test	6,330	,012	6,304	6,356
	Sesudah cycling test	6,450	,012	6,424	6,476
Formula V	Sebelum cycling test	5,897	,012	5,871	5,922
	Sesudah cycling test	6,143	,012	6,118	6,169

Post Hoc Tests

Homogeneous Subsets

pH

Tukey HSD[a,b]

Formula	N	Subset				
		1	2	3	4	5
Formula V	6	6,0200				
Fomula IV	6		6,3900			
Formula III	6			6,6317		
Formula II	6				6,7200	
Formula I	6					7,4750
Sig.		1,000	1,000	1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = ,000.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test

Formula 1

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
pH	Equal variances assumed	,000	1,000	-6,124	4	,004	-,05000	,00816	-,07267	-,02733
	Equal variances not assumed			-6,124	4,000	,004	-,05000	,00816	-,07267	-,02733

Formula 2

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
pH	Equal variances assumed	,500	,519	-11,628	4	,000	-,17333	,01491	-,21472	-,13194
	Equal variances not assumed			-11,628	3,670	,000	-,17333	,01491	-,21623	-,13043

Formula 3

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
pH	Equal variances assumed	,000	1,000	-13,630	4	,000	-,17000	,01247	-,20463	-,13537
	Equal variances not assumed			-13,630	4,000	,000	-,17000	,01247	-,20463	-,13537

Formula 4

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
pH	Equal variances assumed	,308	,609	-5,765	4	,004	-,12000	,02082	-,17780	-,06220
	Equal variances not assumed			-5,765	3,485	,007	-,12000	,02082	-,18133	-,05867

Formula 5

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
pH	Equal variances assumed	,269	,632	-9,889	4	,001	-,24667	,02494	-,31592	-,17741
	Equal variances not assumed			-9,889	3,625	,001	-,24667	,02494	-,31884	-,17449

4. Uji viskositas

Formula	Waktu pengujian	Viskositas (dPa's)		
		R1	**R2**	**R3**
F1	Sebelum *cycling test*	10	15	10
	Sesudah *cycling test*	20	25	20
F2	Sebelum *cycling test*	15	20	20
	Sesudah *cycling test*	25	25	30
F3	Sebelum *cycling test*	30	30	25
	Sesudah *cycling test*	35	35	30
F4	Sebelum *cycling test*	30	30	35
	Sesudah *cycling test*	45	40	40
F5	Sebelum *cycling test*	50	60	50
	Sesudah *cycling test*	70	80	75

Formula	Viskositas (dPa's)	
	Sebelum	**Sesudah**
F1	11,667 ± 2,887	21,667 ± 2,887
F2	18,333 ± 2,887	26,667 ± 2,887
F3	28,333 ± 2,887	33,333 ± 2,887
F4	31,667 ± 2,887	41,667 ± 2,887
F5	53,333 ± 5,774	75 ± 5

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Viskositas	30	10,00	80,00	34,0000	18,30771
Valid N (listwise)	30				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Viskositas
N		30
Normal Parameters[a,b]	Mean	34,0000
	Std. Deviation	18,30771
Most Extreme Differences	Absolute	,186
	Positive	,186
	Negative	-,095
Kolmogorov-Smirnov Z		1,021
Asymp. Sig. (2-tailed)		,248

a. Test distribution is Normal.

b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Fomula	1	Formula 1	6
	2	Formula 2	6
	3	Formula3	6
	4	Fomula 4	6
	5	Formula 5	6
Waktu	1	sebelum cycling test	15
	2	setelah cycling test	15

Descriptive Statistics

Dependent Variable: Viskositas

Fomula	Waktu	Mean	Std. Deviation	N
Formula 1	sebelum cycling test	11,6667	2,88675	3
	setelah cycling test	20,0000	5,00000	3
	Total	15,8333	5,84523	6
Formula 2	sebelum cycling test	18,3333	2,88675	3
	setelah cycling test	26,6667	2,88675	3
	Total	22,5000	5,24404	6
Formula3	sebelum cycling test	28,3333	2,88675	3
	setelah cycling test	33,3333	2,88675	3
	Total	30,8333	3,76386	6
Fomula 4	sebelum cycling test	31,6667	2,88675	3
	setelah cycling test	41,6667	2,88675	3
	Total	36,6667	6,05530	6
Formula 5	sebelum cycling test	53,3333	5,77350	3
	setelah cycling test	75,0000	5,00000	3
	Total	64,1667	12,81275	6
Total	sebelum cycling test	28,6667	15,05545	15
	setelah cycling test	39,3333	20,16598	15
	Total	34,0000	18,30771	30

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

Dependent Variable: Viskositas

F	df1	df2	Sig.
,674	9	20	,723

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

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

Estimated Marginal Means

1. Fomula

Dependent Variable: Viskositas

Fomula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Formula 1	15,833	1,537	12,628	19,039
Formula 2	22,500	1,537	19,295	25,705
Formula3	30,833	1,537	27,628	34,039
Fomula 4	36,667	1,537	33,461	39,872
Formula 5	64,167	1,537	60,961	67,372

2. Waktu

Dependent Variable: Viskositas

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
sebelum cycling test	28,667	,972	26,639	30,694
setelah cycling test	39,333	,972	37,306	41,361

3. Fomula * Waktu

Dependent Variable: Viskositas

Fomula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Formula 1	sebelum cycling test	11,667	2,173	7,134	16,200
	setelah cycling test	20,000	2,173	15,467	24,533
Formula 2	sebelum cycling test	18,333	2,173	13,800	22,866
	setelah cycling test	26,667	2,173	22,134	31,200
Formula3	sebelum cycling test	28,333	2,173	23,800	32,866
	setelah cycling test	33,333	2,173	28,800	37,866
Fomula 4	sebelum cycling test	31,667	2,173	27,134	36,200
	setelah cycling test	41,667	2,173	37,134	46,200
Formula 5	sebelum cycling test	53,333	2,173	48,800	57,866
	setelah cycling test	75,000	2,173	70,467	79,533

Post Hoc Tests

Homogeneous Subsets

Viskositas

Tukey HSD[a,b]

Fomula	N	Subset			
		1	2	3	4
Formula 1	6	15,8333			
Formula 2	6		22,5000		
Formula3	6			30,8333	
Fomula 4	6			36,6667	
Formula 5	6				64,1667
Sig.		1,000	1,000	,092	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 14,167.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test
Formula 1

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
Viskositas	Equal variances assumed	,000	1,000	-4,243	4	,013	-10,00000	2,35702	-16,54414	-3,45586
	Equal variances not assumed			-4,243	4,000	,013	-10,00000	2,35702	-16,54414	-3,45586

Formula 2

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
Viskositas	Equal variances assumed	,000	1,000	-3,536	4	,024	-8,33333	2,35702	-14,87748	-1,78919
	Equal variances not assumed			-3,536	4,000	,024	-8,33333	2,35702	-14,87748	-1,78919

Formula 3

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
Viskositas	Equal variances assumed	,000	1,000	-2,121	4	,101	-5,00000	2,35702	-11,54414	1,54414
	Equal variances not assumed			-2,121	4,000	,101	-5,00000	2,35702	-11,54414	1,54414

Formula 4

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
Viskositas	Equal variances assumed	,000	1,000	-4,243	4	,013	-10,00000	2,35702	-16,54414	-3,45586
	Equal variances not assumed			-4,243	4,000	,013	-10,00000	2,35702	-16,54414	-3,45586

Formula 5

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
Viskositas	Equal variances assumed	,308	,609	-4,914	4	,008	-21,66667	4,40959	-33,90964	-9,42369
	Equal variances not assumed			-4,914	3,920	,008	-21,66667	4,40959	-34,00881	-9,32452

Lampiran 12. Penimbangan DPPH dan pembuatan larutan stok

Penimbangan DPPH

Serbuk DPPH untuk uji aktivitas antioksidan ditimbang sesuai hasil perhitungan berikut :

Penimbangan DPPH = BM DPPH × volume larutan × molaritas DPPH

= 394,32 g/mol × 0,100 liter × 0,0004 M

= 0,01578 gram

= 15,78 mg ~ 15,8 mg

Pembuatan larutan DPPH

Serbuk DPPH ditimbang sebanyak 15,8 mg, kemudian dilarutkan dengan methanol p.a dalam labu takar 100 mL.

Pembuatan larutan stok vitamin C

Pembuatan larutan stok vitamin C dilakukan dengan cara ditimbang vitamin C sebanyak 10 mg dimasukkan dalam labu takar 100 mL, kemudian ditambahkan methanol p.a sampai tanda batas, sehingga diperoleh konsentrasi 100 ppm.

Konsentrasi vit C = 10 mg/ 100 mL

= 100 mg/ 1000 mL

= 100 ppm

Larutan vitamin C konsentrasi 100 ppm diencerkan menjadi 5 seri pengenceran konsentrasi, yaitu 50 ppm, 25 ppm, 12,5 ppm, 6,25 ppm, 3,125 ppm.

- **Konsentrasi 50 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

X x 100 ppm = 10 mL x 50

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan vitamin C 100 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 25 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

X x 50 ppm = 10 mL x 25

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan vitamin C 50 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 12,5 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 25\ ppm = 10\ mL \times 12,5$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan vitamin C 25 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 6,25 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 12,5\ ppm = 10\ mL \times 6,25$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan vitamin C 12,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 3,125 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 6,25\ ppm = 10\ mL \times 3,125$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan vitamin C 6,25 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Pembuatan larutan stok ekstrak

Larutan stok ekstrak dibuat konsentrasi 200 ppm, yaitu ditimbang 20 mg kemudian dilarutkan dengan methanol p.a dalam labu ukur 100 mL.

- **Konsentrasi 100 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 200\ ppm = 10\ mL \times 100$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan ekstrak 200 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 50 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 100 ppm = 10 mL x 50

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan ekstrak 100 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 25 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 50 ppm = 10 mL x 25

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan ekstrak 50 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 12,5 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 25 ppm = 10 mL x 12,5

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan ekstrak 25 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 6,25 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 12,5 ppm = 10 mL x 6,25

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan ekstrak 12,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Pembuatan larutan stok *lotion* F1 hari ke-1 dan hari ke-21

Larutan stok F1 dibuat konsentrasi 1000 ppm, yaitu ditimbang 100 mg *lotion* kemudian dilarutkan dengan methanol p.a dalam labu ukur 100 mL.

- **Konsentrasi 500 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 1000 ppm = 10 mL x 500

$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F1 1000 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 250 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 500$ ppm $= 10$ mL $\times 250$

$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F1 500 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 125 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 250$ ppm $= 10$ mL $\times 125$

$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F1 250 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 62,5 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 125$ ppm $= 10$ mL $\times 62,5$

$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F1 125 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 31,25 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 62,5$ ppm $= 10$ mL $\times 31,25$

$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F1 62,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Pembuatan larutan stok *lotion* F2 hari ke-1 dan hari ke-21

Larutan stok F2 dibuat konsentrasi 1000 ppm, yaitu ditimbang 100 mg kemudian dilarutkan dengan methanol p.a dalam labu ukur 100 mL.

- **Konsentrasi 500 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 1000 ppm = 10 mL x 500

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan F2 1000 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 250 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 500 ppm = 10 mL x 250

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan F2 500 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 125 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 250 ppm = 10 mL x 125

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan F3 250 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 62,5 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 125 ppm = 10 mL x 62,5

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan F2 125 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 31,25 ppm**

$V_{(lar.\ stok)}$ x $C_{(kons.\ stok)}$ = $V_{(lar.\ sampel)}$ x $C_{(kons.\ sampel)}$

X x 62,5 ppm = 10 mL x 31,25

$V_{(lar.\ stok)}$ = 5 mL

Dipipet larutan F2 62,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Pembuatan larutan stok *lotion* F3 hari ke-1 dan hari ke-21

Larutan stok F3 dibuat konsentrasi 1000 ppm, yaitu ditimbang 100 mg kemudian dilarutkan dengan methanol p.a dalam labu ukur 100 mL.

- **Konsentrasi 500 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 1000\ ppm = 10\ mL \times 500$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F3 1000 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 250 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 500\ ppm = 10\ mL \times 250$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F3 500 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 125 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 250\ ppm = 10\ mL \times 125$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F3 250 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 62,5 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 125\ ppm = 10\ mL \times 62,5$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F3 125 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 31,25 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 62,5\ ppm = 10\ mL \times 31,25$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F3 62,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Pembuatan larutan stok *lotion* F4 hari ke-1 dan hari ke-21

Larutan stok F4 dibuat konsentrasi 1000 ppm, yaitu ditimbang 100 mg kemudian dilarutkan dengan methanol p.a dalam labu ukur 100 mL.

- **Konsentrasi 500 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 1000\ ppm = 10\ mL \times 500$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F4 1000 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 250 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 500\ ppm = 10\ mL \times 250$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F4 500 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 125 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 250\ ppm = 10\ mL \times 125$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F4 250 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 62,5 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 125\ ppm = 10\ mL \times 62,5$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F4 125 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 31,25 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 62{,}5\ ppm = 10\ mL \times 31{,}25$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F4 62,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Pembuatan larutan stok *lotion* F5 hari ke-1 dan hari ke-21

Larutan stok F5 dibuat konsentrasi 1000 ppm, yaitu ditimbang 100 mg kemudian dilarutkan dengan methanol p.a dalam labu ukur 100 mL.

- **Konsentrasi 500 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 1000\ ppm = 10\ mL \times 500$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F5 1000 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 250 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 500\ ppm = 10\ mL \times 250$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F5 500 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 125 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 250\ ppm = 10\ mL \times 125$

$V_{(lar.\ stok)} = 5\ mL$

Dipipet larutan F5 250 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 62,5 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 125\ ppm = 10\ mL \times 62{,}5$

$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F5 125 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

- **Konsentrasi 31,25 ppm**

$V_{(lar.\ stok)} \times C_{(kons.\ stok)} = V_{(lar.\ sampel)} \times C_{(kons.\ sampel)}$

$X \times 62{,}5$ ppm $= 10$ mL $\times 31{,}25$

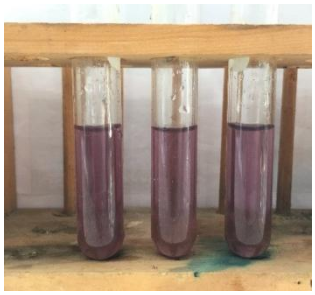
$V_{(lar.\ stok)} = 5$ mL

Dipipet larutan F5 62,5 ppm sebanyak 5 mL dimasukkan dalam labu takar 10 mL kemudian ditambahkan methanol p.a sampai tanda batas.

Lampiran 13. Penentuan *operating time*

Menit ke	Absorbansi						
	Ekstrak	**Vit C**	**F1**	**F2**	**F3**	**F4**	**F5**
26	0,611	0,196	0,6541	0,6541	0,6541	0,6541	0,6541
27	0,611	0,196	0,6549	0,6549	0,6549	0,6549	0,6549
28	0,611	0,197	0,6556	0,6556	0,6556	0,6556	0,6556
29	0,611	0,197	0,6562	0,6562	0,6562	0,6562	0,6562
30	0,611	0,196	0,6563	0,6563	0,6563	0,6563	0,6563
31	0,611	0,196	0,6569	0,6569	0,6569	0,6569	0,6569
32	0,611	0,196	0,6571	0,6571	0,6571	0,6571	0,6571
33	0,611	0,194	0,6584	0,6584	0,6584	0,6584	0,6584
34	0,611	0,194	0,6583	0,6583	0,6583	0,6583	0,6583
35	0,611	**0,192**	0,6583	0,6583	0,6583	0,6583	0,6583
36	0,611	**0,192**	0,6594	0,6594	0,6594	0,6594	0,6594
37	0,611	**0,192**	0,6599	0,6599	0,6599	0,6599	0,6599
38	**0,610**	**0,192**	0,6607	0,6607	0,6607	0,6607	0,6607
39	**0,610**	**0,192**	**0,6614**	**0,6614**	**0,6614**	**0,6614**	**0,6614**
40	**0,610**	**0,192**	**0,6614**	**0,6614**	**0,6614**	**0,6614**	**0,6614**
41	**0,610**	**0,192**	0,6618	0,6618	0,6618	0,6618	0,6618
42	**0,610**	0,193	0,6627	0,6627	0,6627	0,6627	0,6627
43	**0,610**	0,192	0,6639	0,6639	0,6639	0,6639	0,6639
44	**0,610**	0,192	0,6639	0,6639	0,6639	0,6639	0,6639
45	**0,610**	0,191	0,6642	0,6642	0,6642	0,6642	0,6642
46	**0,610**	0,191	0,6649	0,6649	0,6649	0,6649	0,6649
47	**0,610**	0,190	0,6664	0,6664	0,6664	0,6664	0,6664
48	**0,610**	0,189	0,6669	0,6669	0,6669	0,6669	0,6669
49	**0,610**	0,191	0,6670	0,6670	0,6670	0,6670	0,6670
50	**0,610**	0,189	0,6672	0,6672	0,6672	0,6672	0,6672
51	0,609	0,187	0,6685	0,6685	0,6685	0,6685	0,6685
52	0,610	0,187	0,6694	0,6694	0,6694	0,6694	0,6694
53	0,610	0,187	0,6698	0,6698	0,6698	0,6698	0,6698
54	0,609	0,185	0,6706	0,6706	0,6706	0,6706	0,6706
55	0,609	0,185	0,6714	0,6714	0,6714	0,6714	0,6714
56	0,609	0,184	0,6721	0,6721	0,6721	0,6721	0,6721
57	0,609	0,183	0,6721	0,6721	0,6721	0,6721	0,6721
58	0,609	0,182	0,6727	0,6727	0,6727	0,6727	0,6727
59	0,609	0,182	0,6734	0,6734	0,6734	0,6734	0,6734
60	0,609	0,182	0,6739	0,6739	0,6739	0,6739	0,6739

Lampiran 14. Hasil uji pendahuluan aktivitas antioksidan



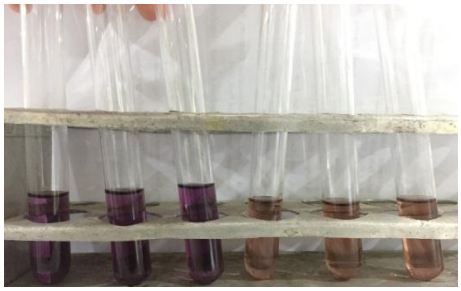
A

B

C

D

E



F

G

H

Keterangan :

A = Kontrol negatif DPPH

B = Kontrol positif Vitamin C

C = Ekstrak etanol buah tomat

D = Formula 1 (Kontrol negatif basis *lotion*)

E = Formula 2 (Kontrol positif *lotion* vitamin C)

F = Formula 3 (15% Ekstrak etanol buah tomat)

G = Formula 4(20% Ekstrak etanol buah tomat)

H = Formula 5 (25% Ekstrak etanol buah tomat)

Lampiran 15. Perhitungan aktivitas antioksidan dan IC_{50}

Perhitungan aktivitas antioksidan dan IC_{50} vitamin C

Perhitungan persentase peredaman menggunakan rumus :

$$\% \text{ inhibisi} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  50 ppm = $\frac{0,9640-0,2138}{0,9640}$ x 100% = 77,8216%

  25 ppm = $\frac{0,9640-0,3925}{0,9640}$ x 100% =59,2842%

  12,5 ppm = $\frac{0,9640-0,4479}{0,9640}$ x 100% = 53,5373%

  6,25 ppm = $\frac{0,9640-0,5533}{0,9640}$ x 100% = 42,6037%

  3,125 ppm = $\frac{0,9640-0,5647}{0,9640}$ x 100% = 41,4212%

- Replikasi 2

  50 ppm = $\frac{0,9640-0,2410}{0,9640}$ x 100% = 75%

  25 ppm = $\frac{0,9640-0,3517}{0,9640}$ x 100% = 63,5166%

  12,5 ppm = $\frac{0,9640-0,4750}{0,9640}$ x 100% = 50,7261%

  6,25 ppm = $\frac{0,9640-0,5242}{0,9640}$ x 100% = 45,6224%

  3,125 ppm = $\frac{0,9640-0,5852}{0,9640}$ x 100% = 39,2947%

- Replikasi 3

  50 ppm = $\frac{0,9640-0,3140}{0,9640}$ x 100% = 667,4274%

  25 ppm = $\frac{0,9640-0,3832}{0,9640}$ x 100% = 60,2490%

  12,5 ppm = $\frac{0,9640-0,4984}{0,9640}$ x 100% = 48,2988%

  6,25 ppm = $\frac{0,9640-0,5447}{0,9640}$ x 100% = 43,4959%

  3,125 ppm = $\frac{0,9640-0,5757}{0,9640}$ x 100% = 40,2801%

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
50	0,2138 0,2410 0,3140	0,2562	0,9640	73,4163	a = 40,4347 b = 0,6953 r = 0,9845	13,7571
25	0,3925 0,3517 0,3832	0,3758		61,0166		
12,5	0,4479 0,4750 0,4984	0,4737		50,8541		
6,25	0,5533 0,5242 0,5447	0,5407		43,9073		
3,125	0,5647 0,5852 0,5757	0,572		40,332		

Perhitungan aktivitas antioksidan dan IC_{50} ekstrak

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  100 ppm = $\frac{0,9521-0,2598}{0,9521}$ x 100% = 72,71%

  50 ppm = $\frac{0,9521-0,4651}{0,9521}$ x 100% = 51,15%

  25 ppm = $\frac{0,9521-0,5965}{0,9521}$ x 100% = 37,34%

  12,5 ppm = $\frac{0,9521-0,6635}{0,9521}$ x 100% = 30,31%

  6,25 ppm = $\frac{0,9521-0,7211}{0,9521}$ x 100% = 24,26%

- Replikasi 2

  100 ppm = $\frac{0,9521-0,2522}{0,9521}$ x 100% = 73,5111%

  50 ppm = $\frac{0,9521-0,4116}{0,9521}$ x 100% = 56,7692%

  25 ppm = $\frac{0,9521-0,5334}{0,9521}$ x 100% = 43,9765%

  12,5 ppm = $\frac{0,9521-0,6705}{0,9521}$ x 100% = 29,5767%

  6,25 ppm = $\frac{0,9521-0,7293}{0,9521}$ x 100% = 23,4010%

- Replikasi 3

  100 ppm = $\frac{0,9521-0,2425}{0,9521}$ x 100% = 74,5300%

  50 ppm = $\frac{0,9521-0,6468}{0,9521}$ x 100% = 32,0660%

  25 ppm = $\frac{0,9521-0,6502}{0,9521}$ x 100% = 31,7089%

  12,5 ppm = $\frac{0,9521-0,7495}{0,9521}$ x 100% = 21,2793%

  6,25 ppm = $\frac{0,9521-0,7919}{0,9521}$ x 100% = 16,8260%

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
100	0,2598 0,2522 0,2425	0,2515	0,9521	73,5847	a = 20,5949 b = 0,5342 r = 0,9939	55,0451
50	0,4651 0,4116 0,6468	0,5078		46,6618		
25	0,5965 0,5334 0,6502	0,5934		37,6781		
12,5	0,6635 0,6705 0,7495	0,6944		27,0560		
6,25	0,7211 0,7293 0,7919	0,7474		21,4964		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 1 (kontrol negatif) hari ke-1

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9721-0,7682}{0,9721}$ x 100% = 20,9752%

  250 ppm = $\frac{0,9721-0,8157}{0,9721}$ x 100% = 16,0889%

  125 ppm = $\frac{0,9721-0,8305}{0,9721}$ x 100% = 14,5664%

  62,5 ppm = $\frac{0,9721-0,8865}{0,9721}$ x 100% = 8,8057%

  31,25 ppm = $\frac{0,9721-0,9185}{0,9721}$ x 100% = 5,5138%

- Replikasi 2

  500 ppm = $\frac{0,9721-0,7955}{0,9721}$ x 100% = 18,1669%

  250 ppm = $\frac{0,9721-0,8107}{0,9721}$ x 100% = 16,6032 %

  125 ppm = $\frac{0,9721-0,8622}{0,9721}$ x 100% = 11,3054%

  62,5 ppm = $\frac{0,9721-0,8872}{0,9721}$ x 100% = 8,7337 %

  31,25 ppm = $\frac{0,9721-0,9071}{0,9721}$ x 100% = 6,6866%

- Replikasi 3

  500 ppm = $\frac{0,9721-0,7615}{0,9721}$ x 100% = 21,6644 %

  250 ppm = $\frac{0,9721-0,8175}{0,9721}$ x 100% = 15,9037 %

  125 ppm = $\frac{0,9721-0,8580}{0,9721}$ x 100% = 11,7375 %

  62,5 ppm = $\frac{0,9721-0,8964}{0,9721}$ x 100% = 7,7873 %

  31,25 ppm = $\frac{0,9721-0,9212}{0,9721}$ x 100% = 5,2361 %

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,7682 0,7955 0,7615	0,775	0,9721	20,2687	a = 7,0462 b = 0,0289 r = 0,9488	1486,2907
250	0,8157 0,8107 0,8175	0,8146		16,1986		
125	0,8305 0,8622 0,8580	0,8502		12,5364		
62,5	0,8865 0,8872 0,8964	0,8900		8,4422		
31,25	0,9185 0,9071 0,9212	0,9156		5,8122		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 2 (kontrol positif) hari ke-1

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9721-0,2112}{0,9721}$ x 100% = 78,2739 %

  250 ppm = $\frac{0,9721-0,3156}{0,9721}$ x 100% = 64,7442 %

  125 ppm = $\frac{0,9721-0,3678}{0,9721}$ x 100% = 62,1644 %

  62,5 ppm = $\frac{0,9721-0,4781}{0,9721}$ x 100% = 50,8179 %

  31,25 ppm = $\frac{0,9721-0,5436}{0,9721}$ x 100% = 41,2899 %

- Replikasi 2

  500 ppm = $\frac{0,9721-0,2291}{0,9721}$ x 100% = 76,4325 %

  250 ppm = $\frac{0,9721-03575,}{0,9721}$ x 100% = 63,2240 %

  125 ppm = $\frac{0,9721-0,5411}{0,9721}$ x 100% = 44,3370 %

  62,5 ppm = $\frac{0,9721-0,5801}{0,9721}$ x 100% = 40,3251 %

  31,25 ppm = $\frac{0,9721-0,6567}{0,9721}$ x 100% = 32,4452 %

- Replikasi 3

  500 ppm = $\frac{0,9721-0,2384}{0,9721}$ x 100% = 75,4758 %

  250 ppm = $\frac{0,9721-0,4113}{0,9721}$ x 100% = 57,6895 %

  125 ppm = $\frac{0,9721-0,5200}{0,9721}$ x 100% = 46,5076%

  62,5 ppm = $\frac{0,9721-0,6613}{0,9721}$ x 100% = 31,9720 %

  31,25 ppm = $\frac{0,9721-0,7215}{0,9721}$ x 100% = 25,7792 %

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,2112 0,2291 0,2384	0,2262	0,9721	76,7274	a = 37,7921 b = 0,0821 r = 0,9792	148,6544
250	0,3156 0,3575 0,4113	0,3617		61,8859		
125	0,3678 0,5411 0,5200	0,4763		51,003		
62,5	0,4781 0,5801 0,6613	0,5732		41,0383		
31,25	0,5436 0,6567 0,7215	0,6406		37,8623		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 3 hari ke-1

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9721-0,5031}{0,9721}$ x 100% = 48,2461 %

  250 ppm = $\frac{0,9721-0,7125}{0,9721}$ x 100% = 26,7051 %

  125 ppm = $\frac{0,9721-0,8007}{0,9721}$ x 100% = 17,6320%

  62,5 ppm = $\frac{0,9721-0,8844}{0,9721}$ x 100% = 9,0271%

  31,25 ppm = $\frac{0,9721-0,9022}{0,9721}$ x 100% = 7,1906%

- Replikasi 2

  500 ppm = $\frac{0,9721-0,5440}{0,9721}$ x 100% = 44,0387 %

  250 ppm = $\frac{0,9721-0,6999}{0,9721}$ x 100% = 28,0012 %

  125 ppm = $\frac{0,9721-0,8082}{0,9721}$ x 100% = 16,8604 %

  62,5 ppm = $\frac{0,9721-0,8779}{0,9721}$ x 100% = 9,6904 %

  31,25 ppm = $\frac{0,9721-0,9037}{0,9721}$ x 100% = 7,0363 %

- Replikasi 3

  500 ppm = $\frac{0,9721-0,5201}{0,9721}$ x 100% = 46,4972 %

  250 ppm = $\frac{0,9721-0,7113}{0,9721}$ x 100% = 26,8285 %

  125 ppm = $\frac{0,9721-0,8101}{0,9721}$ x 100% = 16,6650 %

  62,5 ppm = $\frac{0,9721-08681,}{0,9721}$ x 100% = 10,6985 %

  31,25 ppm = $\frac{0,9721-0,9023}{0,9721}$ x 100% = 7,1803 %

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,5031 0,5440 0,5201	0,5224	0,9721	46,2607	a = 5,3828 b = 0,0831 r = 0,9978	536,9097
250	0,7125 0,6994 0,7112	0,7077		27,1783		
125	0,8007 0,8082 0,8101	0,8063		17,0525		
62,5	0,8844 0,8779 0,8681	0,8768		9,8035		
31,25	0,9022 0,9037 0,9023	0,9073		7,1357		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 4 hari ke-1

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9721-0,4441}{0,9721}$ x 100% = 54,3154%

  250 ppm = $\frac{0,9721-0,5395}{0,9721}$ x 100% = 44,5106%

  125 ppm = $\frac{0,9721-0,6709}{0,9721}$ x 100% = 30,9845%

  62,5 ppm = $\frac{0,9721-0,7455}{0,9721}$ x 100% = 23,3104 %

  31,25 ppm = $\frac{0,9721-0,7633}{0,9721}$ x 100% = 21,4793 %

- Replikasi 2

  500 ppm = $\frac{0,9721-0,4178}{0,9721}$ x 100% = 57,0209 %

  250 ppm = $\frac{0,9721-0,5395}{0,9721}$ x 100% = 44,5016%

  125 ppm = $\frac{0,9721-0,6645}{0,9721}$ x 100% = 31,6429%

  62,5 ppm = $\frac{0,9721-0,7389}{0,9721}$ x 100% = 23,9893 %

  31,25 ppm = $\frac{0,9721-0,7522}{0,9721}$ x 100% = 22,621 %

- Replikasi 3

  500 ppm = $\frac{0,9721-0,4215}{0,9721}$ x 100% = 56,6403%

  250 ppm = $\frac{0,9721-0,5413}{0,9721}$ x 100% = 44,3164%

  125 ppm = $\frac{0,9721-0,6664}{0,9721}$ x 100% = 31,4474 %

  62,5 ppm = $\frac{0,9721-0,7257}{0,9721}$ x 100% = 25,3472%

  31,25 ppm = $\frac{0,9721-0,7672}{0,9721}$ x 100% = 21,0781 %

Konsentrasi	Absorbansi sampel	Rata-rata absorbansi	Absorbansi blanko	% inhibisi	Regresi linear	IC_{50} (ppm)
500	0,4441 0,4178 0,4215	0,4278	0,9721	55,9922	a = 21,1695 b = 0,0742 r = 0,9794	388,5512
250	0,5395 0,5395 0,5413	0,5401		44,4399		
125	0,6709 0,6645 0,6664	0,6673		31,3582		
62,5	0,7455 0,7389 0,7257	0,7367		24,2156		
31,25	0,7633 0,7522 0,7672	0,7609		21,7262		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 5 hari ke-1

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9721-0,3632}{0,9721}$ x 100% = 62,6376 %

  250 ppm = $\frac{0,9721-0,4539}{0,9721}$ x 100% = 53,3073 %

  125 ppm = $\frac{0,9721-0,5142}{0,9721}$ x 100% = 47,0322 %

  62,5 ppm = $\frac{0,9721-0,5367}{0,9721}$ x 100% = 44,7896 %

  31,25 ppm = $\frac{0,9721-0,5684}{0,9721}$ x 100% = 41,5286 %

- Replikasi 2

  500 ppm = $\frac{0,9721-0,5739}{0,9721}$ x 100% = 61,5369%

  250 ppm = $\frac{0,9721-0,4460}{0,9721}$ x 100% = 54,1200 %

  125 ppm = $\frac{0,9721-0,5055}{0,9721}$ x 100% = 47,9992%

  62,5 ppm = $\frac{0,9721-0,5459}{0,9721}$ x 100% = 43,8432%

  31,25 ppm = $\frac{0,9721-0,5705}{0,9721}$ x 100% = 41,3126%

- Replikasi 3

  500 ppm = $\frac{0,9721-0,3813}{0,9721}$ x 100% = 60,7756 %

  250 ppm = $\frac{0,9721-0,4303}{0,9721}$ x 100% = 55,7350 %

  125 ppm = $\frac{0,9721-0,5034}{0,9721}$ x 100% = 48,2152%

  62,5 ppm = $\frac{0,9721-0,5324}{0,9721}$ x 100% = 45,2320 %

  31,25 ppm = $\frac{0,9721-0,5499}{0,9721}$ x 100% = 43,4317%

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,3632 0,3739 0,3813	0,3728	0,9721	61,6500	a = 42,1525 b = 0,0410 r = 0,9860	191,4024
250	0,4539 0,4460 0,4303	0,4434		54,3874		
125	0,5142 0,5055 0,5034	0,5077		47,7489		
62,5	0,5367 0,5459 0,5324	0,5383		44,62616		
31,25	0,5684 0,5705 0,5499	0,5625		42,0910		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 1 (kontrol negatif) hari ke-21

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9578-0,8256}{0,9578}$ x 100% = 13,8024%

  250 ppm = $\frac{0,9578-0,8636}{0,9578}$ x 100% = 9,8350%

  125 ppm = $\frac{0,9578-0,8872}{0,9578}$ x 100% = 7,3710%

  62,5 ppm = $\frac{0,9578-0,9078}{0,9578}$ x 100% = 5,2202%

  31,25 ppm = $\frac{0,9578-0,9254}{0,9578}$ x 100% = 3,8275%

- Replikasi 2

  500 ppm = $\frac{0,9578-0,8162}{0,9578}$ x 100% = 14,7838 %

  250 ppm = $\frac{0,9578-0,8623}{0,9578}$ x 100% = 9,970%

  125 ppm = $\frac{0,9578-0,8717}{0,9578}$ x 100% = 8,9893%

  62,5 ppm = $\frac{0,9578-0,8876}{0,9578}$ x 100% = 7,3292%

  31,25 ppm = $\frac{0,9578-0,9196}{0,9578}$ x 100% = 3,9883%

- Replikasi 3

  500 ppm = $\frac{0,9578-0,8096}{0,9578}$ x 100% = 19,154729%

  250 ppm = $\frac{0,9578-0,8460}{0,9578}$ x 100% = 11,6725%

  125 ppm = $\frac{0,9578-0,8675}{0,9578}$ x 100% = 9,4278 %

  62,5 ppm = $\frac{0,9578-0,8877}{0,9578}$ x 100% = 7,3188 %

  31,25 ppm = $\frac{0,9578-0,8997}{0,9578}$ x 100% = 6,0659 %

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,8256 0,8162 0,8096	0,8171	0,9578	14,6864	a = 5,1706 b = 0,0198 r = 0,9780	2264,1111
250	0,8636 0,8623 0,8460	0,8573		10,4925		
125	0,8872 0,8717 0,8675	0,8755		8,5960		
62,5	0,9078 0,8876 0,8877	0,8944		6,6227		
31,25	0,9254 0,9196 0,8997	0,9149		4,6272		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 2 (kontrol positif) hari ke-21

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9578-0,3671}{0,9578}$ x 100% = 61,6726%

  250 ppm = $\frac{0,9578-0,4335}{0,9578}$ x 100% = 54,7400%

  125 ppm = $\frac{0,9578-0,5417}{0,9578}$ x 100% = 43,4433%

  62,5 ppm = $\frac{0,9578-0,6915}{0,9578}$ x 100% = 57,5033%

  31,25 ppm = $\frac{0,9578-0,7591}{0,9578}$ x 100% = 20,7606%

- Replikasi 2

  500 ppm = $\frac{0,9578-0,2907}{0,9578}$ x 100% = 69,6492%

  250 ppm = $\frac{0,9578-0,3572}{0,9578}$ x 100% = 62,7455%

  125 ppm = $\frac{0,9578-0,4065}{0,9578}$ x 100% = 57,5597%

  62,5 ppm = $\frac{0,9578-0,4708}{0,9578}$ x 100% = 50,8457%

  31,25 ppm = $\frac{0,9578-0,5640}{0,9578}$ x 100% = 41,1151%

- Replikasi 3

  500 ppm = $\frac{0,9578-0,2971}{0,9578}$ x 100% = 66,9173 %

  250 ppm = $\frac{0,9578-0,4125}{0,9578}$ x 100% = 58,1403 %

  125 ppm = $\frac{0,9578-0,5278}{0,9578}$ x 100% = 48,6497 %

  62,5 ppm = $\frac{0,9578-0,5789}{0,9578}$ x 100% = 43,5378 %

  31,25 ppm = $\frac{0,9578-0,6329}{0,9578}$ x 100% = 36,5019 %

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,3671 0,2907 0,2971	0,3182	0,9578	66,7676	a = 37,5323 b = 0,0638 r = 0,9585	195,4357
250	0,4335 0,3572 0,4125	0,4011		58,1403		
125	0,5417 0,4065 0,5273	0,4918		52,7598		
62,5	0,6915 0,4708 0,5789	0,804		39,4028		
31,25	0,3591 0,5640 0,6329	0,652		36,5019		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 3 hari ke-21

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9578-0,5644}{0,9578}$ x 100% = 41,0733 %

  250 ppm = $\frac{0,9578-0,7236}{0,9578}$ x 100% = 24,4519 %

  125 ppm = $\frac{0,9578-0,8239}{0,9578}$ x 100% = 13,9710 %

  62,5 ppm = $\frac{0,9578-0,8939}{0,9578}$ x 100% = 6,6715 %

  31,25 ppm = $\frac{0,9578-0,9246}{0,9578}$ x 100% = 3,4663 %

- Replikasi 2

  500 ppm = $\frac{0,9578-0,5715}{0,9578}$ x 100% = 40,3320%

  250 ppm = $\frac{0,9578-0,7289}{0,9578}$ x 100% = 23,8985%

  125 ppm = $\frac{0,9578-0,8421}{0,9578}$ x 100% = 12,0798%

  62,5 ppm = $\frac{0,9578-0,8958}{0,9578}$ x 100% = 6,4732%

  31,25 ppm = $\frac{0,9578-0,9181}{0,9578}$ x 100% = 4,1450%

- Replikasi 3

  500 ppm = $\frac{0,9578-0,5696}{0,9578}$ x 100% = 40,5304%

  250 ppm = $\frac{0,9578-0,7196}{0,9578}$ x 100% = 24,8695%

  125 ppm = $\frac{0,9578-0,8428}{0,9578}$ x 100% = 12,0063%

  62,5 ppm = $\frac{0,9578-0,8616}{0,9578}$ x 100% = 10,0439%

  31,25 ppm = $\frac{0,9578-0,9156}{0,9578}$ x 100% = 4,4060%

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,5644 0,5715 0,5696	0,5685	0,9578	40,6452	a = 2,8507 b = 0,0776 r = 0,9959	607,5941
250	0,7236 0, 7289 0, 7196	0,7240		24,4066		
125	0, 8239 0,8421 0,8428	0,8363		12,6858		
62,5	0,8939 0,8958 0,8616	0,8837		7,7295		
31,25	0,9246 0,9181 0,9156	0,9194		4,0058		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 4 hari ke-21

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9578-0,4824}{0,9578}$ x 100% = 49,6346%

  250 ppm = $\frac{0,9578-0,5433}{0,9578}$ x 100% = 43,2762%

  125 ppm = $\frac{0,9578-0,6826}{0,95778378}$ x 100% = 28,7325%

  62,5 ppm = $\frac{0,9578-0,7837}{0,9578}$ x 100% = 18,1770%

  31,25 ppm = $\frac{0,9578-0,8248}{0,9578}$ x 100% = 13,8859%

- Replikasi 2

  500 ppm = $\frac{0,9578-0,4826}{0,9578}$ x 100% = 49,6136%

  250 ppm = $\frac{0,9578-0,5462}{0,9578}$ x 100% = 42,9734%

  125 ppm = $\frac{0,9578-0,6712}{0,9578}$ x 100% = 29,9227%

  62,5 ppm = $\frac{0,9578-0,8015}{0,9578}$ x 100% = 16,3186%

  31,25 ppm = $\frac{0,9578-0,8282}{0,9578}$ x 100% = 13,5310%

- Replikasi 3

  500 ppm = $\frac{0,9578-0,4501}{0,9578}$ x 100% = 53,0069%

  250 ppm = $\frac{0,9578-0,5350}{0,9578}$ x 100% = 44,1428%

  125 ppm = $\frac{0,9578-0,6557}{0,9578}$ x 100% = 31,5410%

  62,5 ppm = $\frac{0,9578-0,7701}{0,9578}$ x 100% = 19,5969%

  31,25 ppm = $\frac{0,9578-0,8202}{0,9578}$ x 100% = 14,3662%

Konsentrasi	**Absorbansi sampel**	**Rata-rata absorbansi**	**Absorbansi blanko**	**% inhibisi**	**Regresi linear**	**IC_{50} (ppm)**
500	0,4824 0,4826 0,4501	0,4717	0,9578	50,7517	a = 16,1936 b = 0,0777 r = 0,9340	435,0889
250	0,5433 0,5462 0,5350	0,5415		43,4641		
125	0,6826 0,6712 0,6557	0,6698		30,0654		
62,5	0,7837 0,8015 0,7701	0,7851		18,0308		
31,25	0,8248 0,8282 0,8202	0,8244		13,9277		

Perhitungan aktivitas antioksidan dan IC_{50} lotion formula 5 hari ke-21

Perhitungan persentase peredaman menggunakan rumus :

$$\text{Peredaman (\%)} = \frac{\text{absorbansi blanko} - \text{absorbansi sampel}}{\text{absorbansi blanko}} \times 100\%$$

- Replikasi 1

  500 ppm = $\frac{0,9578-0,3814}{0,9578}$ x 100% = 60,1796%

  250 ppm = $\frac{0,9578-0,4575}{0,9578}$ x 100% = 52,2342%

  125 ppm = $\frac{0,9578-0,5452}{0,9578}$ x 100% = 43,0779%

  62,5 ppm = $\frac{0,9578-0,5967}{0,9578}$ x 100% = 37,6383%

  31,25 ppm = $\frac{0,9578-0,6075}{0,9578}$ x 100% = 36,5733%

- Replikasi 2

  500 ppm = $\frac{0,9578-0,3898}{0,9578}$ x 100% = 59,3026%

  250 ppm = $\frac{0,9578-0,4460}{0,9578}$ x 100% = 46,5650%

  125 ppm = $\frac{0,9578-0,5304}{0,9578}$ x 100% = 44,6231%

  62,5 ppm = $\frac{0,9578-0,5979}{0,9578}$ x 100% = 37,5757%

  31,25 ppm = $\frac{0,9578-0,6233}{0,9578}$ x 100% = 34,9238%

- Replikasi 3

  500 ppm = $\frac{0,9578-0,3788}{0,9578}$ x 100% = 60,4510%

  250 ppm = $\frac{0,9578-0,4595}{0,9578}$ x 100% = 52,0255%

  125 ppm = $\frac{0,9578-0,5571}{0,9578}$ x 100% = 41,8355%

  62,5 ppm = $\frac{0,9578-0,5935}{0,9578}$ x 100% = 38,0351%

  31,25 ppm = $\frac{0,9578-0,6161}{0,9578}$ x 100% = 35,6755%

Konsentrasi	Absorbansi sampel	Rata-rata absorbansi	Absorbansi blanko	% inhibisi	Regresi linear	IC_{50} (ppm)
500	0,3814 0,3898 0,3788	0,3833	0,9578	59,9778	a = 354241 b = 0,05140 r = 0,9878	283,5778
250	0,4575 0,4460 0,4595	0,4544		50,2749		
125	0,5452 0,5304 0,5571	0,5442		43,1789		
62,5	0,5967 0,5979 0,5935	0,5960		37,7497		
31,25	0,6075 0,6233 0,6161	0,6156		35,7242		

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IC50	18	175,64	613,42	407,1219	146,16726
Valid N (listwise)	18				

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		IC50
N		18
Normal Parameters[a,b]	Mean	407,1219
	Std. Deviation	146,16726
Most Extreme Differences	Absolute	,101
	Positive	,093
	Negative	-,101
Kolmogorov-Smirnov Z		,430
Asymp. Sig. (2-tailed)		,993

a. Test distribution is Normal.
b. Calculated from data.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Formula	1	F3	6
	2	F4	6
	3	F5	6
Waktu	1	Hari ke-1	9
	2	Hari ke-21	9

Descriptive Statistics

Dependent Variable: IC50

Formula	Waktu	Mean	Std. Deviation	N
F3	Hari ke-1	536,6207	22,28123	3
	Hari ke-21	607,3703	8,93759	3
	Total	571,9955	41,61950	6
F4	Hari ke-1	388,7553	12,71907	3
	Hari ke-21	435,2183	20,29044	3
	Total	411,9868	29,61476	6
F5	Hari ke-1	190,6724	13,07618	3
	Hari ke-21	284,0945	17,52760	3
	Total	237,3834	53,00555	6
Total	Hari ke-1	372,0161	151,01313	9
	Hari ke-21	442,2277	140,79220	9
	Total	407,1219	146,16726	18

Levene's Test of Equality of Error Variances[a]
Dependent Variable: IC50

F	df1	df2	Sig.
,730	5	12	,614

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Formula + Waktu + Formula * Waktu

Estimated Marginal Means

1. Formula

Dependent Variable: IC50

Formula	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
F3	571,996	6,725	557,343	586,648
F4	411,987	6,725	397,335	426,639
F5	237,383	6,725	222,731	252,035

2. Waktu

Dependent Variable: IC50

Waktu	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Hari ke-1	372,016	5,491	360,053	383,979
Hari ke-21	442,228	5,491	430,264	454,191

3. Formula * Waktu

Dependent Variable: IC50

Formula	Waktu	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
F3	Hari ke-1	536,621	9,510	515,900	557,342
	Hari ke-21	607,370	9,510	586,649	628,091
F4	Hari ke-1	388,755	9,510	368,034	409,476
	Hari ke-21	435,218	9,510	414,497	455,939
F5	Hari ke-1	190,672	9,510	169,951	211,393
	Hari ke-21	284,094	9,510	263,373	304,816

Post Hoc Tests

Homogeneous Subsets

IC50

Tukey HSD[a,b]

Formula	N	Subset		
		1	2	3
F5	6	237,3834		
F4	6		411,9868	
F3	6			571,9955
Sig.		1,000	1,000	1,000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 271,336.
a. Uses Harmonic Mean Sample Size = 6,000.
b. Alpha = ,05.

T-Test
Formula 3

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
IC50	Equal variances assumed	1,184	,338	-5,104	4	,007	-70,74953	13,86042	-109,23222	-32,26684
	Equal variances not assumed			-5,104	2,627	,020	-70,74953	13,86042	-118,61886	-22,88021

Formula 4

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
IC50	Equal variances assumed	1,564	,279	-3,361	4	,028	-46,46300	13,82602	-84,85019	-8,07581
	Equal variances not assumed			-3,361	3,362	,037	-46,46300	13,82602	-87,90385	-5,02215

Formula 5

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
IC50	Equal variances assumed	,600	,482	-7,400	4	,002	-93,42210	12,62541	-128,47587	-58,36833
	Equal variances not assumed			-7,400	3,700	,002	-93,42210	12,62541	-129,62682	-57,21738