

LAMPIRAN

Lampiran 1 Hasil determinasi



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Nomor : 269/DET/UPT-LAB/24.09.2021
Hal : Hasil determinasi tumbuhan
Lamp. : *

Nama Pemesan : Septian Windoyo
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Universitas Setia Budi, Surakarta
Nama sampel : *Muntingia calabura* L./ Kersen

HASIL DETERMINASI TUMBUHAN

Klasifikasi
Kingdom : Plantae
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Magnoliopsida
Ordo : Malvales
Famili : Tiliaceae
Genus : *Muntingia*
Species : *Muntingia calabura* L.

Hasil Determinasi menurut Steenis, C.G.G.J.V, Bloembergen, H, Eyma, P.J. 1992 :
1b – 2b – 3b – 4b – 6b – 7b – 9b – 10b – 11b – 12b – 13b – 15a. Golongan 8 – 109b – 119b –
120b – 128b – 129b – 135b – 136b – 139b – 140b – 142b – 143b – 146b – 154b – 155b –
156b – 162b – 163b – 167b – 169b – 171b – 177b – 179a – 180b – 182b – 183b – 184b –
185b – 186b. Familia 74. Tiliaceae. 1a. 1. *Muntingia*. *Muntingia calabura* L.

Deskripsi :
Habitus : Pohon kecil, menahun, tinggi 2 – 10 m.
Akar : Sistem akar tunggang

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Batang : Batang berkayu, coklat, bulat, percabangan simpodial, tegak, ranting diselubungi
rapat oleh rambut biasa yang halus dan oleh rambut kelenjar.
Daun : Daun tunggal, berseling, helaian daun tidak sama sisi, bulat telur sampai lanset,
panjang 6,3 – 9,1 cm, lebar 2,5 – 3,3 cm, ujung runcing, tepi bergerigi,
permukaan bawah berambut rapat, tangkai pendek, berambut seperti wol rapat,
tulang daun menyirip, hijau. Dari tiap pasang daun pelindung 1 rudimenter dan
1 bentuk benang – bentuk paku, panjang lk 0,5 cm.
Bunga : Bunga 1-3 menjadi satu di ketiak daun, berbilangan 5, berkelamin 2. Kelopak
berbagi dalam, taju meruncing menjadi bentuk benang, berambut halus. Daun
mahkota putih, tepi rata, bulat telur terbalik, gundul, panjang lk 6 mm. Tonjolan
dasar bunga bentuk cawan. Benangsari banyak, terutama pada tonjolan dasar
bunga. Bakal buah bertangkai pendek, gundul, beruang 5 – 6. Kepala sari
hampir duduk, berlekuk 5 – 6. Tonjolan dasar bunga bentuk cawan. Benangsari
banyak terutama pada tonjolan dasar bunga. Bakal buah bertangkai pendek,
gundul, beruang 5 – 6. Kepala putik hampir duduk, berlekuk 5 – 6.
Buah : Buah buni dimahkotai dengan tangkai putik yang tetap, waktu muda hijau,
setelah masak merah, panjang 1 cm.

Kepala UPT-LAB
Universitas Setia Budi

Asik Gunawan, Amdk

Surakarta, 25 September 2021
Penanggung jawab
Determinasi Tumbuhan

Dra. Dewi Sulistyawati, M.Sc.

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Lampiran 2 Data Perhitungan rendemen serbuk

Sampel	Bobot basah (gram)	Bobot kering (gram)	Rendemen (%)
Daun Kersen	8.000	3.700	46,25 %

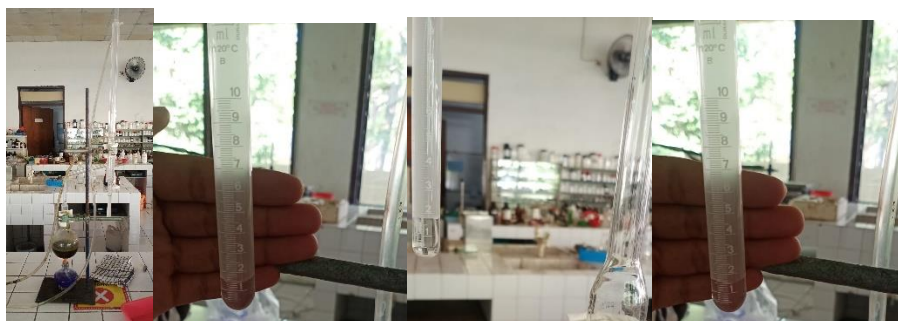
Perhitungan Rendemen Serbuk :

$$\text{rendemen} = \frac{\text{berat serbuk kering (g)}}{\text{berat serbuk basah (g)}} \times 100$$

$$\text{rendemen} = \frac{3.700}{8.000} \times 100$$

$$= 46,25 \%$$

Lampiran 3 Hasil pemeriksaan fisik serbuk



Lampiran 4 Data perhitungan rendemen ekstrak

Sampel	Bobot serbuk (gram)	Bobot ekstrak (gram)	Rendemen (%)
Serbuk daun kersen	600	149	24,83

$$\text{Rendemen} = \frac{\text{bobot ekstrak (g)}}{\text{bobot serbuk (g)}} \times 100 \%$$

$$= \frac{149}{600} \times 100 \%$$

$$= 24,83 \%$$

Lampiran 5 Hasil identifikasi fisik ekstrak





Lampiran 6 Gambar hasil skrining fitokimia



Lampiran 7 Gambar pengujian mutu fisik emulgel ekstrak etanol daun kersen (*Muntingia calabura* L.)



Sediaan Sebelum Stabilitas



Sediaan Setelah Stabilitas

**Viskositas****pH****Daya Sebar****Daya Lekat****Homogenitas**

Lampiran 8 Hasil mutu fisik sediaan emulgel ekstrak etanol daun kersen (Muntingia calabura L.)

Viskositas

Formula 1

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	320	310	320	290
2	310	310	300	300
3	320	300	310	290
Rata-rata	316,67	306,67	310,00	293,33
SD	5,77	5,77	10,00	5,77

Formula 2

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	320	310	310	300
2	320	320	300	300
3	320	300	310	290
Rata-rata	320,00	310,00	306,67	296,67
SD	0,00	10,00	5,77	5,77

Formula 3

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	330	310	310	290
2	320	320	310	300
3	330	310	320	300
Rata-rata	326,67	313,33	313,33	296,67
SD	5,77	5,77	5,77	5,77

Formula 4

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	330	320	310	300
2	320	320	320	310
3	330	310	310	300
Rata-rata	326,67	316,67	313,33	303,33
SD	5,77	5,77	5,77	5,77

pH

Formula 1

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	6,37	6,30	6,32	6,30
2	6,33	6,29	6,33	6,28
3	6,35	6,32	6,32	6,29
Rata-rata	6,35	6,30	6,32	6,29
SD	0,02	0,02	0,01	0,01

Formula 2

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	6,34	6,27	6,33	6,29
2	6,38	6,29	6,31	6,30
3	6,35	6,30	6,31	6,30
Rata-rata	6,36	6,29	6,32	6,30
SD	0,02	0,02	0,01	0,01

Formula 3

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	6,28	6,26	6,29	6,28
2	6,34	6,25	6,29	6,27
3	6,32	6,25	6,30	6,26
Rata-rata	6,31	6,25	6,29	6,27
SD	0,03	0,01	0,01	0,01

Formula 4

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	6,28	6,22	6,26	6,24
2	6,3	6,25	6,24	6,23
3	6,29	6,23	6,26	6,25
Rata-rata	6,29	6,23	6,25	6,24
SD	0,01	0,02	0,01	0,01

Daya Sebar

Formula 1

Replikasi		Hari ke-1			Hari ke-7		
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram	
1	3,50	3,90	4,40	3,60	4,00	4,48	
2	3,68	4,08	4,48	3,70	4,05	4,53	
3	3,55	3,98	4,36	3,63	3,98	4,50	
Rata-rata	3,58	3,99	4,41	3,64	4,01	4,50	
SD	0,09	0,09	0,06	0,05	0,04	0,03	

Replikasi		Hari ke-14			Hari ke-21		
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram	
1	3,65	4,05	4,55	3,83	4,45	4,95	
2	3,70	4,00	4,48	3,90	4,50	5,08	
3	3,70	4,08	4,65	3,85	4,48	5,10	
Rata-rata	3,68	4,04	4,56	3,86	4,48	5,04	
SD	0,03	0,04	0,09	0,04	0,03	0,08	

Formula 2

Replikasi		Hari ke-1			Hari ke-7	
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram
1	3,45	3,85	4,25	3,60	3,85	4,28
2	3,55	4,05	4,20	3,58	3,98	4,30
3	3,60	4,00	4,23	3,63	3,90	4,33
Rata-rata	3,53	3,97	4,23	3,60	3,91	4,30
SD	0,08	0,10	0,03	0,03	0,07	0,03

Replikasi		Hari ke-14			Hari ke-21	
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram
1	3,55	3,95	4,35	3,70	4,35	4,98
2	3,58	3,90	4,40	3,68	4,40	5,00
3	3,55	4,10	4,43	3,73	4,55	5,10
Rata-rata	3,56	3,98	4,39	3,70	4,43	5,03
SD	0,02	0,10	0,04	0,03	0,10	0,06

Formula 3

Replikasi		Hari ke-1			Hari ke-7	
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram
1	3,75	3,95	4,23	3,70	4,00	4,45
2	3,80	4,08	4,30	3,68	3,95	4,40
3	3,65	4,03	4,25	3,73	4,00	4,40
Rata-rata	3,73	4,02	4,26	3,70	3,98	4,42
SD	0,08	0,07	0,04	0,03	0,03	0,03

Replikasi		Hari ke-14			Hari ke-21	
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram
1	3,65	4,05	4,45	3,85	4,53	5,03
2	3,73	4,15	4,58	3,90	4,60	5,15
3	3,80	4,18	4,70	3,95	4,65	5,23
Rata-rata	3,73	4,13	4,58	3,90	4,59	5,14
SD	0,08	0,07	0,13	0,05	0,06	0,10

Formula 4

Replikasi		Hari ke-1			Hari ke-7		
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram	
1	3,65	4,10	4,48	3,75	4,15	4,55	
2	3,70	4,15	4,50	3,70	4,18	4,60	
3	3,73	4,10	4,45	3,80	4,25	4,71	
Rata-rata	3,69	4,12	4,48	3,75	4,19	4,62	
SD	0,04	0,03	0,03	0,05	0,05	0,08	

Replikasi		Hari ke-14			Hari ke-21		
	50 gram	100 gram	150 gram	50 gram	100 gram	150 gram	
1	3,78	4,23	4,65	3,90	4,58	5,05	
2	3,68	4,18	4,60	3,95	4,65	5,15	
3	3,81	4,30	4,78	3,90	4,60	5,15	
Rata-rata	3,76	4,24	4,68	3,92	4,61	5,12	
SD	0,07	0,06	0,09	0,03	0,04	0,06	

Daya Lekat

Formula 1

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	1,34	1,43	1,40	1,26
2	1,20	1,6	1,59	1,37
3	1,75	1,48	1,45	1,24
Rata-rata	1,43	1,50	1,48	1,29
SD	0,29	0,09	0,10	0,07

Formula 2

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	1,40	1,48	1,48	1,32
2	1,35	1,49	1,46	1,35
3	1,49	1,48	1,50	1,31
Rata-rata	1,41	1,48	1,48	1,33
SD	0,07	0,01	0,02	0,02

Formula 3

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	1,51	1,45	1,47	1,41
2	1,60	1,30	1,70	1,54
3	1,45	1,56	1,32	1,33
Rata-rata	1,52	1,44	1,50	1,43
SD	0,08	0,13	0,19	0,11

Formula 4

Replikasi	Hari ke-1	Hari ke-7	Hari ke-14	Hari ke-21
1	1,50	1,66	1,51	1,40
2	1,52	1,51	1,54	1,48
3	1,49	1,69	1,50	1,39
Rata-rata	1,50	1,62	1,52	1,42
SD	0,02	0,10	0,02	0,05

Stabilitas

Viskositas

Replikasi		Sebelum				Sesudah		
	F1	F2	F3	F4	F1	F2	F3	F4
1	320	320	330	330	310	320	330	330
2	310	320	320	320	320	310	320	320
3	320	320	330	330	310	320	320	330
Rata-rata	316,67	320,00	326,67	326,67	313,33	316,67	323,33	326,67
SD	5,77	0,00	5,77	5,77	5,77	5,77	5,77	5,77

pH

Replikasi		Sebelum				Sesudah		
	F1	F2	F3	F4	F1	F2	F3	F4
1	6,37	6,34	6,28	6,28	6,29	6,28	6,28	6,26
2	6,33	6,38	6,34	6,3	6,29	6,27	6,27	6,28
3	6,35	6,35	6,32	6,29	6,28	6,28	6,27	6,25
Rata-rata	6,35	6,36	6,31	6,29	6,29	6,28	6,27	6,26
SD	0,02	0,02	0,03	0,01	0,01	0,01	0,01	0,02

Lampiran 9 Hasil uji SPF

Kontrol Positif (Wardah gel SPF 30)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum$ EE x I x Abs	FP	SPF
290	0,0150	0,8143	0,0122145	?	0,9022464	10	30
295	0,0817	0,8684	0,0709483				
300	0,2874	0,9009	0,2589187				
305	0,3278	0,9210	0,3019038				
310	0,1864	0,9288	0,1731283				
315	0,0839	0,8581	0,0719946				
320	0,0180	0,7299	0,0131382				
			0,9022464				

$$SPF = CF \times \{ \sum EE (\lambda) \times I (\lambda) \times abs (\lambda) \} \times FP$$

$$30 = CF \times 0,90224635 \times 10$$

$$CF = 3,325034$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum$ EE x I x Abs	FP	SPF
290	0,0150	0,8128	0,012192	?	0,8988394	10	30
295	0,0817	0,8655	0,0707114				
300	0,2874	0,8981	0,2581139				
305	0,3278	0,9170	0,3005926				
310	0,1864	0,9248	0,1723827				
315	0,0839	0,8557	0,0717932				
320	0,0180	0,7252	0,0130536				
			0,8988394				

$$SPF = CF \times \{ \sum EE (\lambda) \times I (\lambda) \times abs (\lambda) \} \times FP$$

$$30 = CF \times 0,8988394 \times 10$$

$$CF = 3,337637$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum$ EE x I x Abs	FP	SPF
290	0,0150	0,8088	0,012132	?	0,8957555	10	30
295	0,0817	0,8633	0,0705316				
300	0,2874	0,8942	0,2569931				
305	0,3278	0,9136	0,2994781				
310	0,1864	0,9230	0,1720472				
315	0,0839	0,8530	0,0715667				
320	0,0180	0,7226	0,0130068				
			0,8957555				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$30 = CF \times 0,8957555 \times 10$$

$$CF = 3,349128$$

$$\text{Rata-rata CF} = 3,33727$$

Nilai SPF Ekstrak Etanol Daun Kersen 1%

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum$ EE x I x Abs	FP	SPF
290	0,0150	0,8378	0,012567	3,3373	0,72704432	10	?
295	0,0817	0,8016	0,06549072				
300	0,2874	0,7655	0,2200047				
305	0,3278	0,7256	0,23785168				
310	0,1864	0,6780	0,1263792				
315	0,0839	0,6398	0,05367922				
320	0,0180	0,6151	0,0110718				
			0,72704432				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,72704432 \times 10$$

$$SPF = 24,2634$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum$ EE x I x Abs	FP	SPF
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					Abs		
290	0,0150	0,8228	0,012342	3,3373	0,71873139	10	?
295	0,0817	0,7888	0,06444496				
300	0,2874	0,7549	0,21695826				
305	0,3278	0,7168	0,23496704				
310	0,1864	0,6732	0,12548448				
315	0,0839	0,6375	0,05348625				
320	0,0180	0,6138	0,0110484				
			0,71873139				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,71873139 \times 10$$

$$SPF = 24,986$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,8384	0,012576	3,3373	0,73208123	10	
295	0,0817	0,8035	0,06564595				
300	0,2874	0,7693	0,22109682				
305	0,3278	0,7299	0,23926122				
310	0,1864	0,6858	0,12783312				
315	0,0839	0,6488	0,05443432				
320	0,0180	0,6241	0,0112338				
			0,73208123				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,73208123 \times 10$$

$$SPF = 24,4315$$

$$\text{Rata-rata SPF} = 24,227$$

Nilai SPF Ekstrak Etanol Daun Kersen 2 %

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,9172	0,013758	3,3373	0,80392854	10	?
295	0,0817	0,8880	0,0725496				
300	0,2874	0,8518	0,24480732				
305	0,3278	0,8046	0,26374788				
310	0,1864	0,7439	0,13866296				
315	0,0839	0,6962	0,05841118				
320	0,0180	0,6662	0,0119916				
			0,80392854				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,80392854 \times 10$$

$$SPF = 26,8292$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,8539	0,0128085	3,3373	0,74445906	10	?
295	0,0817	0,8259	0,06747603				
300	0,2874	0,7910	0,2273334				
305	0,3278	0,7451	0,24424378				
310	0,1864	0,6860	0,1278704				
315	0,0839	0,6405	0,05373795				
320	0,0180	0,6105	0,010989				
			0,74445906				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,74445906 \times 10$$

$$SPF = 24,8446$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,8669	0,0130035	3,3373	0,75711461	10	?
295	0,0817	0,8380	0,0684646				
300	0,2874	0,8029	0,23075346				
305	0,3278	0,7579	0,24843962				
310	0,1864	0,6995	0,1303868				
315	0,0839	0,6537	0,05484543				
320	0,0180	0,6234	0,0112212				
			0,75711461				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,75711461 \times 10$$

$$SPF = 24,2669$$

$$\text{Rata-rata SPF} = 25,647$$

Nilai SPF Ekstrak Etanol Daun Kersen 4 %

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	1,2202	0,018303	3,3373	1,04086476	10	?
295	0,0817	1,1587	0,09466579				
300	0,2874	1,0984	0,31568016				
305	0,3278	1,0357	0,33950246				
310	0,1864	0,9680	0,1804352				
315	0,0839	0,9125	0,07655875				
320	0,0180	0,8733	0,0157194				
			1,04086476				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 1,04086476 \times 10$$

$$SPF = 34,7364$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum EE \times I \times$	FP	SPF
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					Abs		
290	0,0150	1,0445	0,0156675	3,3373	0,89044401	10	?
295	0,0817	0,9908	0,08094836				
300	0,2874	0,9403	0,27024222				
305	0,3278	0,8859	0,29039802				
310	0,1864	0,8275	0,154246				
315	0,0839	0,7809	0,06551751				
320	0,0180	0,7458	0,0134244				
			0,89044401				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,89044401 \times 10$$

$$SPF = 29,7165$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	1,0698	0,016047	3,3373	0,9109191	10	?
295	0,0817	1,0141	0,08285197				
300	0,2874	0,9612	0,27624888				
305	0,3278	0,9061	0,29701958				
310	0,1864	0,8471	0,15789944				
315	0,0839	0,7997	0,06709483				
320	0,0180	0,7643	0,0137574				
			0,9109191				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,9109191 \times 10$$

$$SPF = 30,3998$$

$$\text{Rata-rata SPF} = 31,617$$

Nilai SPF Emulgel Sebelum Stabilitas

Formula 1 (Basis)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,0230	0,000345	3,3373	0,02010672	10	?
295	0,0817	0,0228	0,00186276				
300	0,2874	0,0216	0,00620784				
305	0,3278	0,0200	0,006556				
310	0,1864	0,0185	0,0034484				
315	0,0839	0,0168	0,00140952				
320	0,0180	0,0154	0,0002772				
			0,02010672				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,02010672 \times 10$$

$$SPF = 0,67101$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,0226	0,000339	3,3373	0,01969967	10	?
295	0,0817	0,0219	0,00178923				
300	0,2874	0,0212	0,00609288				
305	0,3278	0,0195	0,0063921				
310	0,1864	0,0183	0,00341112				
315	0,0839	0,0166	0,00139274				
320	0,0180	0,0157	0,0002826				
			0,01969967				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,01969967 \times 10$$

$$SPF = 0,65743$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,0215	0,0003225	3,3373	0,01837972	10	?
295	0,0817	0,0210	0,0017157				
300	0,2874	0,0200	0,005748				
305	0,3278	0,0182	0,00596596				
310	0,1864	0,0167	0,00311288				
315	0,0839	0,0152	0,00127528				
320	0,0180	0,0133	0,0002394				
			0,01837972				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,01837972 \times 10$$

$$SPF = 0,61338$$

$$\text{Rata-rata SPF} = 0,647$$

Formula 2 (Emulgel Ekstrak Etanol Daun Kersen 1 %)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1270	0,001905	3,3373	0,11342325	10	?
295	0,0817	0,1221	0,00997557				
300	0,2874	0,1178	0,03385572				
305	0,3278	0,1136	0,03723808				
310	0,1864	0,1082	0,02016848				
315	0,0839	0,1020	0,0085578				
320	0,0180	0,0957	0,0017226				
			0,11342325				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,11342325 \times 10$$

$$SPF = 3,7852$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\frac{\sum EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1288	0,001932	3,3373	0,11480333	10	?
295	0,0817	0,1242	0,01014714				
300	0,2874	0,1196	0,03437304				
305	0,3278	0,1151	0,03772978				
310	0,1864	0,1090	0,0203176				
315	0,0839	0,1023	0,00858297				
320	0,0180	0,0956	0,0017208				
			0,11480333				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,11480333 \times 10$$

$$SPF = 3,8313$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1259	0,0018885	3,3373	0,11210454	10	?
295	0,0817	0,1212	0,00990204				
300	0,2874	0,1169	0,03359706				
305	0,3278	0,1124	0,03684472				
310	0,1864	0,1061	0,01977704				
315	0,0839	0,1002	0,00840678				
320	0,0180	0,0938	0,0016884				
			0,11210454				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,11210454 \times 10$$

$$SPF = 3,7412$$

$$\text{Rata-rata SPF} = 3,786$$

Formula 3 (Emulgel Ekstrak Etanol Daun Kersen 2 %)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,2061	0,0030915	3,3373	0,18069839	10	?
295	0,0817	0,1978	0,01616026				
300	0,2874	0,1900	0,054606				
305	0,3278	0,1807	0,05923346				
310	0,1864	0,1692	0,03153888				
315	0,0839	0,1591	0,01334849				
320	0,0180	0,1511	0,0027198				
			0,18069839				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,18069839 \times 10$$

$$SPF = 6,0304$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,2057	0,0030855	3,3373	0,18000792	10	?
295	0,0817	0,1978	0,01616026				
300	0,2874	0,1891	0,05434734				
305	0,3278	0,1800	0,059004				
310	0,1864	0,1686	0,03142704				
315	0,0839	0,1582	0,01327298				
320	0,0180	0,1506	0,0027108				
			0,18000792				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,18000792 \times 10$$

$$SPF = 6,0073$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,2057	0,0030855	3,3373	0,18019273	10	?
295	0,0817	0,1977	0,01615209				
300	0,2874	0,1893	0,05440482				
305	0,3278	0,1803	0,05910234				
310	0,1864	0,1686	0,03142704				
315	0,0839	0,1586	0,01330654				
320	0,0180	0,1508	0,0027144				
			0,18019273				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,18019273 \times 10$$

$$SPF = 6,0135$$

$$\text{Rata-rata SPF} = 6,017$$

Formula 4 (Emulgel Ekstrak Etanol Daun Kersen 4 %)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,3646	0,005469	3,3373	0,30924556	10	?
295	0,0817	0,3459	0,02826003				
300	0,2874	0,3279	0,09423846				
305	0,3278	0,3082	0,10102796				
310	0,1864	0,2860	0,0533104				
315	0,0839	0,2669	0,02239291				
320	0,0180	0,2526	0,0045468				
			0,30924556				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,30924556 \times 10$$

$$SPF = 10,3203$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\frac{\sum EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,3644	0,005466	3,3373	0,30913465	10	?
295	0,0817	0,3451	0,02819467				
300	0,2874	0,3275	0,0941235				
305	0,3278	0,3083	0,10106074				
310	0,1864	0,2861	0,05332904				
315	0,0839	0,2670	0,0224013				
320	0,0180	0,2533	0,0045594				
			0,30913465				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,309133465 \times 10$$

$$SPF = 10,3166$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,3593	0,0053895	3,3373	0,30441028	10	?
295	0,0817	0,3403	0,02780251				
300	0,2874	0,3227	0,09274398				
305	0,3278	0,3035	0,0994873				
310	0,1864	0,2816	0,05249024				
315	0,0839	0,2625	0,02202375				
320	0,0180	0,2485	0,004473				
			0,30441028				

$$SPF = CF \times \{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \} \times FP$$

$$SPF = 3,3373 \times 0,30441028 \times 10$$

$$SPF = 10,1590$$

$$\text{Rata-rata SPF} = 10,265$$

Nilai SPF Emulgel Setelah Stabilitas

Formula 1 (Basis)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,0140	0,00021	3,3373	0,01127355	10	?
295	0,0817	0,0136	0,00111112				
300	0,2874	0,0126	0,00362124				
305	0,3278	0,0110	0,0036058				
310	0,1864	0,0101	0,00188264				
315	0,0839	0,0085	0,00071315				
320	0,0180	0,0072	0,0001296				
			0,01127355				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,01127355 \times 10$$

$$SPF = 0,376228$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,0140	0,00021	3,3373	0,01122847	10	?
295	0,0817	0,0137	0,00111929				
300	0,2874	0,0127	0,00364998				
305	0,3278	0,0109	0,00357302				
310	0,1864	0,0100	0,001864				
315	0,0839	0,0082	0,00068798				
320	0,0180	0,0069	0,0001242				
			0,01122847				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,01122847 \times 10$$

$$SPF = 0,374724$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,0149	0,0002235	3,3373	0,01242397	10	?
295	0,0817	0,0148	0,00120916				
300	0,2874	0,0138	0,00396612				
305	0,3278	0,0123	0,00403194				
310	0,1864	0,0110	0,0020504				
315	0,0839	0,0095	0,00079705				
320	0,0180	0,0081	0,0001458				
			0,01242397				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,01242397 \times 10$$

$$SPF = 0,414621$$

$$\text{Rata-rata SPF} = 0,389$$

Formula 2 (Emulgel Ekstrak Etanol Daun Kersen 1 %)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1037	0,0015555	3,3373	0,08936396	10	?
295	0,0817	0,0981	0,00801477				
300	0,2874	0,0939	0,02698686				
305	0,3278	0,0893	0,02927254				
310	0,1864	0,0838	0,01562032				
315	0,0839	0,0783	0,00656937				
320	0,0180	0,0747	0,0013446				
			0,08936396				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,08936396 \times 10$$

$$SPF = 2,9823$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{\text{EE x I x Abs}}{\text{Abs}}$	FP	SPF
290	0,0150	0,1025	0,0015375	3,3373	0,08788744	10	?
295	0,0817	0,0966	0,00789222				
300	0,2874	0,0923	0,02652702				
305	0,3278	0,0878	0,02878084				
310	0,1864	0,0824	0,01535936				
315	0,0839	0,0770	0,0064603				
320	0,0180	0,0739	0,0013302				
			0,08788744				

$$\text{SPF} = \text{CF} \times \{ \sum \text{EE}(\lambda) \times \text{I}(\lambda) \times \text{abs}(\lambda) \} \times \text{FP}$$

$$\text{SPF} = 3,3373 \times 0,08788744 \times 10$$

$$\text{SPF} = 2,9330$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{\text{EE x I x Abs}}{\text{Abs}}$	FP	SPF
290	0,0150	0,1037	0,0015555	3,3373	0,08935566	10	?
295	0,0817	0,0984	0,00803928				
300	0,2874	0,0940	0,0270156				
305	0,3278	0,0894	0,02930532				
310	0,1864	0,0834	0,01554576				
315	0,0839	0,0780	0,0065442				
320	0,0180	0,0750	0,00135				
			0,08935566				

$$\text{SPF} = \text{CF} \times \{ \sum \text{EE}(\lambda) \times \text{I}(\lambda) \times \text{abs}(\lambda) \} \times \text{FP}$$

$$\text{SPF} = 3,3373 \times 0,08935566 \times 10$$

$$\text{SPF} = 2,9820$$

$$\text{Rata-rata SPF} = 2,966$$

Formula 3 (Emulgel Ekstrak Etanol Daun Kersen 2 %)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\frac{\sum EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1837	0,0027555	3,3373	0,15965126	10	?
295	0,0817	0,1758	0,01436286				
300	0,2874	0,1681	0,04831194				
305	0,3278	0,1596	0,05231688				
310	0,1864	0,1491	0,02779224				
315	0,0839	0,1396	0,01171244				
320	0,0180	0,1333	0,0023994				
			0,15965126				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,159651266 \times 10$$

$$SPF = 5,3280$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1810	0,002715	3,3373	0,15813635	10	?
295	0,0817	0,1731	0,01414227				
300	0,2874	0,1662	0,04776588				
305	0,3278	0,1585	0,0519563				
310	0,1864	0,1479	0,02756856				
315	0,0839	0,1386	0,01162854				
320	0,0180	0,1311	0,0023598				
			0,15813635				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,15813635 \times 10$$

$$SPF = 5,2774$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,1819	0,0027285	3,3373	0,15807234	10	?
295	0,0817	0,1741	0,01422397				
300	0,2874	0,1666	0,04788084				
305	0,3278	0,1581	0,05182518				
310	0,1864	0,1472	0,02743808				
315	0,0839	0,1383	0,01160337				
320	0,0180	0,1318	0,0023724				
			0,15807234				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,15807234 \times 10$$

$$SPF = 5,2753$$

$$\text{Rata-rata SPF} = 5,294$$

Formula 4 (Emulgel Ekstrak Etanol Daun Kersen 2 %)

Replikasi 1

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{EE \times I \times Abs}{Abs}$	FP	SPF
290	0,0150	0,3490	0,005235	3,3373	0,29939511	10	?
295	0,0817	0,3317	0,02709989				
300	0,2874	0,3156	0,09070344				
305	0,3278	0,2985	0,0978483				
310	0,1864	0,2792	0,05204288				
315	0,0839	0,2620	0,0219818				
320	0,0180	0,2491	0,0044838				
			0,29939511				

$$SPF = CF \times \left\{ \sum EE(\lambda) \times I(\lambda) \times abs(\lambda) \right\} \times FP$$

$$SPF = 3,3373 \times 0,29939511 \times 10$$

$$SPF = 9,991613$$

Replikasi 2

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{\text{EE x I x Abs}}{\text{Abs}}$	FP	SPF
290	0,0150	0,3496	0,005244	3,3373	0,29934367	10	?
295	0,0817	0,3318	0,02710806				
300	0,2874	0,3159	0,09078966				
305	0,3278	0,2987	0,09791386				
310	0,1864	0,2785	0,0519124				
315	0,0839	0,2611	0,02190629				
320	0,0180	0,2483	0,0044694				
			0,29934367				

$$\text{SPF} = \text{CF} \times \{ \sum \text{EE}(\lambda) \times \text{I}(\lambda) \times \text{abs}(\lambda) \} \times \text{FP}$$

$$\text{SPF} = 3,3373 \times 0,29934367 \times 10$$

$$\text{SPF} = 9,989896$$

Replikasi 3

λ	EE x I	Abs	EE x I x Abs	CF	$\sum \frac{\text{EE x I x Abs}}{\text{Abs}}$	FP	SPF
290	0,0150	0,3505	0,0052575	3,3373	0,30109351	10	?
295	0,0817	0,3335	0,02724695				
300	0,2874	0,3174	0,09122076				
305	0,3278	0,3004	0,09847112				
310	0,1864	0,2807	0,05232248				
315	0,0839	0,2630	0,0220657				
320	0,0180	0,2505	0,004509				
			0,30109351				

$$\text{SPF} = \text{CF} \times \{ \sum \text{EE}(\lambda) \times \text{I}(\lambda) \times \text{abs}(\lambda) \} \times \text{FP}$$

$$\text{SPF} = 3,3373 \times 0,30109351 \times 10$$

$$\text{SPF} = 10,0483$$

$$\text{Rata-rata SPF} = 10,010$$

Lampiran 10 Hasil SPSS

HASIL UJI DAYA LEKAT MUTU FISIK

Tests of Normality							
	DayaLekat	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hari1	Formula 1	,290	3	.	,926	3	,473
	Formula 2	,276	3	.	,942	3	,537
	Formula 3	,219	3	.	,987	3	,780
	Formula 4	,253	3	.	,964	3	,637
Hari21	Formula 1	,333	3	.	,862	3	,274
	Formula 2	,175	3	.	1,000	3	1,000
	Formula 3	,229	3	.	,981	3	,739
	Formula 4	,349	3	.	,832	3	,194

a. Lilliefors Significance Correction

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Hari1	Based on Mean	6,870	3	8	,013
	Based on Median	1,641	3	8	,256
	Based on Median and with adjusted df	1,641	3	2,264	,383
	Based on trimmed mean	6,283	3	8	,017
Hari21	Based on Mean	2,770	3	8	,111
	Based on Median	,868	3	8	,497
	Based on Median and with adjusted df	,868	3	5,515	,511
	Based on trimmed mean	2,588	3	8	,126

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Hari1	Between Groups	,026	3	,009	,393	,761
	Within Groups	,178	8	,022		
	Total	,204	11			
Hari21	Between Groups	,045	3	,015	3,183	,085
	Within Groups	,037	8	,005		
	Total	,082	11			

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Hari1	1,4658	12	,13621	,03932
	Hari21	1,3650	12	,08629	,02491

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Hari1 & Hari21	12	,133	,679

Paired Samples Test

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Hari1 - Hari21	,10083	,15120	,04365	,00476	,19690	2,310	11	,041

UJI MUTU FISIK VISOSITAS

Tests of Normality							
	Viskositas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hari1	1	,385	3	.	,750	3	,000
	2	.	3	.	.	3	.
	3	,385	3	.	,750	3	,000
	4	,385	3	.	,750	3	,000
Hari21	1	,385	3	.	,750	3	,000
	2	,385	3	.	,750	3	,000
	3	,385	3	.	,750	3	,000
	4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Kruskal-Wallis Test

Ranks			
	Viskositas	N	Mean Rank
Hari1	1	3	3,67
	2	3	5,00
	3	3	8,67
	4	3	8,67
	Total	12	
Hari21	1	3	4,33
	2	3	6,17
	3	3	6,17
	4	3	9,33
	Total	12	

Test Statistics ^{a,b}		
	Hari1	Hari21
Kruskal-Wallis H	5,900	3,883
df	3	3
Asymp. Sig.	,117	,274

a. Kruskal Wallis Test

b. Grouping Variable: Viskositas

Wilcoxon Signed Ranks Test

		Ranks		
		N	Mean Rank	Sum of Ranks
Hari21 - Hari1	Negative Ranks	12 ^a	6,50	78,00
	Positive Ranks	0 ^b	,00	,00
	Ties	0 ^c		
	Total	12		

a. Hari21 < Hari1

b. Hari21 > Hari1

c. Hari21 = Hari1

Test Statistics^a

Hari21 - Hari1	
Z	-3,108 ^b
Asymp. Sig. (2-tailed)	,002

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

UJI MUTU FISIK PH

Tests of Normality							
	pH	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hari1	Formula 1	,175	3	.	1,000	3	1,000
	Formula 2	,292	3	.	,923	3	,463
	Formula 3	,253	3	.	,964	3	,637
	Formula 4	,175	3	.	1,000	3	1,000
Hari21	Formula 1	,175	3	.	1,000	3	1,000
	Formula 2	,385	3	.	,750	3	,000
	Formula 3	,175	3	.	1,000	3	1,000
	Formula 4	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Kruskal-Wallis Test

Ranks			
	pH	N	Mean Rank
Hari1	Formula 1	3	8,83
	Formula 2	3	9,67
	Formula 3	3	4,67
	Formula 4	3	2,83
	Total	12	
Hari21	Formula 1	3	8,67
	Formula 2	3	10,17
	Formula 3	3	5,17
	Formula 4	3	2,00
	Total	12	

Test Statistics ^{a,b}		
	Hari1	Hari21
Kruskal-Wallis H	7,528	9,468
df	3	3
Asymp. Sig.	,057	,024

a. Kruskal Wallis Test

b. Grouping Variable: pH

Wilcoxon Signed Ranks Test

		Ranks		
		N	Mean Rank	Sum of Ranks
Hari21 - Hari1	Negative Ranks	11 ^a	6,00	66,00
	Positive Ranks	0 ^b	,00	,00
	Ties	1 ^c		
	Total	12		

a. Hari21 < Hari1

b. Hari21 > Hari1

c. Hari21 = Hari1

Test Statistics^a

Hari21 - Hari1	
Z	-2,949 ^b
Asymp. Sig. (2-tailed)	,003

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

UJI MUTU FISIK DAYA SEBAR

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	DayaSebar	Statistic	df	Sig.	Statistic	df	Sig.
Hari1	F1'Beban 50 g'	,280	3	.	,938	3	,520
	F1'Beban 100 g'	,196	3	.	,996	3	,878
	F1'Beban 150 g'	,253	3	.	,964	3	,637
	F2'Beban 50 g'	,253	3	.	,964	3	,637
	F2'Beban 100 g'	,292	3	.	,923	3	,463
	F2'Beban 150 g'	,219	3	.	,987	3	,780
	F3'Beban 50 g'	,253	3	.	,964	3	,637
	F3'Beban 100 g'	,227	3	.	,983	3	,747
	F3'Beban 150 g'	,276	3	.	,942	3	,537
	F4'Beban 50 g'	,232	3	.	,980	3	,726
	F4'Beban 100 g'	,385	3	.	,750	3	,000
	F4'Beban 150 g'	,219	3	.	,987	3	,780
Hari21	F1'Beban 50 g'	,276	3	.	,942	3	,537
	F1'Beban 100 g'	,219	3	.	,987	3	,780
	F1'Beban 150 g'	,340	3	.	,848	3	,235
	F2'Beban 50 g'	,219	3	.	,987	3	,780
	F2'Beban 100 g'	,292	3	.	,923	3	,463
	F2'Beban 150 g'	,328	3	.	,871	3	,298
	F3'Beban 50 g'	,175	3	.	1,000	3	1,000
	F3'Beban 100 g'	,211	3	.	,991	3	,817
	F3'Beban 150 g'	,219	3	.	,987	3	,780
	F4'Beban 50 g'	,385	3	.	,750	3	,000
	F4'Beban 100 g'	,276	3	.	,942	3	,537
	F4'Beban 150 g'	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Kruskal-Wallis Test

Ranks			
	DayaSebar	N	Mean Rank
Hari1	F1'Beban 50 g'	3	3,83
	F1'Beban 100 g'	3	8,00
	F1'Beban 150 g'	3	11,00
	F2'Beban 50 g'	3	3,17
	Total	12	
Hari21	F1'Beban 50 g'	3	5,00
	F1'Beban 100 g'	3	8,00
	F1'Beban 150 g'	3	11,00
	F2'Beban 50 g'	3	2,00
	Total	12	

Test Statistics^{a,b}

	Hari1	Hari21
Kruskal-Wallis H	9,430	10,385
df	3	3
Asymp. Sig.	,024	,016

a. Kruskal Wallis Test

b. Grouping Variable: DayaSebar

Wilcoxon Signed Ranks Test

Ranks				
		N	Mean Rank	Sum of Ranks
Hari21 - Hari1	Negative Ranks	0 ^a	,00	,00
	Positive Ranks	36 ^b	18,50	666,00
	Ties	0 ^c		
	Total	36		

a. Hari21 < Hari1

b. Hari21 > Hari1

c. Hari21 = Hari1

Test Statistics^a

Hari21 - Hari1	
Z	-5,233 ^b
Asymp. Sig. (2-tailed)	,000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

STABILITAS PH

Tests of Normality							
	pH	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
SebelumCycling	Formula 1	,175	3	.	1,000	3	1,000
	Formula 2	,292	3	.	,923	3	,463
	Formula 3	,253	3	.	,964	3	,637
	Formula 4	,175	3	.	1,000	3	1,000
SetelahCycling	Formula 1	,385	3	.	,750	3	,000
	Formula 2	,385	3	.	,750	3	,000
	Formula 3	,385	3	.	,750	3	,000
	Formula 4	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

Kruskal-Wallis Test

Ranks			
	pH	N	Mean Rank
SebelumCycling	Formula 1	3	8,83
	Formula 2	3	9,67
	Formula 3	3	4,67
	Formula 4	3	2,83
	Total	12	
SetelahCycling	Formula 1	3	10,33
	Formula 2	3	6,67
	Formula 3	3	5,33
	Formula 4	3	3,67
	Total	12	

Test Statistics ^{a,b}		
	SebelumCycling	SetelahCycling
Kruskal-Wallis H	7,528	6,097
df	3	3
Asymp. Sig.	,057	,107

a. Kruskal Wallis Test

b. Grouping Variable: pH

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
SetelahCycling - SebelumCycling	Negative Ranks	11 ^a	6,00	66,00
	Positive Ranks	0 ^b	,00	,00
	Ties	1 ^c		
	Total	12		

a. SetelahCycling < SebelumCycling

b. SetelahCycling > SebelumCycling

c. SetelahCycling = SebelumCycling

Test Statistics^a

	SetelahCycling – SebelumCycling
Z	-2,943 ^b
Asymp. Sig. (2-tailed)	,003

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

STABILITAS VISKOSITAS

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Viskositas	Statistic	df	Sig.	Statistic	df	Sig.
SebelumCycling	Formula 1	,385	3	.	,750	3	,000
	Formula 2	.	3	.	.	3	.
	Formua 3	,385	3	.	,750	3	,000
	Formula 4	,385	3	.	,750	3	,000
SetelahCycling	Formula 1	,385	3	.	,750	3	,000
	Formula 2	,385	3	.	,750	3	,000
	Formua 3	,385	3	.	,750	3	,000
	Formula 4	,385	3	.	,750	3	,000

a. Lilliefors Significance Correction

Kruskal-Wallis Test

		Ranks	
	Viskositas	N	Mean Rank
SebelumCycling	Formula 1	3	3,67
	Formula 2	3	5,00
	Formua 3	3	8,67
	Formula 4	3	8,67
	Total	12	
SetelahCycling	Formula 1	3	3,50
	Formula 2	3	5,00
	Formua 3	3	8,00
	Formula 4	3	9,50
	Total	12	

Test Statistics ^{a,b}		
	SebelumCycling	SetelahCycling
Kruskal-Wallis H	5,900	6,111
df	3	3
Asymp. Sig.	,117	,106

a. Kruskal Wallis Test

b. Grouping Variable: Viskositas

Wilcoxon Signed Ranks Test

		Ranks		
		N	Mean Rank	Sum of Ranks
SetelahCycling - SebelumCycling	Negative Ranks	4 ^a	3,00	12,00
	Positive Ranks	1 ^b	3,00	3,00
	Ties	7 ^c		
	Total	12		

a. SetelahCycling < SebelumCycling

b. SetelahCycling > SebelumCycling

c. SetelahCycling = SebelumCycling

Test Statistics^a

SetelahCycling - SebelumCycling	
Z	-1,342 ^b
Asymp. Sig. (2-tailed)	,180

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

SPSS SPF

Tests of Normality							
	SPF	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
SebelumCycling	Formula 1	,177	3	.	1,000	3	,974
	Formula 2	,284	3	.	,933	3	,501
	Formula 3	,378	3	.	,767	3	,038
	Formula 4	,298	3	.	,915	3	,435
SetelahCycling	Formula 1	,383	3	.	,755	3	,010
	Formula 2	,373	3	.	,780	3	,067
	Formula 3	,376	3	.	,772	3	,049
	Formula 4	,373	3	.	,778	3	,063

a. Lilliefors Significance Correction

Kruskal-Wallis Test

Ranks			
	SPF	N	Mean Rank
SebelumCycling	Formula 1	3	5,00
	Formula 2	3	8,00
	Formula 3	3	11,00
	Formula 4	3	2,00
	Total	12	
SetelahCycling	Formula 1	3	5,00
	Formula 2	3	8,00
	Formula 3	3	11,00
	Formula 4	3	2,00
	Total	12	

Test Statistics ^{a,b}		
	SebelumCycling	SetelahCycling
Kruskal-Wallis H	10,385	10,385
df	3	3
Asymp. Sig.	,016	,016

a. Kruskal Wallis Test

b. Grouping Variable: SPF

Wilcoxon Signed Ranks Test

Ranks		N	Mean Rank	Sum of Ranks
SetelahCycling - SebelumCycling	Negative Ranks	12 ^a	6,50	78,00
	Positive Ranks	0 ^b	,00	,00
	Ties	0 ^c		
	Total	12		

a. SetelahCycling < SebelumCycling

b. SetelahCycling > SebelumCycling

c. SetelahCycling = SebelumCycling

Test Statistics^a

SetelahCycling - SebelumCycling	
Z	-3,059 ^b
Asymp. Sig. (2-tailed)	,002

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

