L A M P I R A N

Lampiran 1. Hasil determinasi tanaman beras hitam

UNIVERSITAS SETIA BUDI

UPT-LABORATORIUM

UNIVERSITAS SETIA BUDI SURAKARTA

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Nomor : 24/DET/UPT-LAB/19.12.2022
Hal : Hasil determinasi tumbuhan
Lamp. : -

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Prodi : S1 Farmasi, Universitas Setia Budi, Surakarta.
Nama sampel : Beras Hitam /(*Oryza sativa* L. Indica)

HASIL DETERMINASI TUMBUHAN

Klasifikasi

Kingdom : Plantae
Super Divisi : Spermatophyta
Divisi : Magnoliophyta
Kelas : Monootyledoneae
Ordo : Glumiflorae/Poales
Famili : Gramineae/Poaceae
Genus : Oryza
Species : *Oryza sativa* L. Indica

Hasil Determinasi menurut C.A. Backer & R.C. Bakhuizen van den Brink Jr. (1963) dan Steenis :

1b – 2b – 3b – 4a – 5a – Fam. Graminae.

1b – 2c – 18b – 20a – 21b – 22b - *Oryza sativa* L. Indica.

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Deskripsi:

Habitus : Rumput berumpun kuat dan tegak , berumur 1 tahun, dari ruas keluar banyak batang yang berakar; tinggi sekitar 2 m.

Akar : Akar serabut. Akar yang tua berwarna kecoklatan, yang muda berwarna putih.

Batang : Batang berbentuk seperti pelepah daun, tersusun beberapa ruas. Setiap batang saling menopang dengan batang yang lain. Tinggi batang relatif pendek.

Daun : Daun tunggal; Pada daun terdapat sisik dan telinga daun. Daun dilengkapi dengan pelepah dan lidah daun. Helaian daun bentuk garis memanjang seperti pita, tulang daun sejajar. Panjang sekitar 80 cm, tepi kasar. Warna helaian agak keunguan.

Bunga : Bunga majemuk terdiri dari spikelet yang berbentuk malai. Bunga telanjang tanpa perhiasan bunga. Berkelamin dua jenis dengan bakal buah yang diatas. Jumlah benang sari ada 6 buah, tangkai sarinya pendek dan tipis, kepala sari besar serta mempunyai dua kandung serbuk. Putik mempunyai dua tangkai putik, dengan dua buah kepala putik yang berbentuk malai.

Buah : Buah berbentuk lonjong. Perikarp, aleuron dan endosperm berwarna merah-biru-ungu pekat, warna tersebut menunjukkan adanya kandungan antosianin.

Surakarta, 19 Desember 2022

Kepala UPT-LAB	Penanggung jawab
Universitas Setia Budi	Determinasi Tumbuhan
Asik Gunawan, Amdk	Dra. Dewi Sulistyawati. M.Sc.

Lampiran 2. Pesemaian dan pembuatan serbuk beras hitam

Proses semai tanaman

Pertumbuhan tanaman sebelum dideterminasi

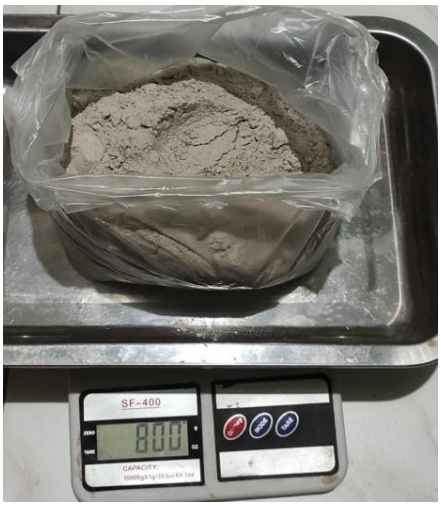
Beras hitam

Pengeringan pada oven 50°C

Penggilingan

Serbuk diayak dengan mesh no 40

Lampiran 3. Pembuatan ekstrak etanol beras hitam



Penimbangan serbuk sebelum di ekstraksi

Ekstraksi maserasi dalam botol bejana maserasi

Ekstrak dipekatkan dengan *rotatory evaporator*

Ekstrak kental

Lampiran 4. Hasil penetapan rendemen simplisia

Perhitungan rendemen bobot serbuk terhadap bobot kering

$$\%Rendemen = \frac{serbuk\ halus}{serbuk\ kering} \text{x} 100\% = \frac{1716}{2000} \text{x} 100\% = 85{,}8\%$$

Lampiran 5. Hasil penetapan susut pengeringan serbuk dengan *moisture balance*

Replikasi	Bobot serbuk (g)	Susut pengeringan (%)
1	2,10	7,5
2	2,05	6,5
3	2,07	6,5
Rata-rata ± SD		6,83 ± 0,58

Rata-rata susut pengeringan = $\frac{\text{Replikasi 1+replikasi 2+replikasi 3}}{3}$

$= \frac{7,5+6,5+6,5}{3}$

Rata-rata±SD = 6,83±0,58

% Susut pengeringan = 6,83 %

Lampiran 6. Hasil penetapan kadar air serbuk



Perhitungan kadar air serbuk dengan metode *Sterling bidwell*

Replikasi	Berat serbuk (g)	Volume terbaca (mL)	Kadar air (%)
1	20,002	1,3	6,49
2	20,004	1,5	7,49
3	20,002	1,4	6,99
Rata-rata ± SD			6,99 ± 0,76

$$\%kadar\ air = \frac{volume\ terbaca}{bobot\ sampel} \text{x} 100\% =$$

Replikasi 1= $\%kadar\ air = \frac{1{,}3\ mL}{20{,}002\ gram} \text{x} 100\% = 6{,}49\ \%$

Replikasi 2= $\%kadar\ air = \frac{1{,}5\ mL}{20{,}004\ gram} \text{x} 100\% = 7{,}49\%$

Replikasi 3 = $\%kadar\ air = \frac{1{,}4{,}mL}{20{,}002\ gram} \text{x} 100\% = 6{,}99\%$

$= \frac{6{,}49 + 7{,}49 + 6{,}99}{3}$

Rata-rata±SD = 6,99 $\pm$0,76

% Kadar air = 6,99 %

Lampiran 7. Hasil penetapan kadar air ekstrak

Oven suhu 105°C

Desikator

Pengeringan ekstrak dalam oven

Replikasi 1

Replikasi 2

Replikasi 3

- Perhitungan kadar air ekstrak dengan metode gravimetri

Replikasi 1

Bobot kurs kosong = 40,071 g

Bobot kurs + ekstrak = 50,072 g

Bobot ekstrak = 50,072 g - 40,071 g

= 10,001 g

Bobot kurs + ekstrak setelah pemanasan (bobot kurs mengalami penyusutan)

= 40,944 g – 40,071 g

= 0,823 g

% kadar lembab ekstrak $= \frac{Bobot\ konstan}{Bobot\ awal} \times 100\%$

$= \frac{0{,}823\ g}{10{,}001\ g} \times 100\%$

= 8,23%

Replikasi 2

Bobot kurs kosong = 43,058 g

Bobot kurs + ekstrak = 53,061 g

Bobot ekstrak = 53,061 g – 43,058 g

= 10,003 g

Bobot kurs + ekstrak setelah pemanasan (bobot kurs mengalami penyusutan)

= 43,864 g – 43,058 g

= 0,806 g

% kadar lembab ekstrak $= \frac{Bobot\ konstan}{Bobot\ awal} \times 100\%$

$= \frac{0{,}806\ g}{10{,}003\ g} \times 100\%$

= 8,06%

Replikasi 3

Bobot kurs kosong = 42,305 g

Bobot kurs + ekstrak = 52,310 g

Bobot ekstrak = 52,310 g - 42,305 g

= 10,005 g

Bobot kurs + ekstrak setelah pemanasan (bobot kurs mengalami penyusutan)

= 43,127 g – 42,305 g

= 0,822 g

% kadar lembab ekstrak $= \frac{Bobot\ konstan}{Bobot\ awal} \times 100\%$

$= \frac{0{,}822\ g}{10{,}005\ g} \times 100\%$

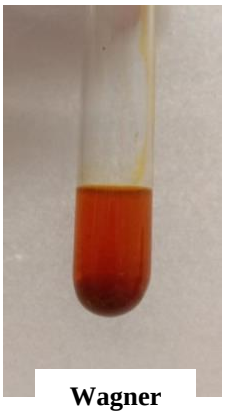
= 8,22%

Rata-rata = 8,23% + 8,06% + 8,22% ÷ 3

= 8,17±0,1

Lampiran 8. Hasil uji skrining fitokimia

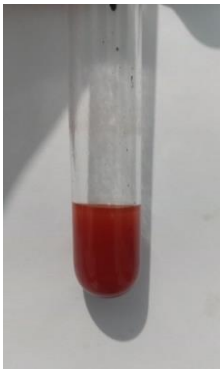
Alkaloid



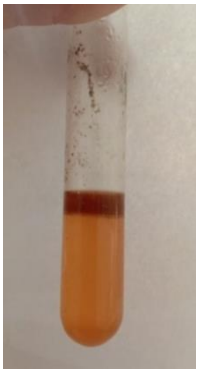
Wagner

Dragendorff

Mayer



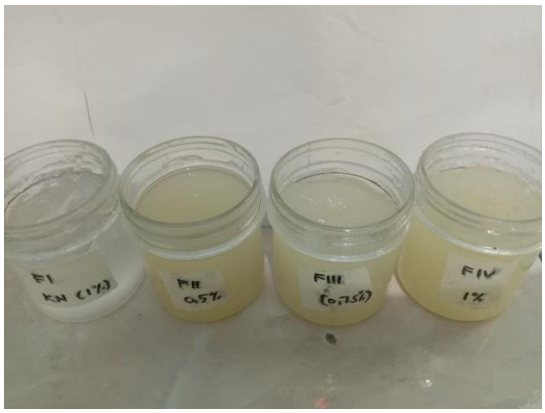
Antosianin



Flavonoid

Tanin

Lampiran 9. Hasil uji mutu fisik sediaan gel ekstrak etanol beras hitam



Uji homogenitas

Viskometer Rion

Uji pH dengan universal test paper

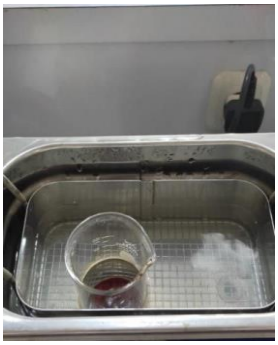
Uji daya sebar

Uji daya lekat

Uji stabilitas (Suhu kulkas)

Lampiran 10. Hasil uji SPF

Penimbangan sampel



Ultrasonikasi ekstrak

Larutan uji

Wardah SPF 30 PA++ (kontrol positif)

Sampel dianalisis dengan spektrofotometer UV *Vis*

Lampiran 11. Hasil analisis SPSS uji viskositas gel ekstrak etanol beras hitam

Replikasi	Viskositas (dPa.S)			
	Formula 1	Formula 2	Formula 3	Formula 4
1	390	250	320	350
2	380	230	300	330
3	370	220	310	340
Rata-rata	380	233,3	310	340
SD	10	15,27	10	10

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok_perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
Uji_Viskositas	kontrol negatif	,175	3	.	1,000	3	1,000
	karbopol 0,5%	,253	3	.	,964	3	,637
	karbopol 0,75%	,175	3	.	1,000	3	1,000
	karbopol 1%	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

ANOVA

Uji_Viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34625,000	3	11541,667	86,562	,000
Within Groups	1066,667	8	133,333		
Total	35691,667	11			

Test of Homogeneity of Variances

Uji_Viskositas

Levene Statistic	df1	df2	Sig.
,400	3	8	,757

Multiple Comparisons

Dependent Variable: Uji_Viskositas

Dunnett T3

(I) Kelompok_perlakuan	(J) Kelompok_perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
kontrol negatif	karbopol 0,5%	146,667*	10,541	,002	96,50	196,83
	karbopol 0,75%	70,000*	8,165	,004	34,35	105,65
	karbopol 1%	40,000*	8,165	,034	4,35	75,65
karbopol 0,5%	kontrol negatif	-146,667*	10,541	,002	-196,83	-96,50
	karbopol 0,75%	-76,667*	10,541	,013	-126,83	-26,50
	karbopol 1%	-106,667*	10,541	,004	-156,83	-56,50
karbopol 0,75%	kontrol negatif	-70,000*	8,165	,004	-105,65	-34,35
	karbopol 0,5%	76,667*	10,541	,013	26,50	126,83
	karbopol 1%	-30,000	8,165	,087	-65,65	5,65
karbopol 1%	kontrol negatif	-40,000*	8,165	,034	-75,65	-4,35
	karbopol 0,5%	106,667*	10,541	,004	56,50	156,83
	karbopol 0,75%	30,000	8,165	,087	-5,65	65,65

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

Lampiran 12. Hasil analisis SPSS uji *p*H gel ekstrak etanol beras hitam

Replikasi	*p*H			
	Formula 1	Formula 2	Formula 3	Formula 4
1	5	6	6,5	6
2	5	6,5	6	6
3	5	6	6	5,5
Rata-rata	5	6,17	6,17	5,83
SD	0	0,28	0,29	0,29

Tests of Normality[a]

		Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Kelompok_perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
Uji_pH	karbopol 0,5%	,385	3	.	,750	3	,000
	karbopol 0,75%	,385	3	.	,750	3	,000
	karbopol 1%	,385	3	.	,750	3	,000

a. Uji_pH is constant when Kelompok_perlakuan = kontrol negatiF. It has been omitted.
b. Lilliefors Significance Correction

ANOVA

Uji_pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,063	3	1,021	16,333	,001
Within Groups	,500	8	,063		
Total	3,563	11			

Test of Homogeneity of Variances

Uji_pH

Levene Statistic	df1	df2	Sig.
5,333	3	8	,026

Multiple Comparisons

Dependent Variable: Uji_pH

Dunnett T3

(I) Kelompok perlakuan	(J) Kelompok perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
kontrol negatif	karbopol 0,5%	-1,16667	,16667	,059	-2,4409	,1076
	karbopol 0,75%	-1,16667	,16667	,059	-2,4409	,1076
	karbopol 1%	-1,16667	,16667	,059	-2,4409	,1076
karbopol 0,5%	kontrol negatif	1,16667	,16667	,059	-,1076	2,4409
	karbopol 0,75%	,00000	,23570	1,000	-1,0291	1,0291
	karbopol 1%	,00000	,23570	1,000	-1,0291	1,0291
karbopol 0,75%	kontrol negatif	1,16667	,16667	,059	-,1076	2,4409
	karbopol 0,5%	,00000	,23570	1,000	-1,0291	1,0291
	karbopol 1%	,00000	,23570	1,000	-1,0291	1,0291
karbopol 1%	kontrol negatif	1,16667	,16667	,059	-,1076	2,4409
	karbopol 0,5%	,00000	,23570	1,000	-1,0291	1,0291
	karbopol 0,75%	,00000	,23570	1,000	-1,0291	1,0291

Lampiran 13. Hasil analisis SPSS uji daya lekat gel ekstrak etanol beras hitam

Replikasi	Daya lekat (detik)			
	Formula 1	**Formula 2**	**Formula 3**	**Formula 4**
1	4,36	2,46	3,83	4,15
2	4,4	2,5	3,72	4,09
3	4,35	2,51	3,78	4,13
Rata-rata	4,37	2,49	3,77	4,12
SD	0,03	0,03	0,05	0,03

Tests of Normality

	Kelompok Perlakuan	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Uji Daya Lekat	Basis	,253	3	.	,964	3	,637
	Formula 1 karbopol 0,5%	,314	3	.	,893	3	,363
	Fromula 2 karbopol 0,75%	,191	3	.	,997	3	,900
	Formula 3 karbopol 1%	,314	3	.	,893	3	,363

a. Lilliefors Significance Correction

ANOVA

Uji_Daya_Lekat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,293	3	2,098	1563,495	,000
Within Groups	,011	8	,001		
Total	6,304	11			

Test of Homogeneity of Variances

Uji_Daya_Lekat

Levene Statistic	df1	df2	Sig.
,688	3	8	,584

Multiple Comparisons

Dependent Variable: Uji_Daya_Lekat

Dunnett T3

(I) Kelompok Perlakuan	(J) Kelompok Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basis	Formula 1 karbopol 0,5%	1,63333*	,02333	,000	1,5303	1,7363
	Fromula 2 karbopol 0,75%	,34667*	,03636	,008	,1619	,5315
	Formula 3 karbopol 1%	-,24667*	,02333	,002	-,3497	-,1437
Formula 1 karbopol 0,5%	Basis	-1,63333*	,02333	,000	-1,7363	-1,5303
	Fromula 2 karbopol 0,75%	-1,28667*	,03528	,000	-1,4772	-1,0961
	Formula 3 karbopol 1%	-1,88000*	,02160	,000	-1,9743	-1,7857
Fromula 2 karbopol 0,75%	Basis	-,34667*	,03636	,008	-,5315	-,1619
	Formula 1 karbopol 0,5%	1,28667*	,03528	,000	1,0961	1,4772
	Formula 3 karbopol 1%	-,59333*	,03528	,002	-,7839	-,4028
Formula 3 karbopol 1%	Basis	,24667*	,02333	,002	,1437	,3497
	Formula 1 karbopol 0,5%	1,88000*	,02160	,000	1,7857	1,9743
	Fromula 2 karbopol 0,75%	,59333*	,03528	,002	,4028	,7839

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

Lampiran 14. Hasil analisis SPSS uji daya sebar gel ekstrak etanol beras hitam

Beban (gram)	Replikasi	Daya sebar (cm)			
		Formula 1	Formula 2	Formula 3	Formula 4
0	1	4,4	5,2	5,1	4,9
	2	4,5	5,4	5	4,7
	3	4,6	5,3	5,2	4,8
	Rata-rata	4,5	5,3	5,1	4,8
	SD	0,1	0,1	0,1	0,1
50	1	4,8	5,9	5,8	5,3
	2	4,9	6,1	5,7	5,4
	3	5	6	5,9	5,5
	Rata-rata	4,9	6	5,8	5,4
	SD	0,1	0,1	0,1	0,1
100	1	5,5	6,3	6,2	5,7
	2	5,7	6,5	6,1	5,9
	3	5,6	6,4	6,3	5,8
	Rata-rata	5,6	6,4	6,2	5,8
	SD	0,1	0,1	0,1	0,1
150	1	5,8	6,7	6,5	6,1
	2	6,1	6,9	6,4	6,3
	3	5,9	6,8	6,6	6,2
	Rata-rata	5,93	6,8	6,5	6,2
	SD	0,15	0,1	0,1	0,1

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok_Perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
Tanpa_beban	Basis	,175	3	.	1,000	3	1,000
	Formula 1 karbopol 0,5%	,175	3	.	1,000	3	1,000
	Formula 2 karbopol 0,75%	,175	3	.	1,000	3	1,000
	Formula karbopol 1%	,175	3	.	1,000	3	1,000
Beban_50g	Basis	,175	3	.	1,000	3	1,000
	Formula 1 karbopol 0,5%	,175	3	.	1,000	3	1,000
	Formula 2 karbopol 0,75%	,175	3	.	1,000	3	1,000
	Formula karbopol 1%	,175	3	.	1,000	3	1,000
Beban_100g	Basis	,175	3	.	1,000	3	1,000
	Formula 1 karbopol 0,5%	,175	3	.	1,000	3	1,000
	Formula 2 karbopol 0,75%	,175	3	.	1,000	3	1,000
	Formula karbopol 1%	,175	3	.	1,000	3	1,000
Beban_150g	Basis	,175	3	.	1,000	3	1,000
	Formula 1 karbopol 0,5%	,175	3	.	1,000	3	1,000
	Formula 2 karbopol 0,75%	,175	3	.	1,000	3	1,000
	Formula karbopol 1%	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Tanpa beban	Between Groups	1,103	3	,368	36,750	,000
	Within Groups	,080	8	,010		
	Total	1,183	11			
Beban 50g	Between Groups	2,123	3	,708	70,750	,000
	Within Groups	,080	8	,010		
	Total	2,203	11			
Beban 100g	Between Groups	1,200	3	,400	40,000	,000
	Within Groups	,080	8	,010		
	Total	1,280	11			
Beban 150g	Between Groups	1,263	3	,421	31,563	,000
	Within Groups	,107	8	,013		
	Total	1,369	11			

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Tanpa_beban	,000	3	8	1,000
Beban_50g	,000	3	8	1,000
Beban_100g	,000	3	8	1,000
Beban_150g	,400	3	8	,757

Multiple Comparisons

Dunnett T3

Dependent Variable	(I) Kelompok_Perlakuan	(J) Kelompok Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tanpa beban	Basis	Formula 1 karbopol 0,5%	-,5000*	,0816	,015	-,856	-,144
		Formula 2 karbopol 0,75%	-,3000	,0816	,087	-,656	,056
		Formula karbopol 1%	,3000	,0816	,087	-,056	,656
	Formula 1 karbopol 0,5%	Basis	,5000*	,0816	,015	,144	,856
		Formula 2 karbopol 0,75%	,2000	,0816	,262	-,156	,556
		Formula karbopol 1%	,8000*	,0816	,003	,444	1,156
	Formula 2 karbopol 0,75%	Basis	,3000	,0816	,087	-,056	,656
		Formula 1 karbopol 0,5%	-,2000	,0816	,262	-,556	,156

		Formula karbopol 1%	,6000*	,0816	,008	,244	,956
	Formula karbopol 1%	Basis	-,3000	,0816	,087	-,656	,056
		Formula 1 karbopol 0,5%	-,8000*	,0816	,003	-1,156	-,444
		Formula 2 karbopol 0,75%	-,6000*	,0816	,008	-,956	-,244
Beban_50g	Basis	Formula 1 karbopol 0,5%	-,6000*	,0816	,008	-,956	-,244
		Formula 2 karbopol 0,75%	-,4000*	,0816	,034	-,756	-,044
		Formula karbopol 1%	,5000*	,0816	,015	,144	,856
	Formula 1 karbopol 0,5%	Basis	,6000*	,0816	,008	,244	,956
		Formula 2 karbopol 0,75%	,2000	,0816	,262	-,156	,556
		Formula karbopol 1%	1,1000*	,0816	,001	,744	1,456
	Formula 2 karbopol 0,75%	Basis	,4000*	,0816	,034	,044	,756
		Formula 1 karbopol 0,5%	-,2000	,0816	,262	-,556	,156
		Formula karbopol 1%	,9000*	,0816	,002	,544	1,256
	Formula karbopol 1%	Basis	-,5000*	,0816	,015	-,856	-,144
		Formula 1 karbopol 0,5%	-1,1000*	,0816	,001	-1,456	-,744
		Formula 2 karbopol 0,75%	-,9000*	,0816	,002	-1,256	-,544
Beban_100g	Basis	Formula 1 karbopol 0,5%	-,6000*	,0816	,008	-,956	-,244
		Formula 2 karbopol 0,75%	-,4000*	,0816	,034	-,756	-,044
		Formula karbopol 1%	,2000	,0816	,262	-,156	,556
	Formula 1 karbopol 0,5%	Basis	,6000*	,0816	,008	,244	,956
		Formula 2 karbopol 0,75%	,2000	,0816	,262	-,156	,556
		Formula karbopol 1%	,8000*	,0816	,003	,444	1,156
	Formula 2 karbopol 0,75%	Basis	,4000*	,0816	,034	,044	,756
		Formula 1 karbopol 0,5%	-,2000	,0816	,262	-,556	,156
		Formula karbopol 1%	,6000*	,0816	,008	,244	,956

	Formula karbopol 1%	Basis	-,2000	,0816	,262	-,556	,156
		Formula 1 karbopol 0,5%	-,8000*	,0816	,003	-1,156	-,444
		Formula 2 karbopol 0,75%	-,6000*	,0816	,008	-,956	-,244
Beban_150 g	Basis	Formula 1 karbopol 0,5%	-,6000*	,0816	,008	-,956	-,244
		Formula 2 karbopol 0,75%	-,3000	,0816	,087	-,656	,056
		Formula karbopol 1%	,2667	,1054	,263	-,235	,768
	Formula 1 karbopol 0,5%	Basis	,6000*	,0816	,008	,244	,956
		Formula 2 karbopol 0,75%	,3000	,0816	,087	-,056	,656
		Formula karbopol 1%	,8667*	,1054	,009	,365	1,368
	Formula 2 karbopol 0,75%	Basis	,3000	,0816	,087	-,056	,656
		Formula 1 karbopol 0,5%	-,3000	,0816	,087	-,656	,056
		Formula karbopol 1%	,5667*	,1054	,035	,065	1,068
	Formula karbopol 1%	Basis	-,2667	,1054	,263	-,768	,235
		Formula 1 karbopol 0,5%	-,8667*	,1054	,009	-1,368	-,365
		Formula 2 karbopol 0,75%	-,5667*	,1054	,035	-1,068	-,065

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

Lampiran 15. Hasil analisis SPSS uji SPF sediaan gel tabir surya ekstrak etanol beras hitam

15.1 Pengenceran sampel uji ekstrak

$V_1C_1 = V_2C_2$

2,5 mL x 3600*ppm* = 10 mL x C_2

$C_2 = \frac{2{,}5\ mL\ x\ 3600\ ppm}{10mL}$

C_2 = 900 *ppm* (konsentrasi yang diperoleh)

15.2 Pengenceran kontrol positif dan sediaan gel tabir surya ekstrak etanol beras hitam

$V_1C_1 = V_2C_2$

1 mL x 1000 *ppm* = 10 mL x C_2

$C_2 = \frac{1\ mL\ x\ 1000\ ppm}{10 mL}$

C_2 =100 *ppm* (konsentrasi yang diperoleh)

1. Kontrol positif (Wardah SPF 30 PA ++)

Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,5650	0,008475				
295	0,0817	0,5489	0,0448451				
300	0,2874	0,5219	0,1499941				
305	0,3278	0,4886	0,1601631		0,7038728	10	30
310	0,1864	0,4503	0,0839359				
315	0,0839	0,4094	0,0343487				
320	0,0180	0,3779	0,0068022				
			0,4885641				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,5662	0,008493				
295	0,0817	0,5502	0,0449513				
300	0,2874	0,5234	0,1504252				
305	0,3278	0,4903	0,1607203		0,6466053	10	30
310	0,1864	0,4515	0,0841596				
315	0,0839	0,4104	0,0344326				
320	0,0180	0,3787	0,0068166				
			0,4899986				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,5657	0,0087855				
295	0,0817	0,5496	0,0449023				
300	0,2874	0,5226	0,1501952				
305	0,3278	0,4896	0,1604909		0,6423865	10	30
310	0,1864	0,4510	0,0840664				
315	0,0839	0,4098	0,0343822				
320	0,0180	0,3782	0,0068076				
			0,4896302				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
30	CF	0,48963016	10	
30	CF	4,8963016		
CF =				
R1	6,14044			
R2	6,12247	RATA-RATA	6,1299	**PROTEKSI EKSTRA**
R3	6,12707			
		SD	0,00934	

2. Nilai SPF ekstrak etanol beras hitam

Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,4208	0,006312				
295	0,0817	0,3990	0,0325983				
300	0,2874	0,3727	0,10711398				
305	0,3278	0,3668	0,12023704	6,1299	0,35655956	10	
310	0,1864	0,3305	0,0616052				
315	0,0839	0,2896	0,02429744				
320	0,0180	0,2442	0,0043956				
			0,35655956				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,4214	0,006321				
295	0,0817	0,3997	0,03265549				
300	0,2874	0,3730	0,1072002				
305	0,3278	0,3671	0,12033538	6,1299	0,35700486	10	
310	0,1864	0,3311	0,06171704				
315	0,0839	0,2905	0,02437295				
320	0,0180	0,2446	0,0044028				
			0,35700486				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,4220	0,00633				
295	0,0817	0,4009	0,03275353				
300	0,2874	0,3736	0,10737264				
305	0,3278	0,3684	0,12076152	6,1299	0,35790689	10	
310	0,1864	0,3318	0,06184752				
315	0,0839	0,2912	0,02443168				
320	0,0180	0,2450	0,00441				
			0,35790689				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,35790689	10	
R 1	21,8567			
R 2	21,8840	**RATA - RATA**	21,89337	**PROTEKSI ULTRA**
R 3	21,9393			
		SD	0,04208	

3. Formula 1 (kontrol negatif) Sebelum stabilitas
Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,0155	0,0002325				
295	0,0817	0,0132	0,00107844				
300	0,2874	0,0119	0,00342006				
305	0,3278	0,0103	0,00337634	6,1299	0,09589062	10	
310	0,1864	0,0081	0,00150984				
315	0,0839	0,0074	0,00062086				
320	0,0180	0,0063	0,0001134				
			0,01035144				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,0146	0,000222				
295	0,0817	0,0120	0,00102942				
300	0,2874	0,0113	0,00324762				
305	0,3278	0,0094	0,00308132	6,1299	0,07963918	10	
310	0,1864	0,0075	0,001398				
315	0,0839	0,0069	0,00057891				
320	0,0180	0,0056	0,0001008				
			0,00965807				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,0149	0,0002205				
295	0,0817	0,0122	0,00099674				
300	0,2874	0,0112	0,00321888				
305	0,3278	0,0096	0,00314688	6,1299	0,0860985	10	
310	0,1864	0,0078	0,00137936				
315	0,0839	0,0065	0,00054535				
320	0,0180	0,0059	0,0001026				
			0,00961031				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,00961031	10	
R 1	0,6345			
R 2	0,5920	**RATA - RATA**	0,605	**TIDAK BERPOTENSI**
R 3	0,5891			
		SD	0,02543	

4. Formula 2 (karbopol 0,5%)
Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3044	0,004566				
295	0,0817	0,3098	0,02531066				
300	0,2874	0,2888	0,08300112				
305	0,3278	0,2663	0,08729314	6,1299	0,26160277	10	
310	0,1864	0,2292	0,04272288				
315	0,0839	0,1883	0,01579837				
320	0,0180	0,1617	0,0029106				
			0,26160277				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3051	0,0045765				
295	0,0817	0,3104	0,02535968				
300	0,2874	0,2894	0,08317356				
305	0,3278	0,2671	0,08755538	6,1299	0,26234085	10	
310	0,1864	0,2301	0,04289064				
315	0,0839	0,1891	0,01586549				
320	0,0180	0,1622	0,0029196				
			0,26234085				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3058	0,004587				
295	0,0817	0,3109	0,02540053				
300	0,2874	0,2897	0,08325978				
305	0,3278	0,2677	0,08447406	6,1299	0,25952261	10	
310	0,1864	0,2305	0,0429652				
315	0,0839	0,1896	0,01590744				
320	0,0180	0,1627	0,0029286				
			0,25952261				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,00961031	10	
R 1	16,0360			
R 2	16,0812	**RATA - RATA**	16,009	**PROTEKSI ULTRA**
R 3	15,9085			
		SD	0,08958	

5. Formula 3 (karbopol 0,75%)
Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3188	0,004782				
295	0,0817	0,3024	0,02470608				
300	0,2874	0,2877	0,08268498				
305	0,3278	0,2691	0,08821098	6,1299	0,26394077	10	
310	0,1864	0,2362	0,04402768				
315	0,0839	0,1955	0,01640245				
320	0,0180	0,1737	0,0031266				
			0,26394077				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3201	0,0048015				
295	0,0817	0,3036	0,02480412				
300	0,2874	0,2889	0,08302986				
305	0,3278	0,2698	0,08844044	6,1299	0,26491741	10	
310	0,1864	0,2373	0,04423272				
315	0,0839	0,1963	0,01646957				
320	0,0180	0,1744	0,0031392				
			0,26491741				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3196	0,004794				
295	0,0817	0,3029	0,02474693				
300	0,2874	0,2884	0,08288616				
305	0,3278	0,2694	0,08830932	6,1299	0,26455783	10	
310	0,1864	0,2368	0,04413952				
315	0,0839	0,1970	0,0165283				
320	0,0180	0,1752	0,0031536				
			0,26455783				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,26455783	10	
R 1	16,4591			
R 2	16,5392	**RATA - RATA**	16,505	**PROTEKSI ULTRA**
R 3	16,5191			
		SD	0,03028	

6. Formula 4 (karbopol 1%)
Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3315	0,0049725				
295	0,0817	0,3101	0,02533517				
300	0,2874	0,2817	0,08096058				
305	0,3278	0,2761	0,09050558	6,1299	0,26842084	10	
310	0,1864	0,2488	0,04637632				
315	0,0839	0,2011	0,01687229				
320	0,0180	0,1888	0,0033984				
			0,26842084				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3328	0,004992				
295	0,0817	0,3113	0,02543321				
300	0,2874	0,2823	0,08113302				
305	0,3278	0,2768	0,09073504	6,1299	0,26918764	10	
310	0,1864	0,2495	0,0465068				
315	0,0839	0,2023	0,01697297				
320	0,0180	0,1897	0,0034146				
			0,26918764				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,3341	0,0050115				
295	0,0817	0,3122	0,02550674				
300	0,2874	0,2831	0,08136294				
305	0,3278	0,2774	0,09093172	6,1299	0,26997153	10	
310	0,1864	0,2504	0,04667456				
315	0,0839	0,2033	0,01705687				
320	0,0180	0,1904	0,0034272				
			0,26997153				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,26997153	10	
R 1	16,8539			
R 2	16,8009	**RATA - RATA**	16,801	**PROTEKSI ULTRA**
R 3	16,7490			
		SD	0,05	

Tests of Normality

	Kelompok_Perlakuan	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Uji_SPF	Kontrol negatif	,365	3	.	,798	3	,110
	Formula I karbopol 0,5%	,285	3	.	,932	3	,497
	Formula II karbopol 0,75%	,276	3	.	,942	3	,537
	Formula III karbopol 1%	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

ANOVA

Uji_SPF

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	832,831	3	277,610	62734,733	,000
Within Groups	,035	8	,004		
Total	832,866	11			

Test of Homogeneity of Variances

Uji_SPF

Levene Statistic	df1	df2	Sig.
2,331	3	8	,151

Multiple Comparisons

Dependent Variable: Uji_SPF

Dunnett T3

(I) Kelompok Perlakuan	(J) Kelompok_Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol negatif	Formula I karbopol 0,5%	-18,94693*	,06532	,000	-19,3714	-18,5225
	Formula II karbopol 0,75%	-19,19560*	,02754	,000	-19,3172	-19,0740
	Formula III karbopol 1%	-19,55560*	,03905	,000	-19,7595	-19,3517
Formula I karbopol 0,5%	Kontrol negatif	18,94693*	,06532	,000	18,5225	19,3714
	Formula II karbopol 0,75%	-,24867	,06614	,150	-,6604	,1631

	Formula III karbopol 1%	-,60867*	,07171	,011	-,9739	-,2434
Formula II karbopol 0,75%	Kontrol negatif	19,19560*	,02754	,000	19,0740	19,3172
	Formula I karbopol 0,5%	,24867	,06614	,150	-,1631	,6604
	Formula III karbopol 1%	-,36000*	,04041	,008	-,5588	-,1612
Formula III karbopol 1%	Kontrol negatif	19,55560*	,03905	,000	19,3517	19,7595
	Formula I karbopol 0,5%	,60867*	,07171	,011	,2434	,9739
	Formula II karbopol 0,75%	,36000*	,04041	,008	,1612	,5588

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

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok_Perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
Uji_SPF	Kontrol negatif	,365	3	.	,798	3	,110
	Formula I karbopol 0,5%	,285	3	.	,932	3	,497
	Formula II karbopol 0,75%	,276	3	.	,942	3	,537
	Formula III karbopol 1%	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Uji_SPF

Levene Statistic	df1	df2	Sig.
2,331	3	8	,151

ANOVA

Uji_SPF

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	832,831	3	277,610	62734,733	,000
Within Groups	,035	8	,004		
Total	832,866	11			

Multiple Comparisons

Dependent Variable: Uji_SPF

Dunnett T3

(I) Kelompok Perlakuan	(J) Kelompok_Perlakuan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol negatif	Formula I karbopol 0,5%	-18,94693*	,06532	,000	-19,3714	-18,5225
	Formula II karbopol 0,75%	-19,19560*	,02754	,000	-19,3172	-19,0740
	Formula III karbopol 1%	-19,55560*	,03905	,000	-19,7595	-19,3517
Formula I karbopol 0,5%	Kontrol negatif	18,94693*	,06532	,000	18,5225	19,3714
	Formula II karbopol 0,75%	-,24867	,06614	,150	-,6604	,1631
	Formula III karbopol 1%	-,60867*	,07171	,011	-,9739	-,2434
Formula II karbopol 0,75%	Kontrol negatif	19,19560*	,02754	,000	19,0740	19,3172
	Formula I karbopol 0,5%	,24867	,06614	,150	-,1631	,6604
	Formula III karbopol 1%	-,36000*	,04041	,008	-,5588	-,1612
Formula III karbopol 1%	Kontrol negatif	19,55560*	,03905	,000	19,3517	19,7595
	Formula I karbopol 0,5%	,60867*	,07171	,011	,2434	,9739
	Formula II karbopol 0,75%	,36000*	,04041	,008	,1612	,5588

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

Lampiran 16. Hasil analisis SPSS stabilitas viskositas gel ekstrak etanol beras hitam

Replikasi	Viskositas (dPa.S)							
	Sebelum *cycling test*				Sesudah *cycling test*			
	F1	F2	F3	F4	F1	F2	F3	F4
1	390	250	320	350	380	220	290	330
2	380	230	300	330	370	210	290	320
3	370	220	310	340	370	210	280	310
Rata-rata	380	233,333	310	340	373,333	213,333	286,667	320
SD	10	15,2753	10	10	5,7735	5,7735	5,7735	10

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Basis sebelum sediaan	,385	3	.	,750	3	,000
Basis sesudah sediaan	,385	3	.	,750	3	,000
Formula 1 sebelum sediaan	,219	3	.	,987	3	,780
Formula 1 sesudah sediaan	,253	3	.	,964	3	,637
Formula 2 sebelum sediaan	,219	3	.	,987	3	,780
Formula 2 sesudah sediaan	,253	3	.	,964	3	,637
Formula 3 sebelum sediaan	,292	3	.	,923	3	,463
Formula 3 sesudah sediaan	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Basis sebelum sediaan - Basis sesudah sediaan	6,66667	5,77350	3,33333	-7,67551	21,00884	2,000	2	,184
Pair 2	Formula 1 sebelum sediaan - Formula 1 sesudah sediaan	20,00000	10,00000	5,77350	-4,84138	44,84138	3,464	2	,074
Pair 3	Formula 2 sebelum sediaan - Formula 2 sesudah sediaan	23,33333	11,54701	6,66667	-5,35102	52,01768	3,500	2	,073
Pair 4	Formula 3 sebelum sediaan - Formula 3 sesudah sediaan	20,00000	10,00000	5,77350	-4,84138	44,84138	3,464	2	,074

Lampiran 17. Hasil analisis SPSS stabilitas pH gel ekstrak etanol beras hitam

Replikasi	*p*H							
	Sebelum *cycling test*				Sesudah *cycling test*			
	F1	F2	F3	F4	F1	F2	F3	F4
1	5	6	6,5	6	4,5	5	6	5
2	5	6,5	6	6	4,5	6	5	5,5
3	5	6	6	5,5	5	5	5	5
Rata-rata	5	6,17	6,17	5,83	4,67	5,33	5,33	5,17
SD	0	0,29	0,28	0,29	0,29	5,77	0,57	0,29

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Basis sebelum stabilitas - Basis sesudah stabilitas	,33333	,28868	,16667	-,38378	1,05044	2,000	2	,184
Pair 2	Formula 1 sebelum stabilitas - Formula 1 sesudah stabilitas	,83333	,28868	,16667	,11622	1,55044	5,000	2	,038
Pair 3	Formula 2 sebelum stabilitas - Formula 2 sesudah stabilitas	,83333	,28868	,16667	,11622	1,55044	5,000	2	,038
Pair 4	Formula 3 sebelum stabilitas - Formula 3 sesudah stabilitas	,83333	,28868	,16667	,11622	1,55044	5,000	2	,038

Lampiran 18. Hasil analisis SPSS stabilitas daya lekat gel ekstrak etanol beras hitam

Replikasi	Daya Lekat (cm)							
	Sebelum *cycling test*				Sesudah *cycling test*			
	F1	F2	F3	F4	F1	F2	F3	F4
1	4,36	2,46	3,83	4,15	4,25	2,23	3,59	4,07
2	4,4	2,5	3,72	4,09	4,21	2,37	3,63	3,89
3	4,35	2,51	3,78	4,13	4,27	2,43	3,58	4,01
Rata-rata	4,37	2,49	3,77	4,12	4,24	2,41	3,6	3,99
SD	0,03	0,03	0,06	0,03	0,03	5,77	0,03	0,09

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Basis sebelum stabilitas	,253	3	.	,964	3	,637
Basis sesudah stabilitas	,253	3	.	,964	3	,637
Formula 1 sebelum stabilitas	,314	3	.	,893	3	,363
Formula 1 sesudah stabilitas	,304	3	.	,907	3	,407
Formula 2 sebelum stabilitas	,191	3	.	,997	3	,900
Formula 2 sesudah stabilitas	,314	3	.	,893	3	,363
Formula 3 sebelum stabilitas	,314	3	.	,893	3	,363
Formula 3 sesudah stabilitas	,253	3	.	,964	3	,637

a. Lilliefors Significance Correction

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Basis sebelum stabilitas - Basis sesudah stabilitas	,13333	,06110	,03528	-,01845	,28512	3,780	2	,063
Pair 2	Formula 1 sebelum stabilitas - Formula 1 sesudah stabilitas	,15333	,06807	,03930	-,01576	,32243	3,902	2	,060
Pair 3	Formula 2 sebelum stabilitas - Formula 2 sesudah stabilitas	,17667	,07767	,04485	-,01629	,36962	3,939	2	,059
Pair 4	Formula 3 sebelum stabilitas - Formula 3 sesudah stabilitas	,12667	,05686	,03283	-,01459	,26792	3,858	2	,061

Lampiran 19. Hasil analisis SPSS stabilitas daya sebar gel ekstrak etanol beras hitam

Beban (gram)	Replikasi	Daya sebar (cm)							
		Sebelum *cycling test*				Sesudah *cycling test*			
		F1	F2	F3	F4	F1	F2	F3	F4
0	1	4,4	5,2	5,1	4,9	4,7	5,4	5,3	5,1
	2	4,5	5,4	5	4,7	4,6	5,5	5,2	5
	3	4,6	5,3	5,2	4,8	4,8	5,6	5,4	4,9
	Rata-rata	4,5	5,3	5,1	4,8	4,7	5,5	5,3	5
	SD	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
50	1	4,8	5,9	5,8	5,3	5,1	6,1	6,1	5,5
	2	4,9	6,1	5,7	5,4	5	6,2	5,9	5,7
	3	5	6	5,9	5,5	5,2	6,3	6	5,6
	Rata-rata	4,9	6	5,8	5,4	5,1	6,2	6	5,6
	SD	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
100	1	5,5	6,3	6,2	5,7	5,7	6,5	6,3	5,9
	2	5,7	6,5	6,1	5,9	5,8	6,6	6,4	6
	3	5,6	6,4	6,3	5,8	5,9	6,7	6,5	6,1
	Rata-rata	5,6	6,4	6,2	5,8	5,8	6,6	6,4	6
	SD	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
150	1	5,8	6,7	6,5	6,1	6,1	6,9	6,6	6,4
	2	6,1	6,9	6,4	6,3	6,3	7	6,7	6,5
	3	5,9	6,8	6,6	6,2	6,2	7,1	6,8	6,3
	Rata-rata	5,9333333	6,8	6,5	6,2	6,2	7	6,7	6,4
	SD	0,1527525	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Basis sebelum stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Basis setelah stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Formula 1 sebelum stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Formula 1 sesudah stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Formula 2 sebelum stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Formula 2 sesudah stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Formula 3 sebelum stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Formula 3 sesudah stabilitas tanpa beban	,175	3	.	1,000	3	1,000
Basis sebelum stabilitas beban 50g	,175	3	.	1,000	3	1,000

Basis setelah stabilitas beban 50g	,175	3	.	1,000	3	1,000
Formula 1 sebelum stabilitas beban 50g	,175	3	.	1,000	3	1,000
Formula 1 sesudah stabilitas beban 50g	,175	3	.	1,000	3	1,000
Formula 2 sebelum stabilitas beban 50g	,175	3	.	1,000	3	1,000
Formula 2 sesudah stabilitas beban 50g	,175	3	.	1,000	3	1,000
Formula 3 sebelum stabilitas beban 50g	,175	3	.	1,000	3	1,000
Formula 3 sesudah stabilitas beban 50g	,175	3	.	1,000	3	1,000
Basis sebelum stabilitas beban 100g	,175	3	.	1,000	3	1,000
Basis sesudah stabilitas beban 100g	,175	3	.	1,000	3	1,000
Formula 1 sebelum stabilitas beban100g	,175	3	.	1,000	3	1,000
Formula 1 sesudah stabilitas beban 100g	,175	3	.	1,000	3	1,000
Formula 2 sebelum stabilitas beban 100g	,175	3	.	1,000	3	1,000
Formula 2 sesudah stabilitas beban 100g	,175	3	.	1,000	3	1,000
Formula 3 sebelum stabilitas beban 100g	,175	3	.	1,000	3	1,000
Formula 3 sesudah stabilitas beban 100g	,175	3	.	1,000	3	1,000
Basis sebelum stabilitas beban 150g	,175	3	.	1,000	3	1,000
Basis sesudah stabilitas beban 150g	,175	3	.	1,000	3	1,000
Formula 1 sebelum stabilitas beban 150g	,175	3	.	1,000	3	1,000
Formula 1 sesudah stabilitas beban 150g	,175	3	.	1,000	3	1,000
Formula 2 sebelum stabilitas beban 150g	,175	3	.	1,000	3	1,000
Formula 2 sesudah stabilitas beban 150g	,175	3	.	1,000	3	1,000
Formula 3 sebelum stabilitas beban 150g	,253	3	.	,964	3	,637
Formula 3 sesudah stabilitas beban 150g	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Basis sebelum stabilitas tanpa beban - Basis setelah stabilitas tanpa beban	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 2	Formula 1 sebelum stabilitas tanpa beban - Formula 1 sesudah stabilitas tanpa beban	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 4	Formula 3 sebelum stabilitas tanpa beban - Formula 3 sesudah stabilitas tanpa beban	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 5	Basis sebelum stabilitas beban 50g - Basis setelah stabilitas beban 50g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 6	Formula 1 sebelum stabilitas beban 50g - Formula 1 sesudah stabilitas beban 50g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 7	Formula 2 sebelum stabilitas beban 50g - Formula 2 sesudah stabilitas beban 50g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074

Pair 8	Formula 3 sebelum stabilitas beban 50g - Formula 3 sesudah stabilitas beban 50g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 9	Basis sebelum stabilitas beban 100g - Basis sesudah stabilitas beban 100g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 10	Formula 1 sebelum stabilitas beban100g - Formula 1 sesudah stabilitas beban 100g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 11	Formula 2 sebelum stabilitas beban 100g - Formula 2 sesudah stabilitas beban 100g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 12	Formula 3 sebelum stabilitas beban 100g - Formula 3 sesudah stabilitas beban 100g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 13	Basis sebelum stabilitas beban 150g - Basis sesudah stabilitas beban 150g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 14	Formula 1 sebelum stabilitas beban 150g - Formula 1 sesudah stabilitas beban 150g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074

Pair 15	Formula 2 sebelum stabilitas beban 150g - Formula 2 sesudah stabilitas beban 150g	-,2000	,1000	,0577	-,4484	,0484	-3,464	2	,074
Pair 16	Formula 3 sebelum stabilitas beban 150g - Formula 3 sesudah stabilitas beban 150g	-,2667	,0577	,0333	-,4101	-,1232	-8,000	2	,015

Lampiran 20. Hasil analisis SPSS stabilitas uji SPF

1. Formula 1 (kontrol negatif) Sesudah stabilitas

Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,0105	0,0001575				
295	0,0817	0,0091	0,00074347				
300	0,2874	0,0087	0,00250038				
305	0,3278	0,0072	0,00236016	6,1299	0,02088534	10	
310	0,1864	0,0053	0,00098792				
315	0,0839	0,0044	0,00036916				
320	0,0180	0,0035	0,000063				
			0,00718159				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,0098	0,0001425				
295	0,0817	0,0087	0,00067811				
300	0,2874	0,0079	0,00227046				
305	0,3278	0,0067	0,00219626	6,1299	0,01122847	10	
310	0,1864	0,0046	0,00085744				
315	0,0839	0,0038	0,00031882				
320	0,0180	0,0031	0,0000558				
			0,00651939				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,0095	0,000141				
295	0,0817	0,0083	0,0006536				
300	0,2874	0,0078	0,00224172				
305	0,3278	0,0066	0,00216348	6,1299	0,01242397	10	
310	0,1864	0,0049	0,00091336				
315	0,0839	0,0041	0,00031043				
320	0,0180	0,0025	0,000045				
			0,00646859				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,00646859	10	
R 1	0,4402			
R 2	0,3996	**RATA - RATA**	0,412	**TIDAK BERPOTENSI**
R 3	0,3965			
		SD	0,02438	

2. Formula 2 (karbopol 0,5%)

Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1799	0,0026985				
295	0,0817	0,1642	0,01341514				
300	0,2874	0,1309	0,03762066				
305	0,3278	0,1139	0,03733642	6,1299	0,11386811	10	
310	0,1864	0,0919	0,01713016				
315	0,0839	0,0577	0,00484103				
320	0,0180	0,0459	0,0008262				
			0,11386811				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1813	0,0027195				
295	0,0817	0,1655	0,01352135				
300	0,2874	0,1322	0,03799428				
305	0,3278	0,1151	0,03772978	6,1299	0,11501219	10	
310	0,1864	0,0928	0,01729792				
315	0,0839	0,0584	0,00489976				
320	0,0180	0,0472	0,0008496				
			0,11501219				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1820	0,00273				
295	0,0817	0,1671	0,01365207				
300	0,2874	0,1333	0,03831042				
305	0,3278	0,1157	0,03792646	6,1299	0,11588424	10	
310	0,1864	0,0935	0,0174284				
315	0,0839	0,0591	0,00495849				
320	0,0180	0,0488	0,0008784				
			0,11588424				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,11588424	10	
R 1	6,9800			
R 2	7,0501	**RATA - RATA**	7,045	**PROTEKSI EKSTRA**
R 3	7,1036			
		SD	0,06198	

3. Formula 3 (karbopol 0,75%)

Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1717	0,0025755				
295	0,0817	0,1632	0,01333344				
300	0,2874	0,1479	0,04250646				
305	0,3278	0,1239	0,04061442	6,1299	0,12260816	10	
310	0,1864	0,0939	0,01750296				
315	0,0839	0,0622	0,00521858				
320	0,0180	0,0476	0,0008568				
			0,12260816				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1728	0,002592				
295	0,0817	0,1641	0,01340697				
300	0,2874	0,1488	0,04276512				
305	0,3278	0,1247	0,04087666	6,1299	0,12348036	10	
310	0,1864	0,0948	0,01767072				
315	0,0839	0,0631	0,00529409				
320	0,0180	0,0486	0,0008748				
			0,12348036				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1735	0,0026025				
295	0,0817	0,1650	0,0134805				
300	0,2874	0,1493	0,04290882				
305	0,3278	0,1256	0,04117168	6,1299	0,12418988	10	
310	0,1864	0,0954	0,01778256				
315	0,0839	0,0638	0,00535282				
320	0,0180	0,0495	0,000891				
			0,12418988				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,12418988	10	
R 1	7,5158			
R 2	7,5692	**RATA - RATA**	7,566	**PROTEKSI EKSTRA**
R 3	7,6127			
		SD	0,04856	

4. Formula 4 (karbopol 1%)

Replikasi I

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1989	0,0029835				
295	0,0817	0,1718	0,01403606				
300	0,2874	0,1559	0,04480566				
305	0,3278	0,1356	0,04444968	6,1299	0,13101136	10	
310	0,1864	0,0975	0,018174				
315	0,0839	0,0694	0,00582266				
320	0,0180	0,0411	0,0007398				
			0,13101136				

Replikasi II

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,1999	0,0029985				
295	0,0817	0,1723	0,01407691				
300	0,2874	0,1579	0,04538046				
305	0,3278	0,1379	0,04520362	6,1299	0,1326909	10	
310	0,1864	0,0986	0,01837904				
315	0,0839	0,0703	0,00589817				
320	0,0180	0,0419	0,0007542				
			0,1326909				

Replikasi III

λ	EE x I	Abs	EE x I x Abs	CF	∑ EE x I x Abs	FP	SPF
290	0,0150	0,2110	0,003165				
295	0,0817	0,1732	0,01415044				
300	0,2874	0,1581	0,04543794				
305	0,3278	0,1391	0,04559698	6,1299	0,13366473	10	
310	0,1864	0,0997	0,01858408				
315	0,0839	0,0711	0,00596529				
320	0,0180	0,0425	0,000765				
			0,13366473				

SPF	**CF**	**∑ EE (λ) x I (λ) x Abs (λ)**	**FP**	
SPF	6,1299	0,13366473	10	
R 1	8,0309			
R 2	8,1338	**RATA - RATA**	8,119	**PROTEKSI MAKSIMAL**
R 3	8,1935			
		SD	0,08228	

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok_Perlakuan	Statistic	df	Sig.	Statistic	df	Sig.
Uji_SPF	Kontrol negatif	,365	3	.	,798	3	,110
	Formula I karbopol 0,5%	,285	3	.	,932	3	,497
	Formula II karbopol 0,75%	,276	3	.	,942	3	,537
	Formula III karbopol 1%	,175	3	.	1,000	3	1,000

a. Lilliefors Significance Correction

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Kontrol negatif sebelum stabilitas	,7400	1[a]	.	.
	Kontrol negatif sesudah stabilitas	,5100	1[a]	.	.
Pair 2	Formula 1 sebelum stabilitas	19,6900	1[a]	.	.
	Formula 1 sesudah stabilitas	8,6700	1[a]	.	.
Pair 3	Formula 2 sebelum stabilitas	19,9400	1[a]	.	.
	Formula 2 sesudah stabilitas	9,3100	1[a]	.	.
Pair 4	Formula 3 sebelum stabilitas	20,3000	1[a]	.	.
	Formula 3 sesudah stabilitas	9,9800	1[a]	.	.

a. The correlation and t cannot be computed because the sum of caseweights is less than or equal to 1.