LAMPIRAN

Lampiran 1. Determinasi daun salam

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
BADAN KEBIJAKAN PEMBANGUNAN KESEHATAN
BALAI BESAR PENELITIAN DAN PENGEMBANGAN
TANAMAN OBAT DAN OBAT TRADISIONAL
Jalan Lawu No.11 Tawamangu, Karanganyar, Jawa Tengah 57792
Telepon (0271) 697 010 Faksimile (0271) 697 451
Laman b2p2toot.litbang.kemkes.go.id Surat Elektronik b2p2toot@litbang.kemkes.go.id

Nomor : KM.04.02/2/1573/2022 01 September 2022
Hal : Keterangan Determinasi

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

Merujuk surat Saudara nomor: 896/H6-04/19.08.2022 tanggal 19 Agustus 2022 hal permohonan determinasi, dengan ini kami sampaikan bahwa hasil determinasi sampel tanaman sebagai berikut:

Nama Pemohon	: Fanissa Vanya Christina
Nama Sampel	: Salam
Sampel	: Tanaman Segar
Spesies	: *Syzygium polyanthum* (Wight) Walp.
Sinonim	: *Eugenia polyantha* Wight
Familia	: Myrtaceae
Penanggung Jawab	: Isna Jati Asiyah, M.Sc.

Hasil determinasi tersebut hanya mencakup sampel tanaman yang telah dikirimkan ke dan/atau berasal dari B2P2TOOT.

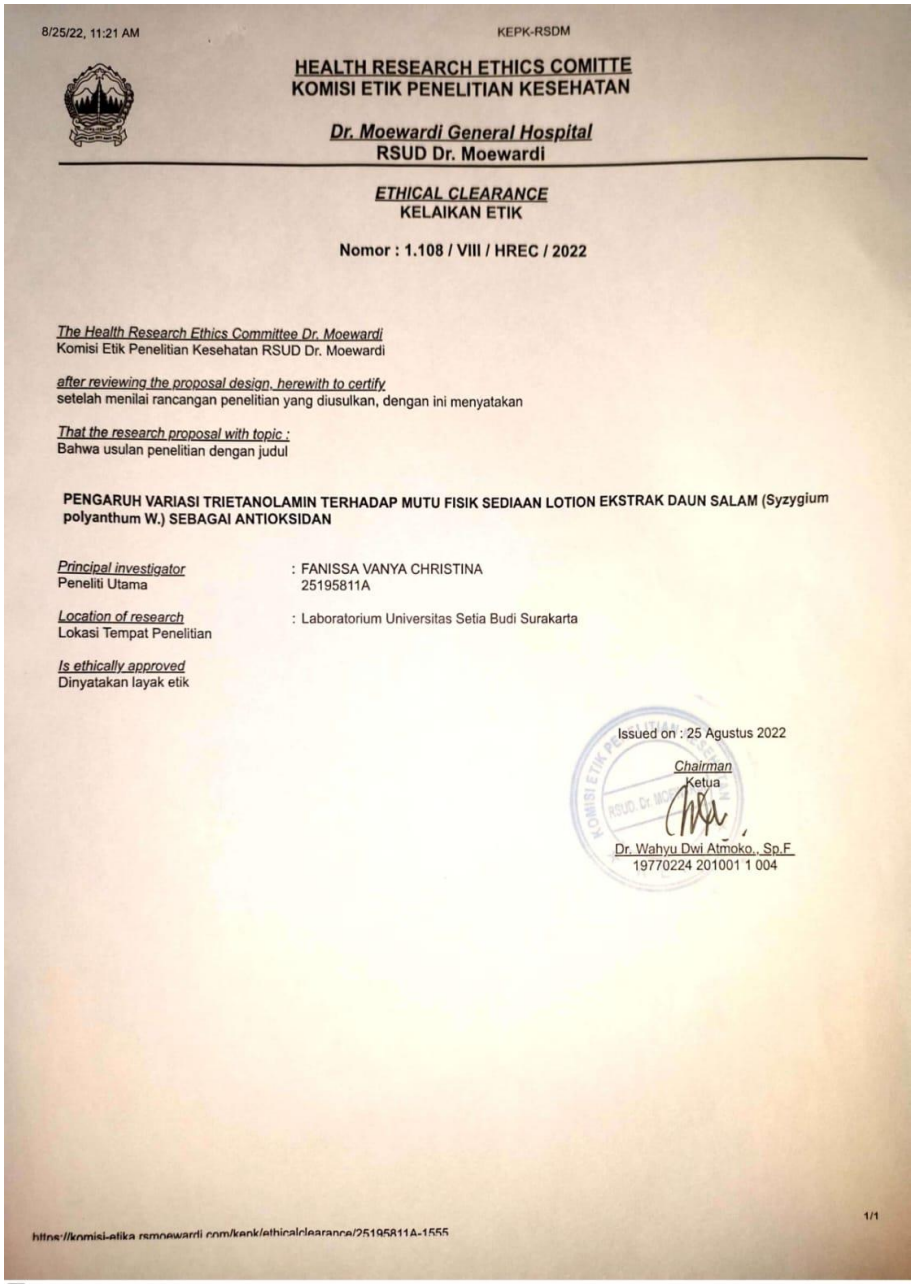
Atas perhatian Saudara, kami sampaikan terima kasih.

Kepala Balai Besar Penelitian
dan Pengembangan Tanaman Obat
dan Obat Tradisional

Akhmad Saikhu, S.K.M., M.Sc.PH.

Dokumen ini ditandatangani secara elektronik melalui Aplikasi TNDE menggunakan sertifikat elektronik yang diterbitkan oleh BSrE. (1/1)

Lampiran 2. *Ethical Clearance*



8/25/22, 11:21 AM KEPK-RSDM

HEALTH RESEARCH ETHICS COMITTE
KOMISI ETIK PENELITIAN KESEHATAN

Dr. Moewardi General Hospital
RSUD Dr. Moewardi

ETHICAL CLEARANCE
KELAIKAN ETIK

Nomor : 1.108 / VIII / HREC / 2022

The Health Research Ethics Committee Dr. Moewardi
Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi

after reviewing the proposal design, herewith to certify
setelah menilai rancangan penelitian yang diusulkan, dengan ini menyatakan

That the research proposal with topic :
Bahwa usulan penelitian dengan judul

PENGARUH VARIASI TRIETANOLAMIN TERHADAP MUTU FISIK SEDIAAN LOTION EKSTRAK DAUN SALAM (Syzygium polyanthum W.) SEBAGAI ANTIOKSIDAN

Principal investigator : FANISSA VANYA CHRISTINA
Peneliti Utama 25195811A

Location of research : Laboratorium Universitas Setia Budi Surakarta
Lokasi Tempat Penelitian

Is ethically approved
Dinyatakan layak etik

Issued on : 25 Agustus 2022

Chairman
Ketua

Dr. Wahyu Dwi Atmoko., Sp.F
19770224 201001 1 004

1/1

https://komisi-etika.rsmoewardi.com/kepk/ethicalclearance/25195811A-1555

Lampiran 3. Perhitungan simplisia kering daun salam

Hasil perhitungan rendemen simplisia kering daun salam

Sampel	Daun salam (gram)	Simplisia kering (gram)	Rendemen (%)
Daun salam	8.500	4.030	47,411%

Daun salam = 8.500 gram

Simplisia kering = 4.030 gram

$$\% \text{ rendemen} = \frac{\text{bobot simplisia kering}}{\text{bobot simplisia basah}} \text{ x } 100\%$$

$$\% \text{ rendemen} = \frac{4.030 \text{ gram}}{8.500 \text{ gram}} \text{ x } 100\% = 47{,}411\%$$

Lampiran 4. Perhitungan rendemen serbuk terhadap daun kering

Berat kering (gram)	Berat serbuk (gram)	Rendemen (%)
4.030	1.540	38,213

Bobot kering = 4.030 gram

Bobot serbuk = 1.540 gram

$$\% \text{ rendemen} = \frac{\text{Bobot serbuk}}{\text{Bobot daun kering}} \text{ x } 100\%$$

$$\% \text{ rendemen} = \frac{1.540 \text{ gram}}{4.030 \text{ gram}} \text{ x } 100\% = 38{,}213\%$$

Lampiran 5. Perhitungan dan gambar susut pengeringan serbuk daun salam

Sampel	Replikasi	Berat sampel (gram)	Susut pengeringan (%)
Serbuk	1	2,00	8,5
	2	2,00	7,0
	3	2,00	8,1
Rata-rata			7,86±0,78

Perhitungan susut pengeringan dengan menggunakan alat *moisture balance*

$$\text{Rata-rata susut pengeringan} = \frac{8,5\%+7,0\%+8,1\%}{3}$$

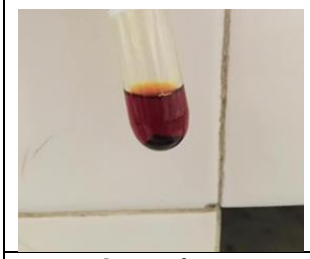
$$= 7,86\%$$



Lampiran 6. Gambar bahan dan alat penelitian

<table>
<tr><td colspan="2">Bahan</td></tr>
<tr><td>a. Gambar tanaman salam
  </td><td>b. Simplisia kering daun salam
  </td></tr>
<tr><td>c. Serbuk daun salam
  </td><td>d. Ekstrak daun salam
  </td></tr>
<tr><td>e. Gambar Larutan DPPH
  </td><td>f. Gambar Etanol p.a
  </td></tr>
</table>

Lampiran 7. Hasil uji identifikasi senyawa kimia serbuk daun salam

Hasil positif alkaloid (uji bouchardat) 	Hasil positif alkaloid (uji dragendroff) 	Hasil positif flavonoid 
Hasil positif saponin 	Hasil positif tanin 	Hasil positif steroid 

Lampiran 8. Gambar proses ekstraksi

Lampiran 9. Hasil Perhitungan rendemen ekstrak etanol daun salam

Sampel	Bobot serbuk (gram)	Bobot ekstrak (gram)	Rendemen ekstrak (%)
Daun salam	700	251	35,86

Perhitungan rendemen ekstrak

$$= \frac{\text{bobot ekstrak}}{\text{bobot serbuk}} \text{ x } 100\%$$

$$= \frac{251 \text{ gram}}{700 \text{ gram}} \text{ x } 100\% = 35{,}86\ \%$$

Lampiran 10. Hasil dan gambar perhitungan kadar air ekstrak etanol daun salam

Replikasi	Bobot botol kosong (gram)	Bobot botol + ekstrak	Bobot ekstrak (gram)	Oven 5 jam	Oven 1 jam	Oven 1 jam
1	65,5351	75,5403	10,0052	9,7438	9,5134	9,4748
2	65,5210	75,5315	10,0105	9,7765	9,5432	9,5072
3	65,5435	75,5507	10,0072	0,7182	9,5268	9,4831

Replikasi 1

- Bobot kurs kosong = 65, 5351 gram
- Bobot krus + ekstrak sebelum dioven = 75, 5403gram
- Bobot awal ekstrak = 10,0052 gram
- Bobot krus + ekstrak setelah dioven = 75.0099
- Bobot ekstrak akhir = 9,4748 gram

$$= \frac{\text{Bobot awal-bobot akhir}}{\text{bobot awal}} \text{ x } 100\ \%$$

$$= \frac{10,0052-9,4748}{10,0052} \text{ x } 100\%$$

= 5,30 %

Replikasi 2

- Bobot kurs kosong = 65, 5210 gram
- Bobot krus + ekstrak sebelum dioven = 75, 5315gram
- Bobot awal ekstrak = 10, 0105 gram
- Bobot krus + ekstrak setelah dioven = 75,0282
- Bobot ekstrak akhir = 9,5072 gram

$$= \frac{\text{Bobot awal-bobot akhir}}{\text{bobot awal}} \text{ x } 100\ \%$$

$$= \frac{10,0105-9,5072}{10,0105} \text{ x } 100\%$$

= 5,02 %

Replikasi 3

- Bobot kurs kosong = 65,5435 gram
- Bobot krus + ekstrak sebelum dioven = 75,5507 gram
- Bobot awal ekstrak = 10,0072 gram
- Bobot krus + ekstrak setelah dioven = 75,0266
- Bobot ekstrak akhir = 9,4831 gram

$$= \frac{\text{Bobot awal-bobot akhir}}{\text{bobot awal}} \text{ x } 100\ \%$$

$$= \frac{10,0072-9,4831}{10,0072} \text{ x } 100\%$$

= 5,23 %

Lampiran 11. Hasil uji identifikasi senyawa kimia ekstrak daun salam

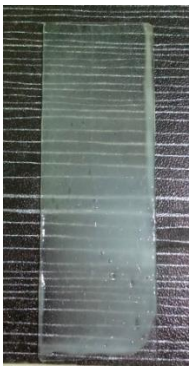
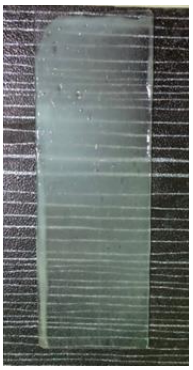
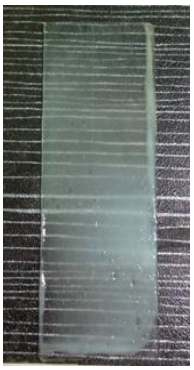
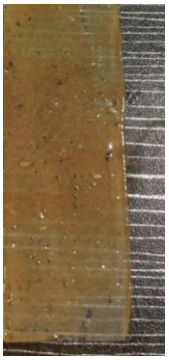
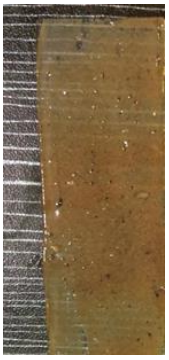
Hasil positif alkaloid bouchardat 	Hasil positif alkaloid dragendroff 	Hasil positif saponin 
Hasil positif tanin 	Hasil positif flavonoid 	Hasil positif steroid 
Hasil positif vitamin C 		

Lampiran 12. Gambar proses pengujian uji mutu fisik lotion ekstrak daun salam

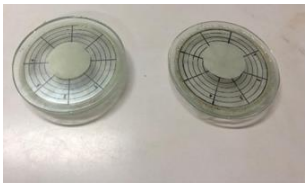
a. Gambar uji organoleptis

Formula 1 (kontrol +) 	Formula 2 (Tea 2%) 	Formula 3 (Tea 3%) 
Formula 4 (Tea 4%) 	Formula 5 Tea 2% + ekstrak 	Formula 6 Tea 3% + ekstrak 
	Formula 7 Tea 4% + ekstrak 	

b. Gambar uji homogenitas lotion

Formula 1 (+)	Formula 2	Formula 3	Formula 4
			
Formula 5	**Formula 6**	**Formula 7**	
			

c. Uji daya sebar

Beban 0 gram	Beban 50 gram	Beban 100 gram
		
Beban 150 gram	Beban 200 gram	
		

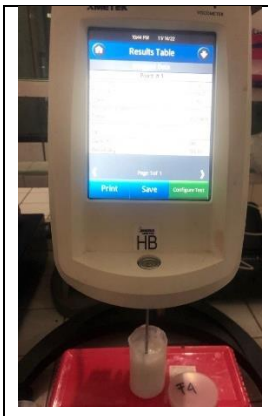
d. Uji daya Sebar

Tanpa beban 1 menit	Tanpa beban 1 kg 5 menit
	

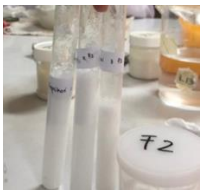
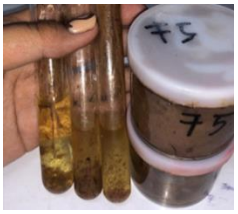
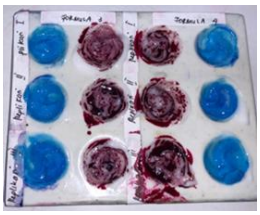
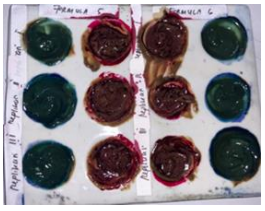
e. Uji pH

f. Uji viskositas

g. Uji Tipe emulsi

Pengenceran air	Pengenceran minyak	Pewarnaan
 	 	 
	Daya Hantar Listrik 	

h. Uji *cycling test*

i. Uji iritasi kulit pada responden

Formula 1 	Formula 2 	Formula 3 
Formula 4 	Formula 5 	Formula 6 
	Formula 7 	

Lampiran 13. Perhitungan larutan induk DPPH 0,4 mM

Penimbangan serbuk DPPH

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

$$\textit{Molaritas (M)} = \frac{\text{mol}}{\text{volume}}$$

$$\textit{Molaritas (M)} = \frac{\text{bobot (gram) serbuk DPPH}}{\text{BM DPPH x Volume (liter)}}$$

$$0{,}4 \text{ mM} = \frac{\text{mol}}{394{,}32 \text{ x } 0{,}1}$$

Bobot serbuk DPPH = 0,0004 x 394,32 x 0,1

= 0,015772 gram = 15,772 mg = 15,8 mg

Pembuatan larutan DPPH

Serbuk DPPH ditimbang sebanyak 15,8 mg kemudian dilarutkan dengan etanol p.a sampai tanda batas labu takar 100 mL. Kemudian dibaca absorbansi larutan DPPH dan didapatkan nilai absorbansi 0,743

Lampiran 14. Pembuatan larutan stok Vitamin C

Pembutan larutan stok vitamin C dengan menimbang 10 mg dimasukkan dalam labu takar dan ditambahkan etanol p.a sampai pada batas 100 mL, sehingga diperoleh konsentrasi 100 ppm. Kemudian dibuat beberapa seri pengenceran yaitu 2 ppm, 4 ppm, 6 ppm, 8 ppm dan 10 ppm.

Perhitungan seri konsentrasi

1. Konsentrasi 2 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 100 ppm = 10 ml x 2 ppm
   V_1 = 0,2 mL
2. Konsentrasi 4 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 100 ppm = 10 ml x 4 ppm
   V_1 = 0,4 mL
3. Konsentrasi 6 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 100 ppm = 10 ml x 6 ppm

V_1 = 0,6 mL

4. Konsentrasi 8 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 100 ppm = 10 ml x 8 ppm
   V_1 = 0,8 mL
5. Konsentrasi 10 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 100 ppm = 10 ml x 10 ppm
   V_1 = 1 mL

Pembuatan larutan stok ekstrak daun salam

Pembuatan larutan stok ekstrak daun salam dengan menimbang 50 mg dimasukkan kedalam labu takar dan ditambahkan etanol p.a sampai tanda batas 100 mL, sehingga diperoleh konsentrasi 500 ppm. Kemudian dibuat beberapa seri pengenceran yaitu 10 ppm, 20 ppm, 30 ppm, 40 ppm, 50 ppm.

Perhitungan seri pengenceran

1. Konsentrasi 10 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 10 ppm
   V_1 = 0,2 mL
2. Konsentrasi 20 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 20 ppm
   V_1 = 0,4 mL
3. Konsentrasi 30 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 30 ppm
   V_1 = 0,6 mL
4. Konsentrasi 40 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 40 ppm
   V_1 = 0,8 mL
5. Konsentrasi 50 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 50 ppm
   V_1 = 1 mL

Pembuatan larutan stok Formula I, II, III, IV, V, VI, dan VII

Pembuatan larutan stok lotion formula 1-7 dengan menimbang 50 mg dimasukkan kedalam labu ukur dan ditambahkan etanol p.a sampai tanda batas 100 mL, sehingga diperoleh konsentrasi 500 ppm. Kemudian dibuat beberapa seri pengenceran yaitu 60 ppm, 70 ppm, 80 ppm, 90 ppm, dan 100 ppm.

Perhitungan seri konsentrasi

1. Konsentrasi 60 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 60 ppm
   V_1 = 1,2 mL
2. Konsentrasi 70 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 70 ppm
   V_1 = 1,4 mL
3. Konsentrasi 80 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 80 ppm
   V_1 = 1,6 mL
4. Konsentrasi 90 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 90 ppm
   V_1 = 1,8 mL
5. Konsentrasi 100 ppm
   V_1 x C_1 = V_2 x C_2
   V_1 x 500 ppm = 10 ml x 100 ppm
   V_1 = 2 mL

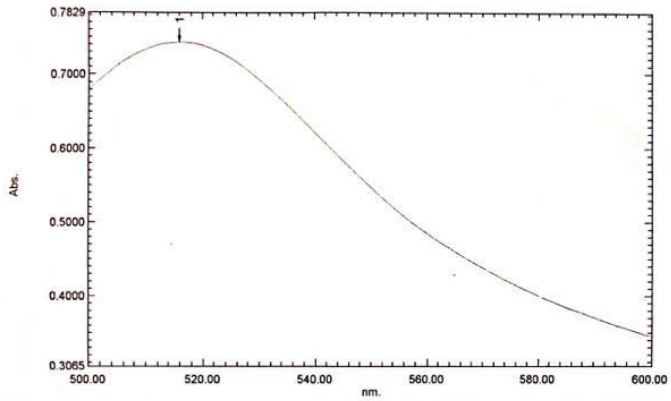
Lampiran 15. Penentuan panjang gelombang

Fanitta v.c

Spectrum Peak Pick Report

11/21/2022 09:01:50 AM

Data Set: File_220915_170626_090058 - RawData



No.	P/V	Wavelength	Abs.	Description
1	P	516.00	0.7432	

[Measurement Properties]
Wavelength Range (nm.): 500.00 to 600.00
Scan Speed: Fast
Sampling Interval: 1.0
Auto Sampling Interval: Disabled
Scan Mode: Auto

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length.
Additional Information:

Page 1 / 1

Lampiran 16. Penentuan operating time

a. Vitamin C

Time (Minute)	RawData	Time (Minute)	RawData
0	0,480	**31**	0,452
1	0,479	**32**	0,453
2	0,470	**33**	0,452
3	0,460	**34**	0,452
4	0,450	**35**	0,452
5	0,459	**36**	0,452
6	0,459	**37**	0,452
7	0,460	**38**	0,452
8	0,458	**39**	0,452
9	0,458	**40**	0,452
10	0,457	**41**	0,452
11	0,456	**42**	0,452
12	0,456	**43**	0,452
13	0,456	**44**	0,452
14	0,456	**45**	0,452
15	0,455	**46**	0,452
16	0,456	**47**	0,452
17	0,455	**48**	0,452
18	0,454	**49**	0,452
19	0,455	**50**	0,452
20	0,454	**51**	0,452
21	0,454	**52**	0,452
22	0,454	**53**	0,452
23	0,454	**54**	0,452
24	0,453	**55**	0,452
25	0,453	**56**	0,452
26	0,453	**57**	0,452
27	0,453	**58**	0,452
28	0,453	**59**	0,452
29	0,453	**60**	0,452
30	0,453		

b. Ekstrak

Time (Minute)	RawData	Time (Minute)	RawData
0	0,522	**31**	0,482
1	0,517	**32**	0,481
2	0,513	**33**	0,481
3	0,512	**34**	0,480
4	0,509	**35**	0,479
5	0,508	**36**	0,478
6	0,506	**37**	0,478
7	0,504	**38**	0,477
8	0,503	**39**	0,477
9	0,502	**40**	0,476
10	0,502	**41**	0,475
11	0,500	**42**	0,475
12	0,499	**43**	0,474
13	0,498	**44**	0,473
14	0,497	**45**	0,473
15	0,496	**46**	0,472
16	0,495	**47**	0,472
17	0,494	**48**	0,471
18	0,493	**49**	0,470
19	0,492	**50**	0,470
20	0,491	**51**	0,469
21	0,491	**52**	0,469
22	0,490	**53**	0,468
23	0,489	**54**	0,468
24	0,488	**55**	0,467
25	0,487	**56**	0,467
26	0,487	**57**	0,466
27	0,485	**58**	0,465
28	0,485	**59**	0,465
29	0,484	**60**	0,464
30	0,483		

c. Formula 1 (Kontrol +)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,818	**31**	0,815
1	0,817	**32**	0,815
2	0,816	**33**	0,815
3	0,817	**34**	0,815
4	0,817	**35**	0,815
5	0,816	**36**	0,815
6	0,816	**37**	0,815
7	0,816	**38**	0,815
8	0,816	**39**	0,815
9	0,816	**40**	0,815
10	0,816	**41**	0,815
11	0,815	**42**	0,815
12	0,815	**43**	0,815
13	0,816	**44**	0,815
14	0,815	**45**	0,815
15	0,815	**46**	0,815
16	0,815	**47**	0,815
17	0,815	**48**	0,815
18	0,815	**49**	0,815
19	0,814	**50**	0,815
20	0,815	**51**	0,815
21	0,815	**52**	0,815
22	0,814	**53**	0,815
23	0,815	**54**	0,815
24	0,815	**55**	0,815
25	0,815	**56**	0,815
26	0,815	**57**	0,815
27	0,815	**58**	0,815
28	0,815	**59**	0,815
29	0,815	**60**	0,815
30	0,815		

d. Formula 2

Time (Minute)	RawData	Time (Minute)	RawData
0	0,786	**31**	0,776
1	0,784	**32**	0,776
2	0,781	**33**	0,776
3	0,784	**34**	0,776
4	0,783	**35**	0,776
5	0,783	**36**	0,776
6	0,782	**37**	0,776
7	0,781	**38**	0,776
8	0,781	**39**	0,776
9	0,781	**40**	0,776
10	0,780	**41**	0,775
11	0,780	**42**	0,775
12	0,780	**43**	0,775
13	0,780	**44**	0,775
14	0,779	**45**	0,775
15	0,779	**46**	0,775
16	0,779	**47**	0,775
17	0,779	**48**	0,775
18	0,779	**49**	0,775
19	0,778	**50**	0,775
20	0,778	**51**	0,775
21	0,778	**52**	0,775
22	0,778	**53**	0,775
23	0,778	**54**	0,775
24	0,777	**55**	0,775
25	0,777	**56**	0,775
26	0,777	**57**	0,775
27	0,777	**58**	0,775
28	0,777	**59**	0,775
29	0,777	**60**	0,775
30	0,777		

e. Formula 3

Time (Minute)	RawData	Time (Minute)	RawData
0	0,792	**31**	0,782
1	0,790	**32**	0,782
2	0,787	**33**	0,781
3	0,786	**34**	0,781
4	0,785	**35**	0,782
5	0,785	**36**	0,781
6	0,784	**37**	0,782
7	0,783	**38**	0,782
8	0,783	**39**	0,781
9	0,783	**40**	0,781
10	0,783	**41**	0,782
11	0,783	**42**	0,782
12	0,782	**43**	0,782
13	0,782	**44**	0,782
14	0,783	**45**	0,782
15	0,782	**46**	0,782
16	0,782	**47**	0,782
17	0,782	**48**	0,782
18	0,782	**49**	0,782
19	0,782	**50**	0,782
20	0,782	**51**	0,782
21	0,782	**52**	0,782
22	0,782	**53**	0,782
23	0,782	**54**	0,782
24	0,782	**55**	0,782
25	0,781	**56**	0,783
26	0,781	**57**	0,782
27	0,782	**58**	0,783
28	0,781	**59**	0,783
29	0,782	**60**	0,783
30	0,781		

f. Formula 4

Time (Minute)	RawData	Time (Minute)	RawData
0	0,737	**31**	0,730
1	0,735	**32**	0,731
2	0,735	**33**	0,731
3	0,733	**34**	0,731
4	0,732	**35**	0,731
5	0,731	**36**	0,731
6	0,731	**37**	0,731
7	0,731	**38**	0,731
8	0,731	**39**	0,731
9	0,731	**40**	0,731
10	0,730	**41**	0,731
11	0,730	**42**	0,731
12	0,730	**43**	0,731
13	0,730	**44**	0,732
14	0,729	**45**	0,732
15	0,730	**46**	0,732
16	0,730	**47**	0,732
17	0,730	**48**	0,732
18	0,730	**49**	0,732
19	0,730	**50**	0,732
20	0,730	**51**	0,733
21	0,730	**52**	0,732
22	0,730	**53**	0,733
23	0,730	**54**	0,733
24	0,730	**55**	0,733
25	0,730	**56**	0,733
26	0,730	**57**	0,733
27	0,730	**58**	0,733
28	0,730	**59**	0,733
29	0,730	**60**	0,733
30	0,730		

g. Formula 5

Time (Minute)	RawData	Time (Minute)	RawData
0	0,865	**31**	0,863
1	0,864	**32**	0,864
2	0,866	**33**	0,863
3	0,865	**34**	0,863
4	0,865	**35**	0,864
5	0,865	**36**	0,864
6	0,865	**37**	0,863
7	0,865	**38**	0,863
8	0,865	**39**	0,863
9	0,865	**40**	0,863
10	0,864	**41**	0,864
11	0,864	**42**	0,864
12	0,864	**43**	0,864
13	0,864	**44**	0,864
14	0,864	**45**	0,864
15	0,864	**46**	0,864
16	0,864	**47**	0,864
17	0,864	**48**	0,864
18	0,864	**49**	0,864
19	0,864	**50**	0,864
20	0,863	**51**	0,864
21	0,864	**52**	0,864
22	0,863	**53**	0,864
23	0,863	**54**	0,864
24	0,864	**55**	0,864
25	0,864	**56**	0,865
26	0,863	**57**	0,865
27	0,863	**58**	0,865
28	0,863	**59**	0,864
29	0,864	**60**	0,865
30	0,864		

h. Formula 6

Time (Minute)	RawData	Time (Minute)	RawData
0	0,708	**31**	0,814
1	0,719	**32**	0,814
2	0,721	**33**	0,820
3	0,723	**34**	0,823
4	0,721	**35**	0,825
5	0,724	**36**	0,830
6	0,721	**37**	0,831
7	0,726	**38**	0,833
8	0,726	**39**	0,836
9	0,725	**40**	0,838
10	0,727	**41**	0,844
11	0,732	**42**	0,845
12	0,731	**43**	0,843
13	0,734	**44**	0,846
14	0,735	**45**	0,848
15	0,737	**46**	0,852
16	0,741	**47**	0,852
17	0,745	**48**	0,854
18	0,749	**49**	0,854
19	0,751	**50**	0,856
20	0,759	**51**	0,857
21	0768	**52**	0,857
22	0,771	**53**	0,860
23	0,775	**54**	0,860
24	0,780	**55**	0,862
25	0,783	**56**	0,862
26	0,789	**57**	0,864
27	0,793	**58**	0,864
28	0,799	**59**	0,865
29	0,801	**60**	0,867
30	0,805		

i. Formula 7

Time (Minute)	RawData	Time (Minute)	RawData
0	0,642	**31**	0,641
1	0,644	**32**	0,641
2	0,645	**33**	0,641
3	0,644	**34**	0,641
4	0,643	**35**	0,642
5	0,643	**36**	0,642
6	0,643	**37**	0,641
7	0,642	**38**	0,642
8	0,642	**39**	0,642
9	0,642	**40**	0,642
10	0,642	**41**	0,642
11	0,642	**42**	0,642
12	0,642	**43**	0,642
13	0,642	**44**	0,642
14	0,641	**45**	0,642
15	0,642	**46**	0,642
16	0,641	**47**	0,642
17	0,641	**48**	0,642
18	0,641	**49**	0,642
19	0,641	**50**	0,642
20	0,641	**51**	0,642
21	0,641	**52**	0,642
22	0,641	**53**	0,642
23	0,641	**54**	0,643
24	0,641	**55**	0,642
25	0,641	**56**	0,642
26	0,641	**57**	0,642
27	0,641	**58**	0,642
28	0,641	**59**	0,642
29	0,641	**60**	0,642
30	0,641		

Lampiran 17. Hasil pengujian aktivitas antioksidan vitamin C, ekstrak daun salam, lotion formula I, II, III, IV, V, VI, dan VII

1. Vitamin C

Absorbansi blanko (DPPH) = 0,743

Vitamin C			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
2	0,743	0,549	26,11036
4	0,743	0,493	33,64738
6	0,743	0,447	39,83849
8	0,743	0,388	47,77927
10	0,743	0,354	52,35532

a = 19,95962
b = 3,33109
r = 0,99706

Vitamin C			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
2	0,743	0,547	26,37954
4	0,743	0,492	33,78197
6	0,743	0,445	40,10767
8	0,743	0,387	47,91386
10	0,743	0,353	52,48991

a = 20,22880
b = 3,31763
r = 0,99721

Vitamin C			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
2	0,743	0,545	26,64872
4	0,743	0,497	33,10902
6	0,743	0,444	40,24226
8	0,743	0,389	47,64468
10	0,743	0,352	52,62450

a = 20,10767
b = 3,32436
r = 0,99825

Hasil perhitungan regresi linier :

a = 20,09869

b = 3,32436

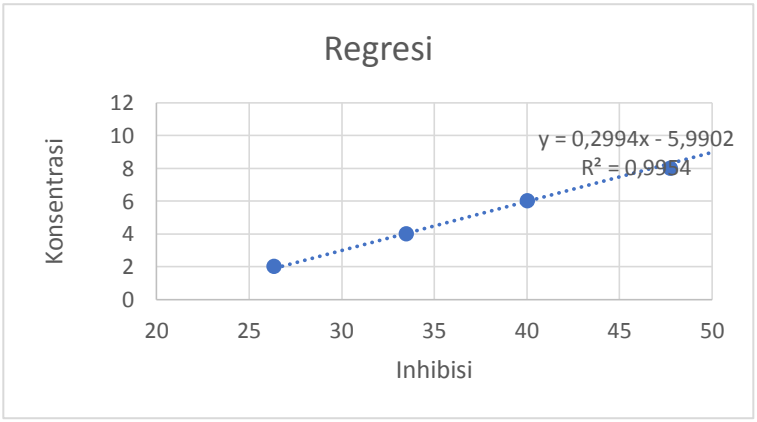
r = 0,99750

y = a + bx

50 = 20,09869 + 3,32436

x = (50 – 20,09869) / 3,32436

x = 8,994 ppm



2. Ekstrak daun salam

absorbansi blanko (DPPH) = 0,743

Ekstrak daun salam			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
10	0,743	0,684	7,94078
20	0,743	0,585	21,26514
30	0,743	0,558	24,89906
40	0,743	0,473	36,33917
50	0,743	0,369	50,33647

a = -1,80349
b = 0,99865
r = 0,98607

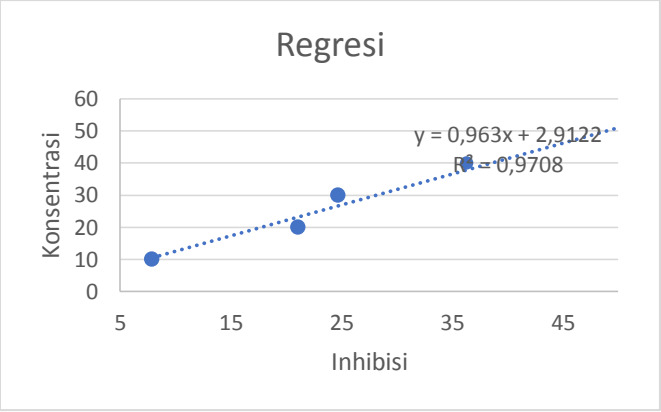
Ekstrak daun salam			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
10	0,743	0,683	8,07537
20	0,743	0,588	20,86137
30	0,743	0,562	24,36070
40	0,743	0,472	36,47376
50	0,743	0,364	51,00942

a = -2,28802
b = 1,01480
r = 0,98459

Ekstrak daun salam			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
10	0,743	0,686	7,67160
20	0,743	0,586	21,13055
30	0,743	0,559	24,76447
40	0,743	0,475	36,06999
50	0,743	0,366	50,74024

a = -2,24764
b = 1,01076
r = 0,98494

Hasil perhitungan regresi linier :
a = -2,11305
b = 1,00807
r = 0,9852
y = a + bx
50 = -2,11305 + 1,00807x
x = (50 – (-2,11305)) / 1,00807
x = 51,6 ppm



3. Formula 1 (kontrol +)

absorbansi blanko (DPPH) = 0,743

Formula 1 (K+)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,610	17,900404
70	0,743	0,578	22,207268
80	0,743	0,524	29,475101
90	0,743	0,467	37,146703
100	0,743	0,364	51,009421

a = -33,37820
b = 0,81157
r = 0,97851

Formula 1 (K+)			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,607	18,304172
70	0,743	0,578	22,207268
80	0,743	0,525	29,340511
90	0,743	0,465	37,415882
100	0,743	0,364	51,009421

a = -32.839838
b = 0,806191
r = 0,977189

Formula 1 (K+)			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,607	18,304172
70	0,743	0,574	22,745626
80	0,743	0,527	29,071332
90	0,743	0,466	37,281292
100	0,743	0,370	50,201884

a = -31,144011
b = 0,783311
r = 0,979254

Hasil perhitungan regresi linier :

a = -32,454016

b = 0,800357

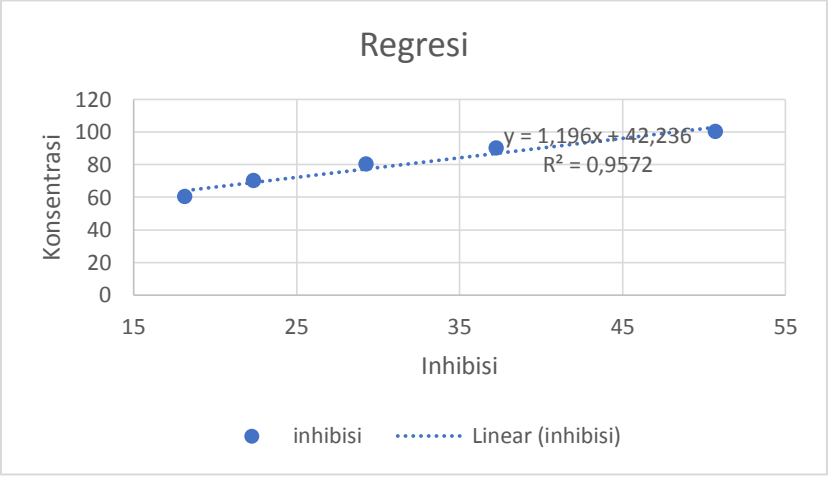
r = 0,97831

y = a + bx

50 = -32,454016+ 0,800357x

x = (50 – (-32,454016) / 0,800357

x = 103,02 ppm



4. Formula 2 (Basis)

Absorbansi blanko (DPPH) = 0,743

Formula 2			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,728	2,018843
70	0,743	0,72	3,095559
80	0,743	0,697	6,191117
90	0,743	0,676	9,017497
100	0,743	0,657	11,574697

a = -13,647376
b = 0,250336
r = 0,991214

Formula 2			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,726	2,288022
70	0,743	0,718	3,364738
80	0,743	0,699	5,921938
90	0,743	0,674	9,286676
100	0,743	0,657	11,574697

a = -13,109017
b = 0,244953
r = 0,988372

Formula 2			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,728	2,018843
70	0,743	0,72	3,095559
80	0,743	0,698	6,056528
90	0,743	0,675	9,152086
100	0,743	0,655	11,843876

a = -14,131898
b = 0,257066
r = 0,989916

Hasil perhitungan regresi linier :

a = -13,62943

b = 0,250785

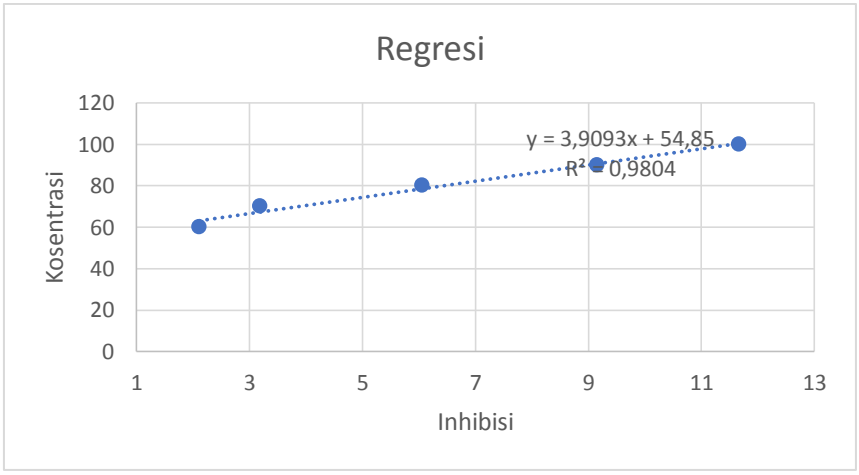
r = 0,989834

y = a + bx

50 = -13,62943 + 0,250785x

x = (50 – (-13,62943)) / 0,250785

x = 253,7 ppm



5. Formula 3 (basis)

absorbansi blanko (DPPH) = 0,743

Formula 3			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,73	1,74966
70	0,743	0,718	3,36474
80	0,743	0,692	6,86406
90	0,743	0,675	9,15209
100	0,743	0,664	10,63257
100	0,743	0,73	1,74966

a = -12,48991
b = 0,23553
r = 0,99062

Formula 3			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,73	1,74966
70	0,743	0,717	3,49933
80	0,743	0,694	6,59489
90	0,743	0,674	9,28668
100	0,743	0,664	10,63257
100	0,743	0,73	1,74966

a = -12,48991
b = 0,23553
r = 0,99253

Formula 3			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,728	2,01884
70	0,743	0,717	3,49933
80	0,743	0,693	6,72948
90	0,743	0,672	9,55585
100	0,743	0,663	10,76716
100	0,743	0,728	2,01884

a = -12,32840
b = 0,23553
r = 0,98928

Hasil perhitungan regresi linier :

a = -12,43607333

b = 0,23553

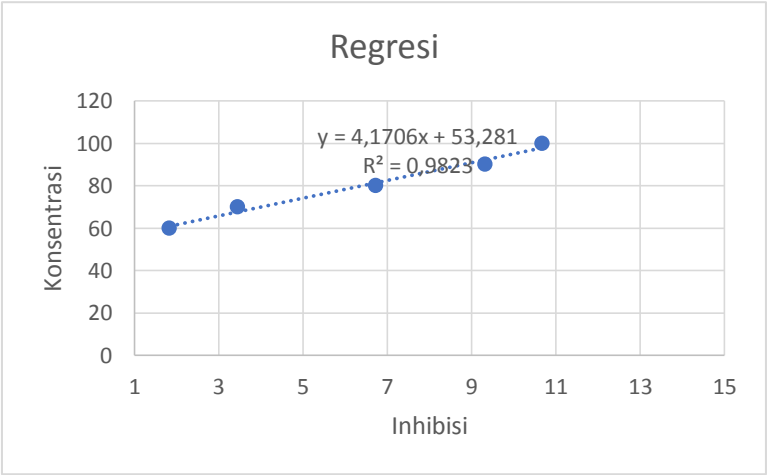
r = 0,99081

y = a + bx

50 = -12,43607333 + 0,23553x

x = 50 – (-12,43607333) / 0,23553

x = 265,08 ppm



6. Formula 4 (basis)

Absorbansi blanko (DPPH) = 0,743

Formula 4			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,727	2,15343
70	0,743	0,711	4,30686
80	0,743	0,688	7,40242
90	0,743	0,67	9,82503
100	0,743	0,665	10,49798

a = -10,92867
b = 0,22207
r = 0,98347

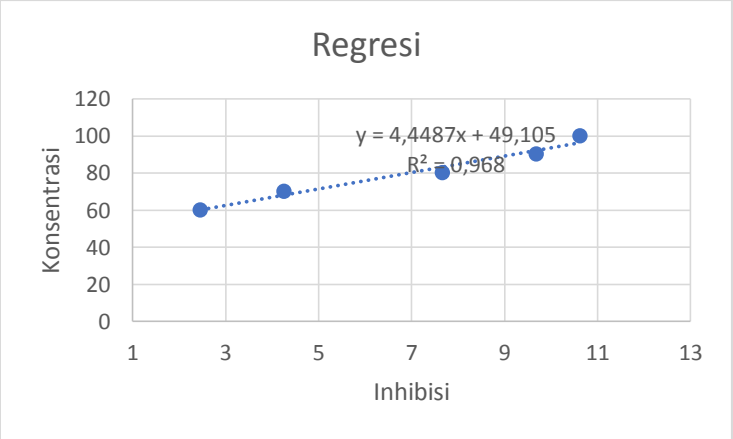
Formula 4			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,724	2,55720
70	0,743	0,712	4,17227
80	0,743	0,685	7,80619
90	0,743	0,672	9,55585
100	0,743	0,663	10,76716

a = -10,47106
b = 0,21803
r = 0,98393

Formula 4			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,723	2,69179
70	0,743	0,711	4,30686
80	0,743	0,685	7,80619
90	0,743	0,671	9,69044
100	0,743	0,664	10,63257

a = -9,98654
b = 0,21265
r = 0,98199

Hasil perhitungan regresi linier :
a = -10,46209
b = 0,217583333
r = 0,98313
y = a + bx
50 = -10,46209 + 0,217583333x
x = 50 – (-10,46209)) / 0,217583333
x = 277 ppm



7. Formulasi 5 (Basis + ekstrak)

Absorbansi blanko (DPPH) = 0,743

Formula 5			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,617	16,95828
70	0,743	0,587	20,99596
80	0,743	0,541	27,18708
90	0,743	0,469	36,87752
100	0,743	0,371	50,06729

a = -35,26245
b = 0,82100
r = 0,97558

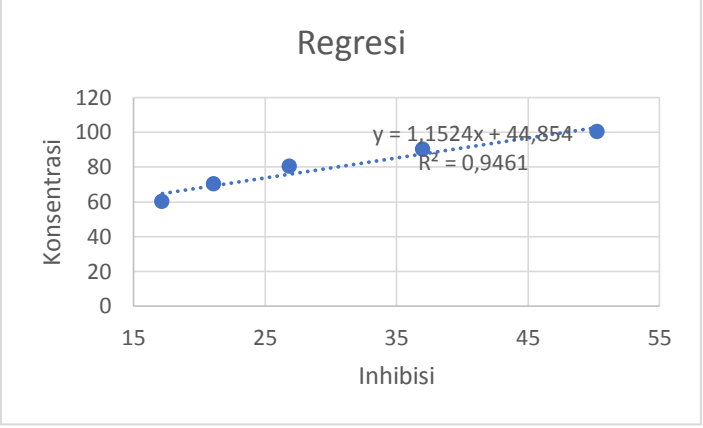
Formula 5			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,614	17,36205
70	0,743	0,585	21,26514
80	0,743	0,543	26,91790
90	0,743	0,47	36,74293
100	0,743	0,369	50,33647

a = -34,61642
b = 0,81427
r = 0,97103

Formula 5			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,615	17,22746
70	0,743	0,586	21,13055
80	0,743	0,546	26,51413
90	0,743	0,465	37,41588
100	0,743	0,368	50,47106

a = -35,6662
b = 0,8277
r = 0,9711

Hasil perhitungan regresi linier :
a = -35,18169
b = 0,82099
r = 0,97257
y = a + bx
50 = -35,18169 + 0,82099x
x = 50 – (-35,18169) / 0,82099
x = 103,75 ppm



8. Formula 6 (Basis + ekstrak)

Absorbansi blanko (DPPH) = 0,743

Formula 6			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,638	14,13190
70	0,743	0,588	20,86137
80	0,743	0,528	28,93674
90	0,743	0,469	36,87752
100	0,743	0,361	51,41319

a = -42,01884
b = 0,90579
r = 0,98754

Formula 6			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,631	15,07402
70	0,743	0,585	21,26514
80	0,743	0,529	28,80215
90	0,743	0,467	37,14670
100	0,743	0,363	51,14401

a = -39,73082
b = 0,88022
r = 0,98639

Formula 6			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
60	0,743	0,636	14,40108
70	0,743	0,587	20,99596
80	0,743	0,527	29,07133
90	0,743	0,469	36,87752
100	0,743	0,364	51,00942

a = -40,80754
b = 0,89098
r = 0,98824

Hasil perhitungan regresi linier :

a = -40,8524

b = 0,89233

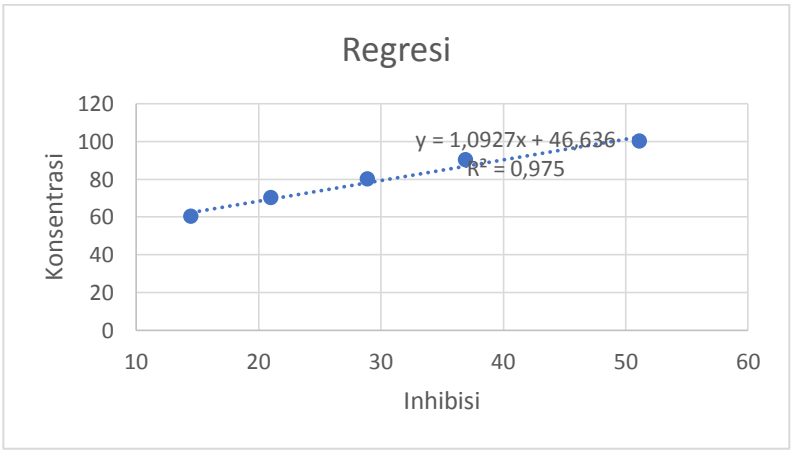
r = 0,98739

y = a + bx

50 = -40,8524 + 0,89233x

x = 50 – (-40,8524) / 0,89233

x = 101,81 ppm



9. Formula 7 (Basis + ekstrak)

Absorbansi blanko (DPPH) = 0,743

Formula 7				
Replikasi 1				
Kons (ppm)	DPPH	absorbansi	%inhibisi	
60	0,743	0,634	14,67026	
70	0,743	0,589	20,72678	a = -40,88829
80	0,743	0,541	27,18708	b = 0,88694
90	0,743	0,47	36,74293	r = 0,98202
100	0,743	0,364	51,00942	

Formula 7				
Replikasi 2				
Kons (ppm)	DPPH	absorbansi	%inhibisi	
60	0,743	0,636	14,40108	
70	0,743	0,582	21,66891	a = -41,07672
80	0,743	0,539	27,45626	b = 0,89367
90	0,743	0,466	37,28129	r = 0,98442
100	0,743	0,362	51,27860	

Formula 7				
Replikasi 3				
Kons (ppm)	DPPH	absorbansi	%inhibisi	
60	0,743	0,638	14,13190	
70	0,743	0,589	20,72678	a = -42,53028
80	0,743	0,543	26,91790	b = 0,90713
90	0,743	0,467	37,14670	r = 0,98327
100	0,743	0,362	51,27860	

Hasil perhitungan regresi linier :

a = -41,49843

b = 0,895913333

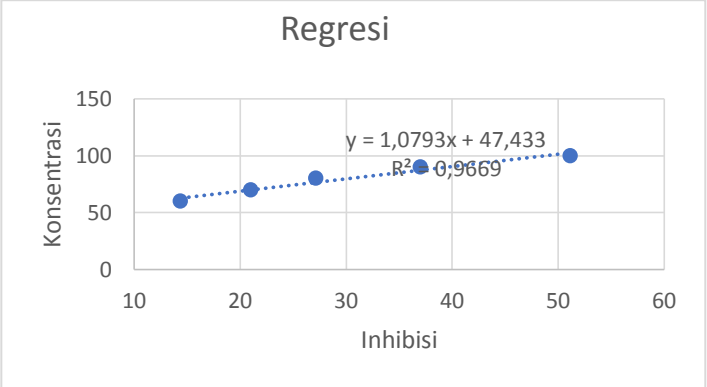
r = 0,983236667

y = a + bx

50 = -41,49843 + 0,895913333x

x = 50 – (-41,49843) / 0,895913333

x = 102,12 ppm



Lampiran 18. Data mutu fisik pH

Waktu	Formula	Replikasi			Rata-rata	SD
		R1	R2	R3		
Sebelum	**F1**	6,82	6,81	6,78	6,80	0,02
	F2	6,79	6,78	6,8	6,79	0,01
	F3	6,82	6,81	6,86	6,83	0,03
	F4	7,3	7,29	7,27	7,29	0,02
	F5	6,21	6,19	6,32	6,24	0,07
	F6	6,62	6,64	6,58	6,61	0,03
	F7	6,95	7,22	6,96	7,04	0,15
Sesudah	**F1**	6,61	6,69	6,58	6,63	0,06
	F2	6,68	6,63	6,75	6,69	0,06
	F3	6,71	6,72	6,74	6,72	0,02
	F4	7,22	7,18	7,26	7,22	0,04
	F5	6,18	6,12	6,06	6,12	0,06
	F6	6,58	6,55	6,53	6,55	0,03
	F7	6,68	6,87	6,74	6,76	0,10

Keterangan :
F1: Kontrol positif, lotion tanpa zat aktif dan penambahan Vit C 1 %
F2: Kontrol negatif, trietanolamin 2 % dan zat aktif 0 %
F3: Kontrol negatif, trietanolamin 3 % dan zat aktif 0 %
F4: Kontrol negatif, trietanolamin 4 % dan zat aktif 0 %
F5: Trietanolamin 2 % dan zat aktif 10 %
F6: Trietanolamin 3 % dan zat aktif 10 %
F7: Trietanolamin 4 % dan zat aktif 10 %

Lampiran 19. Data uji mutu fisik viskositas

Waktu	Formula	Replikasi			Rata-rata	SD
		R1	R2	R3		
Sebelum	**F1**	4.373	4.480	4.360	4.404	65,85
	F2	3.723	3.563	3.584	3.623	86,95
	F3	2.837	2.885	2.965	2.896	64,66
	F4	2.571	2.497	2.528	2.532	37,16
	F5	3.512	3.524	3.501	3.512	11,50
	F6	2.761	2.797	2.829	2.796	34,02
	F7	2.428	2.328	2.480	2.412	77,25
Sesudah	**F1**	3.973	4.027	3.933	3.978	47,17
	F2	3.573	3.469	3.533	3.525	52,46
	F3	2.758	2.784	2.869	2.804	58,05
	F4	2.437	2.379	2.429	2.415	31,43
	F5	3.471	3.223	3.496	3.397	150,92
	F6	2.688	2.612	2.759	2.686	73,51
	F7	2.037	2.163	2.120	2.107	64,05

Keterangan :
F1: Kontrol positif, lotion tanpa zat aktif dan penambahan Vit C 1 %
F2: Kontrol negatif, trietanolamin 2 % dan zat aktif 0 %
F3: Kontrol negatif, trietanolamin 3 % dan zat aktif 0 %
F4: Kontrol negatif, trietanolamin 4 % dan zat aktif 0 %
F5: Trietanolamin 2 % dan zat aktif 10 %
F6: Trietanolamin 3 % dan zat aktif 10 %
F7: Trietanolamin 4 % dan zat aktif 10 %

Lampiran 20. Data mutu fisik daya sebar

Formula	Berat (gram)	pemeriksaan daya sebar			Rata-rata	SD
		R1	R2	R3		
Formula 1	100	4,7	4,33	4,28	4,44	0,23
Formula 2	100	5,23	5,2	5,13	5,19	0,05
Formula 3	100	5,73	5,65	5,78	5,72	0,07
Formula 4	100	5,9	5,68	5,93	5,84	0,14
Formula 5	100	3,6	4,03	4,03	3,89	0,25
Formula 6	100	3,98	4,35	4,13	4,15	0,19
Formula 7	100	4,08	4,43	4,33	4,28	0,18

Keterangan :
F1: Kontrol positif, lotion tanpa zat aktif dan penambahan Vit C 1 %
F2: Kontrol negatif, trietanolamin 2 % dan zat aktif 0 %
F3: Kontrol negatif, trietanolamin 3 % dan zat aktif 0 %
F4: Kontrol negatif, trietanolamin 4 % dan zat aktif 0 %
F5: Trietanolamin 2 % dan zat aktif 10 %
F6: Trietanolamin 3 % dan zat aktif 10 %
F7: Trietanolamin 4 % dan zat aktif 10 %

Lampiran 21. Data mutu fisik daya lekat

Formula	Replikasi			Rata-rata	SD
	R1	R2	R3		
F1	2,89	1,87	1,76	2,17	0,62
F2	1,59	1,74	1,88	1,74	0,15
F3	1,53	1,51	1,47	1,50	0,03
F4	1,2	1,31	1,25	1,25	0,06
F5	1,53	1,37	1,42	1,44	0,08
F6	1,25	1,32	1,19	1,25	0,07
F7	1,12	0,87	1,2	1,06	0,17

Keterangan :
F1: Kontrol positif, lotion tanpa zat aktif dan penambahan Vit C 1 %
F2: Kontrol negatif, trietanolamin 2 % dan zat aktif 0 %
F3: Kontrol negatif, trietanolamin 3 % dan zat aktif 0 %
F4: Kontrol negatif, trietanolamin 4 % dan zat aktif 0 %
F5: Trietanolamin 2 % dan zat aktif 10 %
F6: Trietanolamin 3 % dan zat aktif 10 %
F7: Trietanolamin 4 % dan zat aktif 10 %

Lampiran 22. Hasil SPSS uji mutu fisik pH

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
pH	Kontrol +	.337	3	.	.855	3	.253
	Kontrol - 2%	.314	3	.	.893	3	.363
	Kontrol - 3%	.314	3	.	.893	3	.363
	Kontrol - 4%	.292	3	.	.923	3	.463
	Formula 5 2%	.253	3	.	.964	3	.637
	Formula 6 3%	.253	3	.	.964	3	.637
	Formula 7 4%	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
pH	Based on Mean	2.585	6	14	.067
	Based on Median	.426	6	14	.850
	Based on Median and with adjusted df	.426	6	7.016	.841
	Based on trimmed mean	2.298	6	14	.094

ANOVA

pH

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.729	6	.788	831.668	.000
Within Groups	.013	14	.001		
Total	4.742	20			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: pH
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol +	Kontrol - 2%	.43333*	.02513	.000	.3475	.5192
	Kontrol - 3%	.26333*	.02513	.000	.1775	.3492
	Kontrol - 4%	-.92333*	.02513	.000	-1.0092	-.8375
	Formula 5 2%	.58667*	.02513	.000	.5008	.6725
	Formula 6 3%	.44667*	.02513	.000	.3608	.5325
	Formula 7 4%	-.05667	.02513	.328	-.1425	.0292
Kontrol - 2%	Kontrol +	-.43333*	.02513	.000	-.5192	-.3475
	Kontrol - 3%	-.17000*	.02513	.000	-.2558	-.0842
	Kontrol - 4%	-1.35667*	.02513	.000	-1.4425	-1.2708
	Formula 5 2%	.15333*	.02513	.000	.0675	.2392
	Formula 6 3%	.01333	.02513	.998	-.0725	.0992
	Formula 7 4%	-.49000*	.02513	.000	-.5758	-.4042
Kontrol - 3%	Kontrol +	-.26333*	.02513	.000	-.3492	-.1775
	Kontrol - 2%	.17000*	.02513	.000	.0842	.2558
	Kontrol - 4%	-1.18667*	.02513	.000	-1.2725	-1.1008
	Formula 5 2%	.32333*	.02513	.000	.2375	.4092
	Formula 6 3%	.18333*	.02513	.000	.0975	.2692
	Formula 7 4%	-.32000*	.02513	.000	-.4058	-.2342
Kontrol - 4%	Kontrol +	.92333*	.02513	.000	.8375	1.0092
	Kontrol - 2%	1.35667*	.02513	.000	1.2708	1.4425
	Kontrol - 3%	1.18667*	.02513	.000	1.1008	1.2725
	Formula 5 2%	1.51000*	.02513	.000	1.4242	1.5958
	Formula 6 3%	1.37000*	.02513	.000	1.2842	1.4558
	Formula 7 4%	.86667*	.02513	.000	.7808	.9525
Formula 5 2%	Kontrol +	-.58667*	.02513	.000	-.6725	-.5008
	Kontrol - 2%	-.15333*	.02513	.000	-.2392	-.0675
	Kontrol - 3%	-.32333*	.02513	.000	-.4092	-.2375
	Kontrol - 4%	-1.51000*	.02513	.000	-1.5958	-1.4242
	Formula 6 3%	-.14000*	.02513	.001	-.2258	-.0542
	Formula 7 4%	-.64333*	.02513	.000	-.7292	-.5575
Formula 6 3%	Kontrol +	-.44667*	.02513	.000	-.5325	-.3608
	Kontrol - 2%	-.01333	.02513	.998	-.0992	.0725
	Kontrol - 3%	-.18333*	.02513	.000	-.2692	-.0975
	Kontrol - 4%	-1.37000*	.02513	.000	-1.4558	-1.2842
	Formula 5 2%	.14000*	.02513	.001	.0542	.2258
	Formula 7 4%	-.50333*	.02513	.000	-.5892	-.4175
Formula 7 4%	Kontrol +	.05667	.02513	.328	-.0292	.1425
	Kontrol - 2%	.49000*	.02513	.000	.4042	.5758
	Kontrol - 3%	.32000*	.02513	.000	.2342	.4058
	Kontrol - 4%	-.86667*	.02513	.000	-.9525	-.7808
	Formula 5 2%	.64333*	.02513	.000	.5575	.7292
	Formula 6 3%	.50333*	.02513	.000	.4175	.5892

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

Homogeneous Subsets

pH

Tukey HSD[a]

Formula	N	Subset for alpha = 0.05				
		1	2	3	4	5
Formula 5 2%	3	6.2067				
Formula 6 3%	3		6.3467			
Kontrol - 2%	3		6.3600			
Kontrol - 3%	3			6.5300		
Kontrol +	3				6.7933	
Formula 7 4%	3				6.8500	
Kontrol - 4%	3					7.7167
Sig.		1.000	.998	1.000	.328	1.000

Means for groups in homogeneous subsets are displayed.

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

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.15954198
Most Extreme Differences	Absolute	.126
	Positive	.109
	Negative	-.126
Test Statistic		.126
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

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

T-Test

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	sebelum - sesudah	.01048	.27189	.05933	-.11329	.13424	.177	20	.862

Lampiran 23. Hasil SPSS data mutu fisik viskositas

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
viskositas	Kontrol +	.352	3	.	.825	3	.175
	Kontrol - 2%	.341	3	.	.847	3	.231
	Kontrol - 3%	.232	3	.	.980	3	.726
	Kontrol - 4%	.210	3	.	.991	3	.822
	Formula 5 2%	.178	3	.	.999	3	.952
	Formula 6 3%	.182	3	.	.999	3	.935
	Formula 7 4%	.249	3	.	.968	3	.656

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
viskositas	Based on Mean	2.098	6	14	.119
	Based on Median	.407	6	14	.862
	Based on Median and with adjusted df	.407	6	7.569	.854
	Based on trimmed mean	1.903	6	14	.151

ANOVA

viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9152009.333	6	1525334.889	419.960	.000
Within Groups	50849.333	14	3632.095		
Total	9202858.667	20			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: viskositas

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol +	Kontrol - 2%	784.000*	49.208	.000	615.98	952.02
	Kontrol - 3%	1511.667*	49.208	.000	1343.64	1679.69
	Kontrol - 4%	1875.333*	49.208	.000	1707.31	2043.36
	Formula 5 2%	895.000*	49.208	.000	726.98	1063.02
	Formula 6 3%	1611.667*	49.208	.000	1443.64	1779.69
	Formula 7 4%	1995.333*	49.208	.000	1827.31	2163.36
Kontrol - 2%	Kontrol +	-784.000*	49.208	.000	-952.02	-615.98
	Kontrol - 3%	727.667*	49.208	.000	559.64	895.69
	Kontrol - 4%	1091.333*	49.208	.000	923.31	1259.36
	Formula 5 2%	111.000	49.208	.328	-57.02	279.02
	Formula 6 3%	827.667*	49.208	.000	659.64	995.69
	Formula 7 4%	1211.333*	49.208	.000	1043.31	1379.36
Kontrol - 3%	Kontrol +	-1511.667*	49.208	.000	-1679.69	-1343.64
	Kontrol - 2%	-727.667*	49.208	.000	-895.69	-559.64
	Kontrol - 4%	363.667*	49.208	.000	195.64	531.69
	Formula 5 2%	-616.667*	49.208	.000	-784.69	-448.64
	Formula 6 3%	100.000	49.208	.438	-68.02	268.02
	Formula 7 4%	483.667*	49.208	.000	315.64	651.69
Kontrol - 4%	Kontrol +	-1875.333*	49.208	.000	-2043.36	-1707.31
	Kontrol - 2%	-1091.333*	49.208	.000	-1259.36	-923.31
	Kontrol - 3%	-363.667*	49.208	.000	-531.69	-195.64
	Formula 5 2%	-980.333*	49.208	.000	-1148.36	-812.31
	Formula 6 3%	-263.667*	49.208	.002	-431.69	-95.64
	Formula 7 4%	120.000	49.208	.253	-48.02	288.02
Formula 5 2%	Kontrol +	-895.000*	49.208	.000	-1063.02	-726.98
	Kontrol - 2%	-111.000	49.208	.328	-279.02	57.02
	Kontrol - 3%	616.667*	49.208	.000	448.64	784.69
	Kontrol - 4%	980.333*	49.208	.000	812.31	1148.36
	Formula 6 3%	716.667*	49.208	.000	548.64	884.69
	Formula 7 4%	1100.333*	49.208	.000	932.31	1268.36
Formula 6 3%	Kontrol +	-1611.667*	49.208	.000	-1779.69	-1443.64
	Kontrol - 2%	-827.667*	49.208	.000	-995.69	-659.64
	Kontrol - 3%	-100.000	49.208	.438	-268.02	68.02
	Kontrol - 4%	263.667*	49.208	.002	95.64	431.69
	Formula 5 2%	-716.667*	49.208	.000	-884.69	-548.64
	Formula 7 4%	383.667*	49.208	.000	215.64	551.69
Formula 7 4%	Kontrol +	-1995.333*	49.208	.000	-2163.36	-1827.31
	Kontrol - 2%	-1211.333*	49.208	.000	-1379.36	-1043.31
	Kontrol - 3%	-483.667*	49.208	.000	-651.69	-315.64
	Kontrol - 4%	-120.000	49.208	.253	-288.02	48.02
	Formula 5 2%	-1100.333*	49.208	.000	-1268.36	-932.31
	Formula 6 3%	-383.667*	49.208	.000	-551.69	-215.64

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

Homogeneous Subsets

viskositas

Tukey HSD[a]

formula	N	Subset for alpha = 0.05			
		1	2	3	4
Formula 7 4%	3	2412.00			
Kontrol - 4%	3	2532.00			
Formula 6 3%	3		2795.67		
Kontrol - 3%	3		2895.67		
Formula 5 2%	3			3512.33	
Kontrol - 2%	3			3623.33	
Kontrol +	3				4407.33
Sig.		.253	.438	.328	1.000

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3,000.

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	132.42595061
Most Extreme Differences	Absolute	.141
	Positive	.076
	Negative	-.141
Test Statistic		.141
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

T-Test

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	sesudah - sebelum	181.048	144.079	31.441	115.464	246.631	5.758	20	.000

Lampiran 24. Hasil SPSS data mutu fisik daya sebar

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
dayasebar	Kontrol +	.346	3	.	.838	3	.209
	Kontrol - 2%	.269	3	.	.949	3	.567
	Kontrol - 3%	.227	3	.	.983	3	.747
	Kontrol - 4%	.285	3	.	.932	3	.497
	Formula 5 2%	.371	3	.	.783	3	.075
	Formula 6 3%	.217	3	.	.988	3	.792
	Formula 7 4%	.276	3	.	.942	3	.537

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
dayasebar	Based on Mean	2.189	6	14	.107
	Based on Median	.308	6	14	.922
	Based on Median and with adjusted df	.308	6	7.217	.914
	Based on trimmed mean	1.928	6	14	.146

ANOVA

dayasebar

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.242	6	1.874	60.869	.000
Within Groups	.431	14	.031		
Total	11.673	20			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: dayasebar

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol +	Kontrol - 2%	-.75000*	.14325	.002	-1.2391	-.2609
	Kontrol - 3%	-1.28333*	.14325	.000	-1.7725	-.7942
	Kontrol - 4%	-1.41667*	.14325	.000	-1.9058	-.9275
	Formula 5 2%	.54333*	.14325	.025	.0542	1.0325
	Formula 6 3%	.28333	.14325	.467	-.2058	.7725
	Formula 7 4%	.15667	.14325	.920	-.3325	.6458
Kontrol - 2%	Kontrol +	.75000*	.14325	.002	.2609	1.2391
	Kontrol - 3%	-.53333*	.14325	.029	-1.0225	-.0442
	Kontrol - 4%	-.66667*	.14325	.005	-1.1558	-.1775
	Formula 5 2%	1.29333*	.14325	.000	.8042	1.7825
	Formula 6 3%	1.03333*	.14325	.000	.5442	1.5225
	Formula 7 4%	.90667*	.14325	.000	.4175	1.3958
Kontrol - 3%	Kontrol +	1.28333*	.14325	.000	.7942	1.7725
	Kontrol - 2%	.53333*	.14325	.029	.0442	1.0225
	Kontrol - 4%	-.13333	.14325	.961	-.6225	.3558
	Formula 5 2%	1.82667*	.14325	.000	1.3375	2.3158
	Formula 6 3%	1.56667*	.14325	.000	1.0775	2.0558
	Formula 7 4%	1.44000*	.14325	.000	.9509	1.9291
Kontrol - 4%	Kontrol +	1.41667*	.14325	.000	.9275	1.9058
	Kontrol - 2%	.66667*	.14325	.005	.1775	1.1558
	Kontrol - 3%	.13333	.14325	.961	-.3558	.6225
	Formula 5 2%	1.96000*	.14325	.000	1.4709	2.4491
	Formula 6 3%	1.70000*	.14325	.000	1.2109	2.1891
	Formula 7 4%	1.57333*	.14325	.000	1.0842	2.0625
Formula 5 2%	Kontrol +	-.54333*	.14325	.025	-1.0325	-.0542
	Kontrol - 2%	-1.29333*	.14325	.000	-1.7825	-.8042
	Kontrol - 3%	-1.82667*	.14325	.000	-2.3158	-1.3375
	Kontrol - 4%	-1.96000*	.14325	.000	-2.4491	-1.4709
	Formula 6 3%	-.26000	.14325	.560	-.7491	.2291
	Formula 7 4%	-.38667	.14325	.169	-.8758	.1025
Formula 6 3%	Kontrol +	-.28333	.14325	.467	-.7725	.2058
	Kontrol - 2%	-1.03333*	.14325	.000	-1.5225	-.5442
	Kontrol - 3%	-1.56667*	.14325	.000	-2.0558	-1.0775
	Kontrol - 4%	-1.70000*	.14325	.000	-2.1891	-1.2109
	Formula 5 2%	.26000	.14325	.560	-.2291	.7491
	Formula 7 4%	-.12667	.14325	.969	-.6158	.3625
Formula 7 4%	Kontrol +	-.15667	.14325	.920	-.6458	.3325
	Kontrol - 2%	-.90667*	.14325	.000	-1.3958	-.4175
	Kontrol - 3%	-1.44000*	.14325	.000	-1.9291	-.9509
	Kontrol - 4%	-1.57333*	.14325	.000	-2.0625	-1.0842
	Formula 5 2%	.38667	.14325	.169	-.1025	.8758
	Formula 6 3%	.12667	.14325	.969	-.3625	.6158

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

Homogeneous Subsets

dayasebar

Tukey HSD[a]

formula	N	Subset for alpha = 0.05			
		1	2	3	4
Formula 5 2%	3	3.8933			
Formula 6 3%	3	4.1533	4.1533		
Formula 7 4%	3	4.2800	4.2800		
Kontrol +	3		4.4367		
Kontrol - 2%	3			5.1867	
Kontrol - 3%	3				5.7200
Kontrol - 4%	3				5.8533
Sig.		.169	.467	1.000	.961

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 25. Hasil SPSS data mutu fisik daya lekat

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
dayalekat	Kontrol +	.333	3	.	.862	3	.274
	Kontrol - 2%	.177	3	.	1.000	3	.962
	Kontrol - 3%	.253	3	.	.964	3	.637
	Kontrol - 4%	.191	3	.	.997	3	.900
	Formula 5 2%	.263	3	.	.955	3	.593
	Formula 6 3%	.187	3	.	.998	3	.915
	Formula 7 4%	.296	3	.	.919	3	.448

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
dayalekat	Based on Mean	1.850	6	14	.161
	Based on Median	.702	6	14	.653
	Based on Median and with adjusted df	.702	6	6.288	.660
	Based on trimmed mean	1.755	6	14	.181

ANOVA

dayalekat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.391	6	.232	23.025	.000
Within Groups	.141	14	.010		
Total	1.532	20			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: dayalekat

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Kontrol +	Kontrol - 2%	.10333	.08192	.858	-.1764	.3831
	Kontrol - 3%	.33667*	.08192	.014	.0569	.6164
	Kontrol - 4%	.58667*	.08192	.000	.3069	.8664
	Formula 5 2%	.40000*	.08192	.004	.1203	.6797
	Formula 6 3%	.58667*	.08192	.000	.3069	.8664
	Formula 7 4%	.77667*	.08192	.000	.4969	1.0564
Kontrol - 2%	Kontrol +	-.10333	.08192	.858	-.3831	.1764
	Kontrol - 3%	.23333	.08192	.133	-.0464	.5131
	Kontrol - 4%	.48333*	.08192	.001	.2036	.7631
	Formula 5 2%	.29667*	.08192	.035	.0169	.5764
	Formula 6 3%	.48333*	.08192	.001	.2036	.7631
	Formula 7 4%	.67333*	.08192	.000	.3936	.9531
Kontrol - 3%	Kontrol +	-.33667*	.08192	.014	-.6164	-.0569
	Kontrol - 2%	-.23333	.08192	.133	-.5131	.0464
	Kontrol - 4%	.25000	.08192	.094	-.0297	.5297
	Formula 5 2%	.06333	.08192	.984	-.2164	.3431
	Formula 6 3%	.25000	.08192	.094	-.0297	.5297
	Formula 7 4%	.44000*	.08192	.001	.1603	.7197
Kontrol - 4%	Kontrol +	-.58667*	.08192	.000	-.8664	-.3069
	Kontrol - 2%	-.48333*	.08192	.001	-.7631	-.2036
	Kontrol - 3%	-.25000	.08192	.094	-.5297	.0297
	Formula 5 2%	-.18667	.08192	.318	-.4664	.0931
	Formula 6 3%	.00000	.08192	1.000	-.2797	.2797
	Formula 7 4%	.19000	.08192	.300	-.0897	.4697
Formula 5 2%	Kontrol +	-.40000*	.08192	.004	-.6797	-.1203
	Kontrol - 2%	-.29667*	.08192	.035	-.5764	-.0169
	Kontrol - 3%	-.06333	.08192	.984	-.3431	.2164
	Kontrol - 4%	.18667	.08192	.318	-.0931	.4664
	Formula 6 3%	.18667	.08192	.318	-.0931	.4664
	Formula 7 4%	.37667*	.08192	.006	.0969	.6564
Formula 6 3%	Kontrol +	-.58667*	.08192	.000	-.8664	-.3069
	Kontrol - 2%	-.48333*	.08192	.001	-.7631	-.2036
	Kontrol - 3%	-.25000	.08192	.094	-.5297	.0297
	Kontrol - 4%	.00000	.08192	1.000	-.2797	.2797
	Formula 5 2%	-.18667	.08192	.318	-.4664	.0931
	Formula 7 4%	.19000	.08192	.300	-.0897	.4697
Formula 7 4%	Kontrol +	-.77667*	.08192	.000	-1.0564	-.4969
	Kontrol - 2%	-.67333*	.08192	.000	-.9531	-.3936
	Kontrol - 3%	-.44000*	.08192	.001	-.7197	-.1603
	Kontrol - 4%	-.19000	.08192	.300	-.4697	.0897
	Formula 5 2%	-.37667*	.08192	.006	-.6564	-.0969
	Formula 6 3%	-.19000	.08192	.300	-.4697	.0897

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

Homogeneous Subsets

dayalekat

Tukey HSD[a]

formula	N	Subset for alpha = 0.05			
		1	2	3	4
Formula 7 4%	3	1.0633			
Kontrol - 4%	3	1.2533	1.2533		
Formula 6 3%	3	1.2533	1.2533		
Formula 5 2%	3		1.4400		
Kontrol - 3%	3		1.5033	1.5033	
Kontrol - 2%	3			1.7367	1.7367
Kontrol +	3				1.8400
Sig.		.300	.094	.133	.858

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran 26. Hasil SPSS antioksidan

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Formula	Statistic	df	Sig.	Statistic	df	Sig.
IC50	Formula 5 2%	.252	3	.	.965	3	.643
	Formula 6 3%	.314	3	.	.893	3	.363
	Formula 7 4%	.177	3	.	1.000	3	.964

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
IC50	Based on Mean	1.593	2	6	.279
	Based on Median	.860	2	6	.470
	Based on Median and with adjusted df	.860	2	3.949	.490
	Based on trimmed mean	1.542	2	6	.288

ANOVA

IC50

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.783	2	.391	1.960	.221
Within Groups	1.198	6	.200		
Total	1.981	8			