L A M P I R A N

Lampiran 1. Determinasi daun katuk

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
BADAN KEBIJAKAN PEMBANGUNAN KESEHATAN
BALAI BESAR PENELITIAN DAN PENGEMBANGAN
TANAMAN OBAT DAN OBAT TRADISIONAL
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Nomor : KM.04.02/2/1564/2022 01 September 2022
Hal : Keterangan Determinasi

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

Merujuk surat Saudara nomor: 899/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	: Denisa Senovelya Nita Rifanda
Nama Sampel	: Katuk
Sampel	: Tanaman Segar
Spesies	: *Breynia androgyna* (L.) Chakrab. & N.P.Balakr.
Sinonim	: *Sauropus androgynus* (L.) Merr.
Familia	: Phyllanthaceae
Penanggung Jawab	: Nina Kurnianingrum, S.Si.

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. Perhitungan simplisia kering daun katuk

Hasil perhitungan rendemen simplisia kering daun katuk

Sampel	Daun katuk (gram)	Simplisia kering (gram)	Rendemen (%)
Daun katuk	15.210	7.180	47,205

Daun katuk = 15.210 gram

Simplisia kering = 7.180gram

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

$$\% \text{ rendemen} = \frac{7.180 \text{ gram}}{15.210 \text{ gram}} \times 100\% = 47{,}205\%$$

Lampiran 3. Perhitungan rendemen serbuk terhadap daun kering

Berat kering (gram)	Berat serbuk (gram)	Rendemen (%)
7.180	1.585	22,075

Bobot kering = 7.180 gram

Bobot serbuk = 1.585 gram

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

$$\% \text{ rendemen} = \frac{1.585 \text{ gram}}{7.180 \text{ gram}} \times 100\% = 22,\ 075\%$$

Lampiran 4. Perhitungan dan gambar susut pengeringan serbuk daun katuk

Sampel	Replikasi	Berat sampel (gram)	Susut pengeringan (%)
Serbuk	1	2,00	8,5
	2	2,00	8,5
	3	2,00	8,9
		Rata-rata	8,63 ± 0,0023

Perhitungan susut pengeringan dengan menggunakan alat *moisture balance*

$$\text{Rata-rata susut pengeringan} = \frac{8,5\%+8,5\%+8,9\%}{3}$$

$$= 8,63\%$$



Lampiran 5. Gambar bahan dan alat penelitian

<table>
<tr><td colspan="2">Bahan</td></tr>
<tr><td>a. Gambar tanaman katuk
  </td><td>b. Simplisia kering daun katuk
  </td></tr>
<tr><td>c. Serbuk daun katuk
  </td><td>d. Ekstrak daun katuk
  </td></tr>
<tr><td>e. Gambar Larutan DPPH
  </td><td>f. Gambar Etanol p.a
  </td></tr>
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Lampiran 6. Gambar proses ekstraksi



Lampiran 7. Hasil Perhitungan rendemen ekstrak etanol daun katuk

Sampel	Bobot serbuk (gram)	Bobot ekstrak (gram)	Rendemen ekstrak (%)
Daun katuk	600	136	22,66

Perhitungan rendemen ekstrak

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

$$= \frac{136 \text{ gram}}{600 \text{ gram}} \text{ x } 100\% = 22{,}66\ \%$$

Lampiran 8. Hasil dan gambar perhitungan kadar air ekstrak etanol daun katuk

Replikasi	Bobot botol kosong (gram)	Bobot botol + ekstrak	Bobot ekstrak (gram)	Oven 5 jam (gram)	Oven 1 jam (gram)	Oven 1 jam (gram)
1	65,5210	75,5407	10,0197	9,7436	9,5134	9,4872
2	65,5315	75,5429	10,0114	9,7769	9,5432	9,5088
3	65,5415	75,5524	10,0109	9,7188	9,5268	9,4839

Replikasi 1

- Bobot kurs kosong = 65,5210 gram
- Bobot krus + ekstrak sebelum dioven = 75,5407 gram
- Bobot awal ekstrak = 10,0197 gram
- Bobot krus + ekstrak setelah dioven = 75.0099
- Bobot ekstrak akhir = 9,4872 gram

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

$$= \frac{10{,}0197\text{-}9{,}4872}{10{,}0197} \text{ x } 100\%$$

= 5,31 %

Replikasi 2

- Bobot kurs kosong = 65,5315 gram
- Bobot krus + ekstrak sebelum dioven = 75,5429 gram
- Bobot awal ekstrak = 10,0114 gram
- Bobot krus + ekstrak setelah dioven = 75,0282
- Bobot ekstrak akhir = 9,5088gram

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

$$= \frac{10,0114-9,5088}{10,0114} \text{ x } 100\%$$

= 5,02 %

Replikasi 3

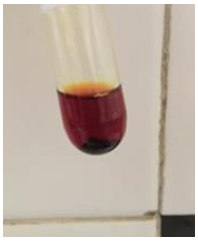
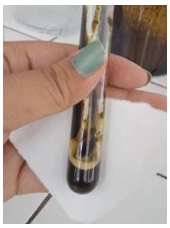
- Bobot kurs kosong = 65,5415 gram
- Bobot krus + ekstrak sebelum dioven = 75,5524 gram
- Bobot awal ekstrak = 10,0109 gram
- Bobot krus + ekstrak setelah dioven = 75,0266
- Bobot ekstrak akhir = 9,4839 gram

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

$$= \frac{10,0109-9,4839}{10,0109} \text{ x } 100\%$$

= 5,26 %

Lampiran 9. Hasil uji identifikasi senyawa kimia serbuk daun katuk

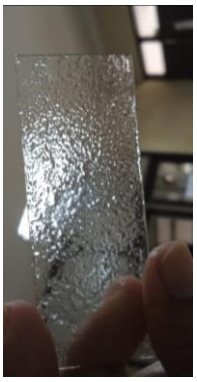
Hasil positif alkaloid (uji bouchardat) 	Hasil positif alkaloid (uji dragendroff) 	Hasil positif flavonoid 
Hasil positif saponin 	Hasil positif tanin 	Hasil positif steroid 

Lampiran 10. Gambar proses pengujian uji mutu fisik masker gel *peel-off* **ekstrak daun katuk**

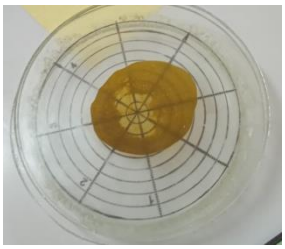
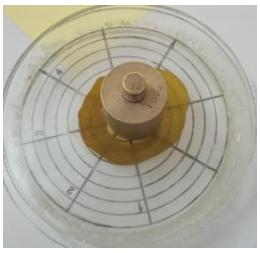
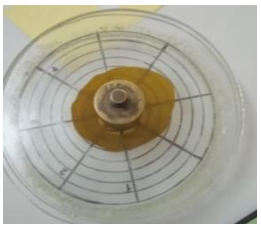
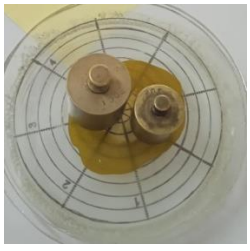
a. Gambar uji organoleptis

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

b. Gambar uji homogenitas masker gel *peel-off*

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
	

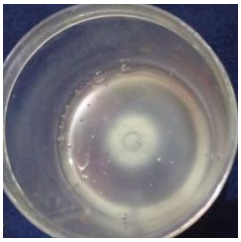
e. Uji *p*H

f. Uji viskositas

g. Uji *cycling test*

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

h. Uji waktu mengering

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

Lampiran 11. 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 0,783

Lampiran 12. Pembuatan larutan stok ekstrak daun katuk

Pembuatan larutan stok ekstrak daun katuk dengan menimbang 50 mg dimasukkan kedalam labu takar dan ditambahkan etanol p.a sampai tanda batas 50 mL, sehingga diperoleh konsentrasi 1.000 ppm. Kemudian dibuat beberapa seri pengenceran yaitu 50 ppm, 60 ppm, 70 ppm, 80 ppm, 90 ppm.

Perhitungan seri pengenceran

1. Konsentrasi 50 ppm

   $V_1 \text{ x } C_1 = V_2 \text{ x } C_2$

   V_1 x 1.000 ppm = 10 ml x 50 ppm

   V_1 = 0,5 mL

2. Konsentrasi 20 ppm

   V_1 x C_1 = V_2 x C_2

   V_1 x 1.000 ppm = 10 ml x 60 ppm

   V_1 = 0,6 mL

3. Konsentrasi 70 ppm

   V_1 x C_1 = V_2 x C_2

   V_1 x 1.000 ppm = 10 ml x 70 ppm

   V_1 = 0,7 mL

4. Konsentrasi 80 ppm

   V_1 x C_1 = V_2 x C_2

   V_1 x 1.000 ppm = 10 ml x 80 ppm

   V_1 = 0,8 mL

5. Konsentrasi 90 ppm

   V_1 x C_1 = V_2 x C_2

   V_1 x 1.000 ppm = 10 ml x 90 ppm

   V_1 = 0,9 mL

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

Pembuatan larutan stok masker gel *peel-off* formula 1-7 dengan menimbang 50 mg dimasukkan kedalam labu ukur dan ditambahkan etanol p.a sampai tanda batas 50 mL, sehingga diperoleh konsentrasi 1.000 ppm. Kemudian dibuat beberapa seri pengenceran yaitu 105 ppm, 110 ppm, 115 ppm, 120 ppm, dan 125 ppm.

Perhitungan seri konsentrasi

1. Konsentrasi 105 ppm

   V_1 x C_1 = V_2 x C_2

   V_1 x 1.000 ppm = 10 ml x 105 ppm

   V_1 = 1,05 mL

2. Konsentrasi 110 ppm

   V_1 x C_1 = V_2 x C_2

   V_1 x 1.000 ppm = 10 ml x 110 ppm

V_1 = 1,1 mL

3. Konsentrasi 115 ppm

$V_1 \times C_1 = V_2 \times C_2$

$V_1 \times 1.000$ ppm = 10 ml x 115 ppm

V_1 = 1,15 mL

4. Konsentrasi 120 ppm

$V_1 \times C_1 = V_2 \times C_2$

$V_1 \times 1.000$ ppm = 10 ml x 120 ppm

V_1 = 1,2 mL

5. Konsentrasi 125 ppm

$V_1 \times C_1 = V_2 \times C_2$

$V_1 \times 1.000$ ppm = 10 ml x 125 ppm

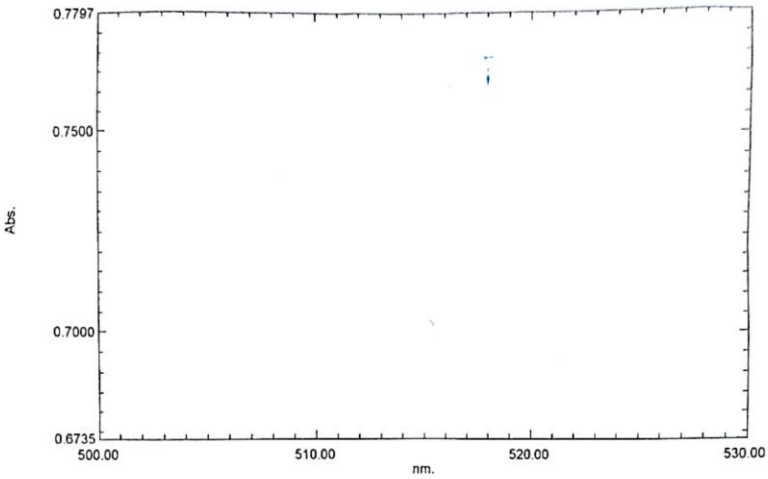
V_1 = 1,25 mL

Lampiran 13. Penentuan panjang gelombang

Spectrum Peak Pick Report

11/18/2022 10:07:35 AM

Data Set: File_220915_170626_100604 - RawData



No.	P/V	Wavelength	Abs.	Description
1	P	518.00	0.7023	

[Measurement Properties]
Wavelength Range (nm.): 500.00 to 530.00
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:

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Lampiran 14. Penentuan *operating time*

a. Ekstrak daun katuk

Time (Minute)	RawData	Time (Minute)	RawData
0	0,786	**31**	0,774
1	0,784	**32**	0,774
2	0,784	**33**	0,773
3	0,785	**34**	0,773
4	0,785	**35**	0,774
5	0,785	**36**	0,773
6	0,785	**37**	0,773
7	0,785	**38**	0,772
8	0,783	**39**	0,772
9	0,783	**40**	0,772
10	0,782	**41**	0,772
11	0,782	**42**	0,771
12	0,781	**43**	0,771
13	0781	**44**	0,771
14	0,780	**45**	0,771
15	0,780	**46**	0,771
16	0,779	**47**	0,770
17	0,779	**48**	0,770
18	0,779	**49**	0,770
19	0,778	**50**	0,770
20	0,778	**51**	0,770
21	0,777	**52**	0,770
22	0,777	**53**	0,770
23	0,777	**54**	0,769
24	0,776	**55**	0,769
25	0,776	**56**	0,769
26	0,775	**57**	0,769
27	0,775	**58**	0,769
28	0,775	**59**	0,768
29	0,775	**60**	0,768
30	0,774		

b. Formula 1 (Gelatin 5%, HPMC 2,5%)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,543	**31**	0,691
1	0,551	**32**	0,694
2	0,554	**33**	0,698
3	0,563	**34**	0,700
4	0,569	**35**	0,703
5	0,575	**36**	0,706
6	0,576	**37**	0,709
7	0,580	**38**	0,712
8	0,581	**39**	0,715
9	0,588	**40**	0,717
10	0,593	**41**	0,720
11	0,601	**42**	0,723
12	0,608	**43**	0,725
13	0,611	**44**	0,728
14	0,623	**45**	0,732
15	0,631	**46**	0,733
16	0,636	**47**	0,735
17	0,642	**48**	0,737
18	0,647	**49**	0,739
19	0,650	**50**	0,741
20	0,653	**51**	0,744
21	0,656	**52**	0,745
22	0,660	**53**	0,748
23	0,665	**54**	0,750
24	0,665	**55**	0,752
25	0,670	**56**	0,754
26	0,675	**57**	0,756
27	0,679	**58**	0,759
28	0,681	**59**	0,761
29	0,684	**60**	0,764
30	0,687		

c. Formula 2 (Gelatin 3,75%, HPMC 3,75%)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,751	**31**	0,743
1	0,748	**32**	0,742
2	0,746	**33**	0,742
3	0,747	**34**	0,742
4	0,748	**35**	0,742
5	0,747	**36**	0,741
6	0,748	**37**	0,742
7	0,747	**38**	0,741
8	0,746	**39**	0,741
9	0,746	**40**	0,741
10	0,746	**41**	0,741
11	0,746	**42**	0,741
12	0,746	**43**	0,741
13	0746	**44**	0,740
14	0,746	**45**	0,740
15	0,746	**46**	0,740
16	0,745	**47**	0,740
17	0,745	**48**	0,740
18	0,745	**49**	0,740
19	0,745	**50**	0,740
20	0,745	**51**	0,740
21	0,745	**52**	0,739
22	0,745	**53**	0,739
23	0,745	**54**	0,739
24	0,744	**55**	0,739
25	0,744	**56**	0,739
26	0,744	**57**	0,739
27	0,743	**58**	0,739
28	0,743	**59**	0,739
29	0,743	**60**	0,739
30	0,743		

d. Formula 3 (Gelatin 2,5%, HPMC 5%)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,576	**31**	0,545
1	0,570	**32**	0,545
2	0,567	**33**	0,544
3	0,564	**34**	0,544
4	0,562	**35**	0,544
5	0,560	**36**	0,544
6	0,559	**37**	0,543
7	0,557	**38**	0,543
8	0,556	**39**	0,543
9	0,554	**40**	0,543
10	0,554	**41**	0,543
11	0,553	**42**	0,542
12	0,552	**43**	0,542
13	0,552	**44**	0,542
14	0,551	**45**	0,542
15	0,550	**46**	0,541
16	0,550	**47**	0,542
17	0,549	**48**	0,541
18	0,549	**49**	0,541
19	0,548	**50**	0,541
20	0,548	**51**	0,541
21	0,548	**52**	0,541
22	0,547	**53**	0,541
23	0,547	**54**	0,541
24	0,547	**55**	0,540
25	0,547	**56**	0,540
26	0,546	**57**	0,540
27	0,546	**58**	0,540
28	0,546	**59**	0,540
29	0,545	**60**	0,540
30	0,545		

e. Formula 4 (Gelatin 5%, HPMC 2,5% + ekstrak)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,573	**31**	0,522
1	0,568	**32**	0,521
2	0,562	**33**	0,520
3	0,559	**34**	0,520
4	0,557	**35**	0,519
5	0,554	**36**	0,518
6	0,553	**37**	0,518
7	0,549	**38**	0,517
8	0,549	**39**	0,516
9	0,546	**40**	0,516
10	0,544	**41**	0,515
11	0,543	**42**	0,515
12	0,541	**43**	0,514
13	0,540	**44**	0,514
14	0,539	**45**	0,513
15	0,537	**46**	0,513
16	0,536	**47**	0,513
17	0,535	**48**	0,512
18	0,534	**49**	0,512
19	0,533	**50**	0,511
20	0,532	**51**	0,511
21	0,531	**52**	0,510
22	0,530	**53**	0,510
23	0,529	**54**	0,509
24	0,528	**55**	0,509
25	0,527	**56**	0,508
26	0,526	**57**	0,508
27	0,525	**58**	0,507
28	0,524	**59**	0,507
29	0,523	**60**	0,507
30	0,522		

f. Formula 5 (Gelatin 3,75%, HPMC 3,75% + ekstrak)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,826	**31**	0,811
1	0,824	**32**	0,811
2	0,823	**33**	0,810
3	0,821	**34**	0,810
4	0,822	**35**	0,810
5	0,822	**36**	0,809
6	0,821	**37**	0,809
7	0,820	**38**	0,809
8	0,821	**39**	0,808
9	0,820	**40**	0,808
10	0,819	**41**	0,808
11	0,819	**42**	0,807
12	0,818	**43**	0,807
13	0,818	**44**	0,807
14	0,818	**45**	0,807
15	0,817	**46**	0,806
16	0,818	**47**	0,806
17	0,817	**48**	0,806
18	0,816	**49**	0,806
19	0,816	**50**	0,805
20	0,815	**51**	0,805
21	0,815	**52**	0,805
22	0,815	**53**	0,804
23	0,814	**54**	0,804
24	0,814	**55**	0,804
25	0,813	**56**	0,804
26	0,813	**57**	0,803
27	0,813	**58**	0,803
28	0,812	**59**	0,803
29	0,811	**60**	0,803
30	0,811		

g. Formula 6 (Gelatin 2,5%, HPMC 5% + ekstrak)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,782	**31**	0,779
1	0,783	**32**	0,780
2	0,782	**33**	0,780
3	0,782	**34**	0,779
4	0,782	**35**	0,779
5	0,781	**36**	0,779
6	0,781	**37**	0,780
7	0,780	**38**	0,779
8	0,780	**39**	0,779
9	0,780	**40**	0,780
10	0,780	**41**	0,780
11	0,780	**42**	0,779
12	0,780	**43**	0,780
13	0779	**44**	0,780
14	0,780	**45**	0,780
15	0,780	**46**	0,780
16	0,780	**47**	0,780
17	0,780	**48**	0,780
18	0,780	**49**	0,780
19	0,779	**50**	0,779
20	0,780	**51**	0,780
21	0,779	**52**	0,780
22	0,779	**53**	0,780
23	0,779	**54**	0,780
24	0,779	**55**	0,780
25	0,780	**56**	0,780
26	0,780	**57**	0,781
27	0,780	**58**	0,780
28	0,779	**59**	0,780
29	0,779	**60**	0,780
30	0,779		

h. Formula 7 (Kontrol +)

Time (Minute)	RawData	Time (Minute)	RawData
0	0,729	**31**	0,675
1	0,723	**32**	0,675
2	0,714	**33**	0,675
3	0,705	**34**	0,674
4	0,704	**35**	0,674
5	0,700	**36**	0,674
6	0,696	**37**	0,674
7	0,695	**38**	0,773
8	0,693	**39**	0,773
9	0,692	**40**	0,773
10	0,690	**41**	0,672
11	0,688	**42**	0,672
12	0,687	**43**	0,671
13	0,686	**44**	0,671
14	0,685	**45**	0,671
15	0,683	**46**	0,670
16	0,683	**47**	0,670
17	0,683	**48**	0,670
18	0,682	**49**	0,670
19	0,681	**50**	0,670
20	0,680	**51**	0,670
21	0,680	**52**	0,669
22	0,679	**53**	0,669
23	0,679	**54**	0,669
24	0,678	**55**	0,669
25	0,678	**56**	0,669
26	0,677	**57**	0,669
27	0,676	**58**	0,669
28	0,676	**59**	0,669
29	0,676	**60**	0,669
30	0,676		

Lampiran 15. Hasil pengujian aktivitas antioksidan ekstrak daun katuk, formula I, II, III, IV, V, VI, dan VII

1. Ekstrak daun katuk

Absorbansi blanko (DPPH) = 0,783

Ekstrak daun katuk			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
50	0,783	0,714	8,81226
60	0,783	0,684	12,64367
70	0,783	0,534	31,80076
80	0,783	0,489	37,54789
90	0,783	0,32	59,13154

a = -57,89272
b = 1,25542
r = 0,97468

Ekstrak daun katuk			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
50	0,783	0,713	8,93007
60	0,783	0,686	12,38825
70	0,783	0,533	31,92848
80	0,783	0,488	37,67560
90	0,783	0,319	59,25925

a = -58,10983
b = 1,25925
r = 0,97373

Ekstrak daun katuk			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
50	0,783	0,716	8,55683
60	0,783	0,685	12,51596
70	0,783	0,555	329,11877
80	0,783	0,487	37,80332
90	0,783	0,321	59,00383

a = -58,92720
b = 1,26181
r = 0,97741

Hasil perhitungan regresi linier :

a = -58,30991

b = 1,25882

r = 0,97527

y = a + bx

50 = -58,30991 + 1,25882x

x = (50 – (-58,30991)) / 1,25882

x = 86,04 ppm

2. Formula 1 (Gelatin 5%, HPMC 2,5%)

Absorbansi blanko (DPPH) = 0,753

Formula 1 (Gelatin 5%, HPMC 2,5%)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,72	4,38247
110	0,753	0,695	7,70252
115	0,753	0,685	9,03054
120	0,753	0,669	11,15533
125	0,753	0,649	13,81142

a = -42,09827
b = 0,44621
r = 0,99215

Formula 1 (Gelatin 5%, HPMC 2,5%)			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,718	4,64807
110	0,753	0,699	7,17131
115	0,753	0,68	9,69455
120	0,753	0,667	11,42098
125	0,753	0,65	13,67861

a = -41,99203
b = 0,44621
r = 0,99781

Formula 1 (Gelatin 5%, HPMC 2,5%)			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,716	4,91367
110	0,753	0,697	7,43691
115	0,753	0,678	9,96015
120	0,753	0,665	11,68658
125	0,753	0,648	13,94422

a = -41,72642
b = 0,44621
r = 0,99781

Hasil perhitungan regresi linier konsentrasi dengan % inhibisi diperoleh nilai :

a = -41,93890

b = 0,44621

r = 0,99592

y = a + bx

50 = -41,93890 + 0,44621x

x = (50 – (-41,93890) / 0,44621

x = 206,04 ppm

3. Formula 2 (Gelatin 3,75%, HPMC 3,75%)

Absorbansi blanko (DPPH) = 0,743

Formula 2 (Gelatin 3,75%, HPMC 3,75%)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,701	6,90571
110	0,753	0,687	8.76494
115	0,753	0,677	10,09296
120	0,753	0,667	11,42098
125	0,753	0,639	15,13944

a = -35,51925
b = 0,382470
r = 0,975112

Formula 2			
Replikasi 2 (Gelatin 3,75%, HPMC 3,75%)			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,703	6,64010
110	0,753	0,685	9,03054
115	0,753	0,678	9,96015
120	0,753	0,665	11,68658
125	0,753	0,64	15,00664

a = -34,13014
b = 0,387782
r = 0,981037

Replikasi 3 (Gelatin 3,75%, HPMC 3,75%)			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,706	6,90571
110	0,753	0,687	8.76494
115	0,753	0,675	10,09296
120	0,753	0,663	11,42098
125	0,753	0,642	15,13944

a = -36,01593
b = 0,403718
r = 0,994250

Hasil perhitungan regresi linier konsentrasi dengan % inhibisi diperoleh nilai :

a = -34,55510

b = 0,391323

r = 0,989834

y = a + bx

50 = -34,55510 + 0,391323x

x = (50 – (-34,55510)) / 0,391323

x = 216,07 ppm

4. Formula 3 (Gelatin 2,5%, HPMC 2,5%)

Absorbansi blanko (DPPH) = 0,753

Formula 3 (Gelatin 2,5%, HPMC 2,5%)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,699	7,17131
110	0,753	0,678	9,96015
115	0,753	0,67	11.02257
120	0,753	0,648	13,94422
125	0,753	0,631	16,20185

a = -39,04382
b = 0,440903
r = 0,992962

Formula 3 (Gelatin 2,5%, HPMC 2,5%)			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,698	7,30411
110	0,753	0,675	10,35856
115	0,753	0,669	11,15537
120	0,753	0,646	14,20982
125	0,753	0,634	15,80345

a = -36,18557
b = 0,416998
r = 0,987988

Formula 3 (Gelatin 2,5%, HPMC 2,5%)			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,753	0,696	7,56972
110	0,753	0,679	9,82735
115	0,753	0,665	11,68658
120	0,753	0,644	14,47543
125	0,753	0,632	16,06905

a = -37,86188
b = 0,432934
r = 0,997394

Hasil perhitungan regresi linier :

a = -37,69709

b = 0,430278

r = 0,992781

y = a + bx

50 = -37,69709 + 0,430278x

x = 50 – (-37,69709) / 0,430278

x = 203,8 ppm

5. Formula 4 (Gelatin 5%, HPMC 2,5% + ekstrak)

Absorbansi blanko (DPPH) = 0,773

Formula 4 (Gelatin 5%, HPMC 2,5% + ekstrak)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,773	0,745	3,62225
110	0,773	0,697	12,16041
115	0,773	0,593	23,28589
120	0,773	0,486	37,12807
125	0,773	0,378	51,0996

a = -250,36222
b = 2,39844
r = 0,99520

Formula 4 (Gelatin 5%, HPMC 2,5% + ekstrak)			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,773	0,744	3,75161
110	0,773	0,681	11,90168
115	0,773	0,591	23,54463
120	0,773	0,485	37,25743
125	0,773	0,375	51,48771

a = -252,31565
b = 2,41655
r = 0,99478

Formula 4 (Gelatin 5%, HPMC 2,5% + ekstrak)			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,773	0,742	4,01034
110	0,773	0,676	12,54851
115	0,773	0,589	23,80336
120	0,773	0,488	36,86934
125	0,773	0,373	51,74644

a = -249,72833
b = 2,39586
r = 0,99478

Hasil perhitungan regresi linier :

a = -250,80206

b = 2,40361

r = 0,99492

y = a + bx

50 = -250,80206 + 2,40361x

x = (50 – (-250,80206)) / 2,40361

x = 125,14 ppm

6. Formulasi 5 (Gelatin 3,75%, HPMC 3,75% + ekstrak)

Absorbansi blanko (DPPH) = 0,773

Formula 5 (Gelatin 3,75%, HPMC 3,75% + ekstrak)				
Replikasi 1				
Kons (ppm)	DPPH	absorbansi	%inhibisi	
105	0,773	0,767	0,77619	
110	0,773	0,685	11,38421	a = -274,51487
115	0,773	0,568	26,52005	b = 2,61319
120	0,773	0,471	39,06856	r = 0,99897
125	0,773	0,369	52,26390	

Formula 5 (Gelatin 3,75%, HPMC 3,75% + ekstrak)				
Replikasi 2				
Kons (ppm)	DPPH	absorbansi	%inhibisi	
105	0,773	0,769	0,51746	
110	0,773	0,684	11,51358	a = -275,35575
115	0,773	0,566	26,77878	b = 2,62096
120	0,773	0,469	39,32729	r = 0,99910
125	0,773	0,37	52,13454	

Formula 5 (Gelatin 3,75%, HPMC 3,75% + ekstrak)				
Replikasi 3				
Kons (ppm)	DPPH	absorbansi	%inhibisi	
105	0,773	0,765	1,03492	
110	0,773	0,686	11,25485	a = -274,48900
115	0,773	0,569	26,39068	b = 2,61319
120	0,773	0,472	38,93919	r = 0,99868
125	0,773	0,367	52,52263	

Hasil perhitungan regresi linier :

a = -274,78654

b = 2,61578

r = 0,99891

y = a + bx

50 = -274,78654+ 2,61578x

x = 50 – (-274,78654) / 2,61578

x = 124,16 ppm

7. Formula 6 (Gelatin 2,5%, HPMC 5% + ekstrak)

Absorbansi blanko (DPPH) = 0,773

Formula 6 (Gelatin 2,5%, HPMC 5% + ekstrak)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,773	0,752	2,71668
110	0,773	0,693	10,34928
115	0,773	0,573	25,87322
120	0,773	0,497	35,70504
125	0,773	0,363	53,04010

a = -264,26908
b = 2,52005
r = 0,99262

Formula 6 (Gelatin 2,5%, HPMC 5% + ekstrak)			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,773	0,756	2,19922
110	0,773	0,695	10,09055
115	0,773	0,575	25,61448
120	0,773	0,494	36,09314
125	0,773	0,365	52,78137

a = -267,12807
b = 2,54333
r = 0,99398

Formula 6 (Gelatin 2,5%, HPMC 5% + ekstrak)			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,773	0,759	1,81112
110	0,773	0,698	9,70245
115	0,773	0,571	26,13195
120	0,773	0,492	36,35187
125	0,773	0,367	52,52263

a = -269,26261
b = 2,56144
r = 0,99435

Hasil perhitungan regresi linier konsentrasi dengan % inhibisi diperoleh nilai :

a = -266,88658

b = 2,54160

r = 0,99365

y = a + bx

50 = -266,88658+ 2,54160x

x = 50 – (-266,88658) / 2,54160

x = 124,6 ppm

8. Formula 7 (Kontrol +)

Absorbansi blanko (DPPH) = 0,743

Formula 7 (Kontrol +)			
Replikasi 1			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,743	0,617	16,95827
110	0,743	0,592	20,32301
115	0,743	0,455	38,76177
120	0,743	0,431	41,99192
125	0,743	0,355	52,22072

a = -177,99461
b = 1,84387
r = 0,97397

Formula 7 (Kontrol +)			
Replikasi 2			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,743	0,619	16,68909
110	0,743	0,594	20,05383
115	0,743	0,458	38,35800
120	0,743	0,429	42,26110
125	0,743	0,353	52,48990

a = -181,79004
b = 1,87617
r = 0,97629

Formula 7 (Kontrol +)			
Replikasi 3			
Kons (ppm)	DPPH	absorbansi	%inhibisi
105	0,743	0,614	17,36204
110	0,743	0,588	20,86137
115	0,743	0,46	38,08882
120	0,743	0,434	41,58815
125	0,743	0,351	52,75908

a = -176,36608
b = 1,83041
r = 0,97808

Hasil perhitungan regresi linier konsentrasi dengan % inhibisi diperoleh nilai :

a = -178,71691

b = 1,85015

r = 0,97611

y = a + bx

50 = -178,71691+ 1,85015x

x = 50 – (-178,71691) / 1,85015

x = 123,6 ppm

Lampiran 16. SPSS Viskositas

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
viskositas	foemula1	.276	3	.	.942	3	.537
	formula2	.178	3	.	1.000	3	.960
	formula3	.341	3	.	.846	3	.230
	formula4	.196	3	.	.996	3	.878
	formula5	.211	3	.	.991	3	.817
	formula6	.276	3	.	.942	3	.537
	kontrolPositif	.276	3	.	.942	3	.537

a. Lilliefors Significance Correction

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
viskositas	Based on Mean	4.199	6	14	.013
	Based on Median	.727	6	14	.635
	Based on Median and with adjusted df	.727	6	3.111	.661
	Based on trimmed mean	3.775	6	14	.019

ANOVA

viskositas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8940977.905	6	1490162.984	110.728	.000
Within Groups	188410.667	14	13457.905		
Total	9129388.571	20			

viskositas				
Tukey HSD[a]				
		Subset for alpha = 0.05		
formula	N	1	2	3
kontrolPositif	3	1300.0000		
formula6	3	1320.0000		
formula3	3	1386.6667		
formula4	3	1386.6667		
formula5	3	1503.3333		
formula2	3		2331.3333	
foemula1	3			3140.0000
Sig.		.379	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	15.28257245
Most Extreme Differences	Absolute	.232
	Positive	.117
	Negative	-.232
Test Statistic		.232
Asymp. Sig. (2-tailed)		.004[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	sebelum	1777.5238	21	726.80758	158.60242
	sesudah	1740.9524	21	718.37946	156.76325

Lampiran 17. SPSS Daya Sebar

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
dayasebar	formula1	.175	3	.	1.000	3	1.000
	formula2	.280	3	.	.937	3	.516
	formula3	.353	3	.	.824	3	.174
	formula 4	.224	3	.	.984	3	.762
	formula 5	.311	3	.	.897	3	.377
	formula 6	.219	3	.	.987	3	.780
	kontrolPositif	.337	3	.	.855	3	.253

a. Lilliefors Significance Correction

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
dayasebar	Based on Mean	2.589	6	14	.067
	Based on Median	.660	6	14	.683
	Based on Median and with adjusted df	.660	6	6.932	.685
	Based on trimmed mean	2.385	6	14	.085

ANOVA					
dayasebar					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.249	6	1.208	19.930	.000
Within Groups	.849	14	.061		
Total	8.098	20			

dayasebar				
Tukey HSD[a]				
		Subset for alpha = 0.05		
formula	N		3	4
formula 6	3			
formula 5	3			
formula 4	3			
formula3	3	5.5167		
formula2	3	5.8667	5.8667	
kontrolPositif	3		6.3333	6.3333
formula1	3			6.7000
Sig.		.603	.299	.554

Means for groups in homogene
.ous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.43131587
Most Extreme Differences	Absolute	.122
	Positive	.119
	Negative	-.122
Test Statistic		.122
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.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	sebelum	5.3607	21	.53799	.11740
	sesudah	5.2038	21	.53824	.11745

Lampiran 18. SPSS Daya Lekat

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
dayalekat	formula1	.191	3	.	.997	3	.900
	formula2	.187	3	.	.998	3	.915
	formula3	.338	3	.	.853	3	.248
	formula4	.179	3	.	.999	3	.948
	formula5	.175	3	.	1.000	3	1.000
	formula6	.343	3	.	.842	3	.220
	kontrolPositif	.238	3	.	.976	3	.702

a. Lilliefors Significance Correction

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
dayalekat	Based on Mean	6.998	6	14	.001
	Based on Median	.967	6	14	.481
	Based on Median and with adjusted df	.967	6	2.802	.563
	Based on trimmed mean	6.110	6	14	.003

ANOVA					
dayalekat					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.494	6	.249	14.018	.000
Within Groups	.249	14	.018		
Total	1.743	20			

dayalekat				
Tukey HSD[a]				
		Subset for alpha = 0.05		
formula	N	1	2	3
formula4	3	.7867		
formula2	3	.9133	.9133	
formula1	3	.9200	.9200	
formula5	3	.9700	.9700	
formula6	3	1.0700	1.0700	
kontrolPositif	3		1.2200	
formula3	3			1.6467
Sig.		.186	.131	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.05563133
Most Extreme Differences	Absolute	.101
	Positive	.095
	Negative	-.101
Test Statistic		.101
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.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	sebelum	1.3114	21	.30889	.06741
	sesudah	1.4338	21	.26645	.05814

Lampiran 19. SPSS *p*H

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
ph	formula1	.328	3	.	.871	3	.298
	formula2	.328	3	.	.871	3	.298
	formula3	.292	3	.	.923	3	.463
	formula4	.175	3	.	1.000	3	1.000
	formula5	.253	3	.	.964	3	.637
	formula6	.253	3	.	.964	3	.637
	kontrolPositif	.253	3	.	.964	3	.637

a. Lilliefors Significance Correction

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
ph	Based on Mean	1.967	6	14	.139
	Based on Median	.294	6	14	.930
	Based on Median and with adjusted df	.294	6	7.260	.922
	Based on trimmed mean	1.746	6	14	.183

ANOVA					
ph					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.703	6	.784	16.626	.000
Within Groups	.660	14	.047		
Total	5.363	20			

ph				
Tukey HSD[a]				
		Subset for alpha = 0.05		
formula	N	1	2	3
formula5	3	6.2667		
formula6	3	6.3333		
formula4	3		6.9000	
kontrolPositif	3		7.0333	7.0333
formula2	3		7.2667	7.2667
formula3	3		7.4333	7.4333
formula1	3			7.5667
Sig.		1.000	.102	.102

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.07262022
Most Extreme Differences	Absolute	.209
	Positive	.131
	Negative	-.209
Test Statistic		.209
Asymp. Sig. (2-tailed)		.018[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	sebelum	6.9714	21	.51783	.11300
	sesudah	6.7548	21	.49948	.10899

Lampiran 20. SPSS waktu mongering

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	formula	Statistic	df	Sig.	Statistic	df	Sig.
waktumengering	formula1	.224	3	.	.984	3	.762
	formula2	.215	3	.	.989	3	.800
	formula3	.284	3	.	.934	3	.503
	formula4	.177	3	.	1.000	3	.962
	formula5	.299	3	.	.915	3	.433
	formula6	.230	3	.	.981	3	.736
	formula7	.202	3	.	.994	3	.851

a. Lilliefors Significance Correction

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		21
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.05849342
Most Extreme Differences	Absolute	.139
	Positive	.120
	Negative	-.139
Test Statistic		.139
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.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	sebelum	22.0614	21	1.62482	.35457
	sesudah	21.9548	21	1.66180	.36263