

L A M P I R A N

Lampiran

Lampiran 1. Surat keterangan determinasi jambu biji



KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
BADAN KEBIJAKAN PEMBANGUNAN KESEHATAN
BALAI BESAR PENELITIAN DAN PENGEMBANGAN
TANAMAN OBAT DAN OBAT TRADISIONAL
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Nomor : KM.04.02/2/1358/2022
Hal : Keterangan Determinasi

27 Juli 2022

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

Merujuk surat Saudara nomor: 845/H6-04/22.07.2022 tanggal 22 Juli 2022 hal permohonan determinasi, dengan ini kami sampaikan bahwa hasil determinasi sampel tanaman sebagai berikut:

Nama Pemohon : Mitha Oktavia Mandasari
Nama Sampel : Jambu Biji
Sampel : Tanaman Segar
Spesies : *Psidium guajava* L.
Sinonim : *Guajava pumila* Kuntze
Familia : Myrtaceae
Penanggung Jawab : Nina Kurnianingrum, S.Si.

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

Atas perhatian Saudara, kami sampaikan terima kasih.

Kepala Balai Besar Penelitian
dan Pengembangan Tanaman Obat
dan Obat Tradisional
Tawangmangu



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

Lampiran 2. Ekstraksi enzim SOD daun jambu biji**Pengambilan sampel****Pencucian****Pemotongan****Penimbangan****Pemblenderan****Penyaringan**

**Filtrat****Sentrifugasi****Hasil sentrifugasi****Ekstrak kasar/supernatan**

Lampiran 3. Pembuatan larutan buffer fosfat pH 7,2

NaCl ditimbang sebanyak 4,4 gram, Na_2HPO_4 sebanyak 1,5 gram, dan NaH_2PO_4 sebanyak 0,075 gram. Kemudian ketiga bahan tersebut dilarutkan dengan aquabidest dalam beaker glass dan dituang pada labu ukur 500 mL



Lampiran 4. Penimbangan konsentrasi amonium sulfat

Initial concentration of ammonium sulfate (percentage saturation at 0 °C)	Percentage saturation at 0 °C															
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	100
	Solid ammonium sulfate (g) to be added to 1 l of solution															
0	136	134	164	194	226	258	291	326	361	398	436	476	516	559	603	650
5	79	108	137	166	197	229	262	296	331	368	405	444	484	526	570	617
10	53	81	109	139	169	201	235	269	304	339	374	412	452	493	536	581
15	26	54	82	111	141	172	204	237	271	306	343	381	420	461	503	547
20	0	27	55	83	113	143	175	207	241	276	312	349	387	427	469	512
25		0		56	84	115	146	179	211	245	280	317	355	395	436	478
30			0	28	56	86	117	148	181	214	249	285	321	362	402	445
35				0	29	57	87	118	151	184	218	254	291	329	369	410
40					0	29	58	89	120	153	187	222	258	296	335	376
45						0	29	59	90	123	156	190	226	263	302	342
50							0	30	90	125	159	194	230	268	308	348
55								0	30	121	161	197	233	271	311	351
60									0	31	122	162	198	234	272	312
65										0	31	123	163	200	273	313
70											0	32	164	201	274	314
75												0	32	165	275	315
80													0	33	166	316
85														0	34	167
90															0	168
95																0
100																0

(Dawson *et al.*, 1969)

Penimbangan konsentrasi amonium sulfat adalah sebagai berikut:

1. Konsentrasi 25%

$$= \frac{30 \text{ mL} \times 134 \text{ gram}}{1000 \text{ mL}} = 4,02 \text{ gram}$$
2. Konsentrasi 50%

$$= \frac{30 \text{ mL} \times 291 \text{ gram}}{1000 \text{ mL}} = 8,73 \text{ gram}$$
3. Konsentrasi 75%

$$= \frac{30 \text{ mL} \times 476 \text{ gram}}{1000 \text{ mL}} = 14,28 \text{ gram}$$

Lampiran 5. Hasil pelet dan supernatan presipitasi amonium sulfat

(Pelet)



(Supernatan)

Lampiran 6. Pembuatan reagen *Lowry*

Komposisi reagen *Lowry* adalah sebagai berikut:

1. Reagen *Lowry* A = 2% Na_2CO_3 + 0,10 N NaOH
2. Reagen *Lowry* B = 0,5% $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ + 1% Natrium Kalium Tartrat
3. Reagen *Lowry* C = 50 mL reagen A + 1 mL reagen B
4. Reagen *Lowry* D = 10 mL *Folin-Ciocalteu*phenol + 10 mL aquabidest



Lampiran 7. Pembuatan larutan induk

Larutan induk = 50 mg/50 ml
= 50.000 mg/50.000 ml
= 1.000 ppm

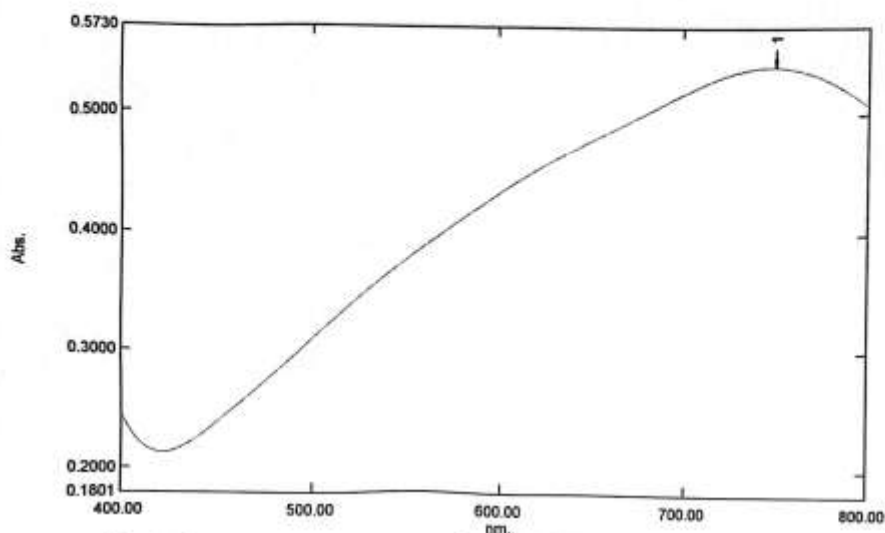


Lampiran 8. Hasil Panjang gelombang maksimum

Spectrum Peak Pick Report

10/20/2022 11:05:14 AM

Data Set: File_220915_170626_110252 - RawData



[Measurement Properties]
 Wavelength Range (nm.): 400.00 to 800.00
 Scan Speed: Fast
 Sampling Interval: 1.0
 Auto Sampling Interval: Disabled
 Scan Mode: Auto

No.	P/V	Wavelength	Abs.	Description
1		750.00	0.5402	
2		422.00	0.2128	

[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:

Lampiran 9. Hasil *operating time*

Kinetics Data Print Report

10/21/2022 10:42:51 AM

Time (Minute)	RawData ...
0.000	0.354
1.000	0.360
2.000	0.367
3.000	0.372
4.000	0.377
5.000	0.381
6.000	0.385
7.000	0.388
8.000	0.391
9.000	0.394
10.000	0.397
11.000	0.400
12.000	0.403
13.000	0.406
14.000	0.409
15.000	0.411
16.000	0.413
17.000	0.415
18.000	0.417
19.000	0.418
20.000	0.420
21.000	0.422
22.000	0.423
23.000	0.425
24.000	0.426
25.000	0.428
26.000	0.429
27.000	0.430
28.000	0.432
29.000	0.433
30.000	0.435
31.000	0.436
32.000	0.436
33.000	0.438
34.000	0.439
35.000	0.440
36.000	0.441
37.000	0.442
38.000	0.443
39.000	0.444
40.000	0.445
41.000	0.445
42.000	0.446
43.000	0.447
44.000	0.448
45.000	0.449

Lampiran 10. Pembuatan seri konsentrasi kurva baku

$$V_1 \times N_1 = V_2 \times N_2$$

1. 50 ppm

$V_1 \times 1.000 \text{ ppm}$	$= 10 \text{ mL} \times 50 \text{ ppm}$
$1.000V_1$	$= 500$
V_1	$= 500/1.000$
V_1	$= 0,5 \text{ mL}$
2. 75 ppm

$V_1 \times 1.000 \text{ ppm}$	$= 10 \text{ mL} \times 75 \text{ ppm}$
$1.000V_1$	$= 750$
V_1	$= 750/1.000$
V_1	$= 0,75 \text{ mL}$
3. 100 ppm

$V_1 \times 1.000 \text{ ppm}$	$= 10 \text{ mL} \times 100 \text{ ppm}$
$1.000V_1$	$= 1.000$
V_1	$= 1.000/1.000$
V_1	$= 1 \text{ mL}$
4. 125 ppm

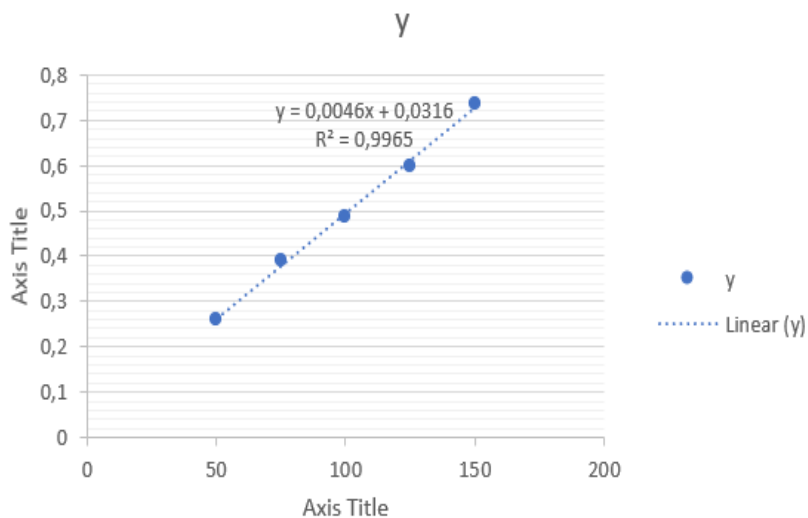
$V_1 \times 1.000 \text{ ppm}$	$= 10 \text{ mL} \times 125 \text{ ppm}$
$1.000V_1$	$= 1.250$
V_1	$= 1.250/1.000$
V_1	$= 1,25 \text{ mL}$
5. 150 ppm

$V_1 \times 1.000 \text{ ppm}$	$= 10 \text{ mL} \times 150 \text{ ppm}$
$1.000V_1$	$= 1.500$
V_1	$= 1.500/1.000$
V_1	$= 1,5 \text{ mL}$



Lampiran 11. Hasil absorbansi kurva baku

Konsentrasi (ppm)	Absorbansi
50	0,262
75	0,390
100	0,489
125	0,597
150	0,738



Lampiran 12. Hasil absorbansi kadar protein enzim SOD daun jambu biji

No.	Sampel	Absorbansi	Rata-rata Absorbansi
1.	Ekstrak kasar	0,477 0,475 0,479	0,477
2.	Konsentrasi amonium sulfat		
	a. Konsentrasi 25%	0,354 0,349 0,352	0,352
	b. Konsentrasi 50%	0,435 0,439 0,441	0,438
	c. Konsentrasi 75%	0,555 0,551 0,544	0,550

Lampiran 13. Perhitungan kadar protein total enzim SOD daun jambu biji

$$y = 0,0316 + 0,0046x$$

1. Ekstrak kasar

a. Replikasi I

$$\begin{aligned} y &= 0,0316 + 0,0046x \\ 0,477 &= 0,0316 + 0,0046x \\ 0,477 - 0,0316 &= 0,0046x \\ x &= 0,4454 / 0,0046 \\ &= 96,83 \mu\text{g/mL} \\ &= 96,83 \times \text{fp} \\ &= 96,83 \times 100 \\ &= 9.683 \mu\text{g/ml} \\ &= 9,683 \text{ mg/mL} \end{aligned}$$

b. Replikasi II

$$\begin{aligned} y &= 0,0316 + 0,0046x \\ 0,475 &= 0,0316 + 0,0046x \\ 0,475 - 0,0316 &= 0,0046x \\ x &= 0,4434 / 0,0046 \\ &= 96,39 \mu\text{g/mL} \\ &= 96,39 \times \text{fp} \\ &= 96,39 \times 100 \\ &= 9.639 \mu\text{g/ml} \\ &= 9,639 \text{ mg/mL} \end{aligned}$$

c. Replikasi III

$$\begin{aligned} y &= 0,0316 + 0,0046x \\ 0,479 &= 0,0316 + 0,0046x \\ 0,479 - 0,0316 &= 0,0046x \\ x &= 0,4474 / 0,0046 \\ &= 97,26 \mu\text{g/mL} \\ &= 97,26 \times \text{fp} \\ &= 97,26 \times 100 \\ &= 9.726 \mu\text{g/ml} \\ &= 9,726 \text{ mg/mL} \end{aligned}$$

2. Konsentrasi 25%

a. Replikasi I

$$\begin{aligned} y &= 0,0316 + 0,0046x \\ 0,354 &= 0,0316 + 0,0046x \end{aligned}$$

$$\begin{aligned}
 0,354-0,0316 &= 0,0046x \\
 x &= 0,3224/0,0046 \\
 &= 70,09 \mu\text{g/mL} \\
 &= 70,09 \times \text{fp} \\
 &= 70,09 \times 100 \\
 &= 7.009 \mu\text{g/ml} \\
 &= 7,009 \text{ mg/mL}
 \end{aligned}$$

b. Replikasi II

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,349 &= 0,0316 + 0,0046x \\
 0,349-0,0316 &= 0,0046x \\
 x &= 0,3174/0,0046 \\
 &= 69 \mu\text{g/mL} \\
 &= 69 \times \text{fp} \\
 &= 69 \times 100 \\
 &= 6.900 \mu\text{g/ml} \\
 &= 6,900 \text{ mg/mL}
 \end{aligned}$$

c. Replikasi III

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,352 &= 0,0316 + 0,0046x \\
 0,352-0,0316 &= 0,0046x \\
 x &= 0,3204/0,0046 \\
 &= 69,65 \mu\text{g/mL} \\
 &= 69,65 \times \text{fp} \\
 &= 69,65 \times 100 \\
 &= 6.965 \mu\text{g/ml} \\
 &= 6,965 \text{ mg/mL}
 \end{aligned}$$

3. Konsentrasi 50%

a. Replikasi I

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,435 &= 0,0316 + 0,0046x \\
 0,435-0,0316 &= 0,0046x \\
 x &= 0,4034/0,0046 \\
 &= 87,69 \mu\text{g/mL} \\
 &= 87,69 \times \text{fp} \\
 &= 87,69 \times 100 \\
 &= 8.769 \mu\text{g/ml} \\
 &= 8,769 \text{ mg/mL}
 \end{aligned}$$

b. Replikasi II

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,439 &= 0,0316 + 0,0046x \\
 0,439 - 0,0316 &= 0,0046x \\
 x &= 0,4074 / 0,0046 \\
 &= 88,56 \mu\text{g/mL} \\
 &= 88,56 \times \text{fp} \\
 &= 88,56 \times 100 \\
 &= 8.856 \mu\text{g/ml} \\
 &= 8,856 \text{ mg/mL}
 \end{aligned}$$

c. Replikasi III

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,441 &= 0,0316 + 0,0046x \\
 0,441 - 0,0316 &= 0,0046x \\
 x &= 0,4094 / 0,0046 \\
 &= 89 \mu\text{g/mL} \\
 &= 89 \times \text{fp} \\
 &= 89 \times 100 \\
 &= 8.900 \mu\text{g/ml} \\
 &= 8,900 \text{ mg/mL}
 \end{aligned}$$

4. Konsentrasi 75%

a. Replikasi I

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,555 &= 0,0316 + 0,0046x \\
 0,555 - 0,0316 &= 0,0046x \\
 x &= 0,5234 / 0,0046 \\
 &= 113,78 \mu\text{g/mL} \\
 &= 113,78 \times \text{fp} \\
 &= 113,78 \times 100 \\
 &= 11.378 \mu\text{g/ml} \\
 &= 11,378 \text{ mg/mL}
 \end{aligned}$$

b. Replikasi II

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,551 &= 0,0316 + 0,0046x \\
 0,551 - 0,0316 &= 0,0046x \\
 x &= 0,5194 / 0,0046
 \end{aligned}$$

$$\begin{aligned}
 &= 112,91 \mu\text{g/mL} \\
 &= 112,91 \times \text{fp} \\
 &= 112,91 \times 100 \\
 &= 11.291 \mu\text{g/ml} \\
 &= 11,291 \text{ mg/mL}
 \end{aligned}$$

c. Replikasi III

$$\begin{aligned}
 y &= 0,0316 + 0,0046x \\
 0,544 &= 0,0316 + 0,0046x \\
 0,544 - 0,0316 &= 0,0046x \\
 x &= 0,5124 / 0,0046 \\
 &= 111,39 \mu\text{g/mL} \\
 &= 111,39 \times \text{fp} \\
 &= 111,39 \times 100 \\
 &= 11.139 \mu\text{g/ml} \\
 &= 11,139 \text{ mg/mL}
 \end{aligned}$$

Lampiran 14. Hasil SPSS kadar protein total

Sampel	Kadar (mg/mL)			Rata-rata $\pm$ SD
	Replikasi 1	Replikasi 2	Replikasi 3	
Ekstrak kasar	9,683	9,639	9,726	9,683 $\pm$ 0,043
Konsentrasi amonium sulfat 25%	7,009	6,900	6,965	6,958 $\pm$ 0,054
Konsentrasi amonium sulfat 50%	8,769	8,856	8,900	8,842 $\pm$ 0,067
Konsentrasi amonium sulfat 75%	11,378	11,291	11,139	11,269 $\pm$ 0,121

Tests of Normality

Sampel	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
KadarProtein Ekstrak Kasar	.176	3	.	1.000	3	.987
Konsentrasi amonium sulfat 25%	.217	3	.	.988	3	.788
Konsentrasi amonium sulfat 50%	.252	3	.	.965	3	.642
Konsentrasi amonium sulfat 75%	.238	3	.	.976	3	.703

a. Lilliefors Significance Correction

➔ Oneway**Descriptives**

KadarProtein

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Ekstrak Kasar	3	9.6827	.04350	.02512	9.5746	9.7907	9.64	9.73
Konsentrasi amonium sulfat 25%	3	6.9580	.05484	.03166	6.8218	7.0942	6.90	7.01
Konsentrasi amonium sulfat 50%	3	8.8417	.06667	.03849	8.6761	9.0073	8.77	8.90
Konsentrasi amonium sulfat 75%	3	11.2693	.12096	.06984	10.9688	11.5698	11.14	11.38
Total	12	9.1879	1.62527	.46917	8.1553	10.2206	6.90	11.38

Test of Homogeneity of Variances

KadarProtein

Levene Statistic	df1	df2	Sig.
1.371	3	8	.320

ANOVA

KadarProtein

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.008	3	9.669	1613.195	.000
Within Groups	.048	8	.006		
Total	29.056	11			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: KadarProtein

Tukey HSD

(I) Sampel	(J) Sampel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Ekstrak Kasar	Konsentrasi amonium sulfat 25%	2.72467*	.06321	.000	2.5222	2.9271
	Konsentrasi amonium sulfat 50%	.84100*	.06321	.000	.6386	1.0434
	Konsentrasi amonium sulfat 75%	-1.58667*	.06321	.000	-1.7891	-1.3842
Konsentrasi amonium sulfat 25%	Ekstrak Kasar	-2.72467*	.06321	.000	-2.9271	-2.5222
	Konsentrasi amonium sulfat 50%	-1.88367*	.06321	.000	-2.0861	-1.6812
	Konsentrasi amonium sulfat 75%	-4.31133*	.06321	.000	-4.5138	-4.1089
Konsentrasi amonium sulfat 50%	Ekstrak Kasar	-.84100*	.06321	.000	-1.0434	-.6386
	Konsentrasi amonium sulfat 25%	1.88367*	.06321	.000	1.6812	2.0861
	Konsentrasi amonium sulfat 75%	-2.42767*	.06321	.000	-2.6301	-2.2252
Konsentrasi amonium sulfat 75%	Ekstrak Kasar	1.58667*	.06321	.000	1.3842	1.7891
	Konsentrasi amonium sulfat 25%	4.31133*	.06321	.000	4.1089	4.5138
	Konsentrasi amonium sulfat 50%	2.42767*	.06321	.000	2.2252	2.6301

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

Homogeneous Subsets

KadarProtein

Tukey HSD^a

Sampel	N	Subset for alpha = 0.05			
		1	2	3	4
Konsentrasi amonium sulfat 25%	3	6.9580			
Konsentrasi amonium sulfat 50%	3		8.8417		
Ekstrak Kasar	3			9.6827	
Konsentrasi amonium sulfat 75%	3				11.2693
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

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

Lampiran 15. Tanda bukti uji aktivitas SOD



UNIVERSITAS GADJAH MADA PUSAT STUDI PANGAN DAN GIZI

Alamat : Gedung PAU-UGM, Jalan Teknikal Utara, Barok, Yogyakarta 55281, Phone/Fax, (0274) 589242
http://cfns.ugm.ac.id, E-mail : cfns@ugm.ac.id

LAPORAN HASIL UJI

(Analysys Certificate)

No.PSPG/454/XI/2022

Nomor Pengujian <i>(Analysis Report Number)</i>	: PS/676/XI/2022
Nama Pelanggan <i>(Name of client)</i>	: Mitha Oktavia Mandasari
Alamat Pelanggan <i>(Address of client)</i>	: Universitas Setia Budi Surakarta
No. Telepon Pelanggan <i>(Phone No. of client)</i>	:
Contoh Uji <i>(Type of sample)</i>	: Cairan
Tanggal Penerimaan Contoh Uji	: 13 Oktober 2022
Tanggal Pengujian <i>(Date of analysis)</i>	: 13 Oktober 2022
Metode Uji <i>(Analysis Method)</i>	:
Hasil Uji <i>(Analysis Result)</i>	: SOD

Hasil analisis terlampir

Yogyakarta, 29 November 2022
Publik Servis PSPG – UGM


Sriyono

Lampiran 16. Hasil uji aktivitas SOD

Daun Jambu Biji

USB

PS / 675 / XI / 2022

No	Kode	Abs	SOD %
1	K (+).1	0,047	80,60
	K (+).2	0,045	83,58
	K (+).3	0,046	82,09
2	K (-).1	0,099	2,99
	K (-).2	0,100	1,49
	K (-).3	0,098	4,48
3	Ex Kasar.1	0,052	73,13
	Ex Kasar.2	0,057	65,67
	Ex Kasar.3	0,054	70,15
4	25%.1	0,076	37,31
	25%.2	0,079	32,84
	25%.3	0,077	35,82
5	50%.1	0,058	64,18
	50%.2	0,061	59,70
	50%.3	0,060	61,19
6	75%.1	0,049	77,61
	75%.2	0,047	80,60
	75%.3	0,048	79,10
		1	0,168
		2	0,034
		3	0,101

Lampiran 17. Perhitungan persen inhibisi

$$\% \text{ Inhibisi} = \frac{(A_{\text{blanko 1}} - A_{\text{blanko 3}}) - (A_{\text{sampel}} - A_{\text{blanko 2}})}{(A_{\text{blanko 1}} - A_{\text{blanko 3}})} \times 100\%$$

1. Kontrol positif**a. Replikasi I**

$$\begin{aligned} \% \text{ Inhibisi} &= \frac{(0,168 - 0,101) - (0,047 - 0,034)}{(0,168 - 0,101)} \times 100\% \\ &= \frac{0,067 - 0,013}{0,067} \times 100\% \\ &= 80,597\% \end{aligned}$$

b. Replikasi II

$$\begin{aligned} \% \text{ Inhibisi} &= \frac{(0,168 - 0,101) - (0,045 - 0,034)}{(0,168 - 0,101)} \times 100\% \\ &= \frac{0,067 - 0,011}{0,067} \times 100\% \\ &= 83,582\% \end{aligned}$$

c. Replikasi III

$$\begin{aligned} \% \text{ Inhibisi} &= \frac{(0,168 - 0,101) - (0,046 - 0,034)}{(0,168 - 0,101)} \times 100\% \\ &= \frac{0,067 - 0,012}{0,067} \times 100\% \\ &= 82,089\% \end{aligned}$$

2. Kontrol negatif**a. Replikasi I**

$$\begin{aligned} \% \text{ Inhibisi} &= \frac{(0,168 - 0,101) - (0,099 - 0,034)}{(0,168 - 0,101)} \times 100\% \\ &= \frac{0,067 - 0,065}{0,067} \times 100\% \\ &= 2,985\% \end{aligned}$$

b. Replikasi II

$$\begin{aligned} \% \text{ Inhibisi} &= \frac{(0,168 - 0,101) - (0,100 - 0,034)}{(0,168 - 0,101)} \times 100\% \\ &= \frac{0,067 - 0,066}{0,067} \times 100\% \\ &= 1,492\% \end{aligned}$$

c. Replikasi III

$$\begin{aligned} \% \text{ Inhibisi} &= \frac{(0,168 - 0,101) - (0,098 - 0,034)}{(0,168 - 0,101)} \times 100\% \\ &= \frac{0,067 - 0,064}{0,067} \times 100\% \\ &= 4,478\% \end{aligned}$$

3. Ekstrak kasar

a. Replikasi I

$$\begin{aligned}
 \% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,052-0,034)}{(0,168-0,101)} \times 100\% \\
 &= \frac{0,067-0,018}{0,067} \times 100\% \\
 &= 73,134\%
 \end{aligned}$$

b. Replikasi II

$$\begin{aligned}
 \% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,057-0,034)}{(0,168-0,101)} \times 100\% \\
 &= \frac{0,067-0,023}{0,067} \times 100\% \\
 &= 65,672\%
 \end{aligned}$$

c. Replikasi III

$$\begin{aligned}
 \% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,054-0,034)}{(0,168-0,101)} \times 100\% \\
 &= \frac{0,067-0,020}{0,067} \times 100\% \\
 &= 70,149\%
 \end{aligned}$$

4. Konsentrasi 25%

a. Replikasi I

$$\begin{aligned}
 \% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,076-0,034)}{(0,168-0,101)} \times 100\% \\
 &= \frac{0,067-0,042}{0,067} \times 100\% \\
 &= 37,313\%
 \end{aligned}$$

b. Replikasi II

$$\begin{aligned}
 \% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,079-0,034)}{(0,168-0,101)} \times 100\% \\
 &= \frac{0,067-0,045}{0,067} \times 100\% \\
 &= 32,836\%
 \end{aligned}$$

c. Replikasi III

$$\begin{aligned}
 \% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,077-0,034)}{(0,168-0,101)} \times 100\% \\
 &= \frac{0,067-0,043}{0,067} \times 100\% \\
 &= 35,821\%
 \end{aligned}$$

5. Konsentrasi 50%

a. Replikasi I

$$\begin{aligned}\% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,058-0,034)}{(0,168-0,101)} \times 100\% \\ &= \frac{0,067-0,024}{0,067} \times 100\% \\ &= 64,179\%\end{aligned}$$

b. Replikasi II

$$\begin{aligned}\% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,061-0,034)}{(0,168-0,101)} \times 100\% \\ &= \frac{0,067-0,027}{0,067} \times 100\% \\ &= 59,701\%\end{aligned}$$

c. Replikasi III

$$\begin{aligned}\% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,060-0,034)}{(0,168-0,101)} \times 100\% \\ &= \frac{0,067-0,026}{0,067} \times 100\% \\ &= 61,194\%\end{aligned}$$

6. Konsentrasi 75%

a. Replikasi I

$$\begin{aligned}\% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,049-0,034)}{(0,168-0,101)} \times 100\% \\ &= \frac{0,067-0,015}{0,067} \times 100\% \\ &= 77,612\%\end{aligned}$$

b. Replikasi II

$$\begin{aligned}\% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,047-0,034)}{(0,168-0,101)} \times 100\% \\ &= \frac{0,067-0,013}{0,067} \times 100\% \\ &= 80,597\%\end{aligned}$$

d. Replikasi III

$$\begin{aligned}\% \text{ Inhibisi} &= \frac{(0,168-0,101)-(0,048-0,034)}{(0,168-0,101)} \times 100\% \\ &= \frac{0,067-0,014}{0,067} \times 100\% \\ &= 79,104\%\end{aligned}$$

Lampiran 18. Hasil SPSS uji aktivitas SOD

Sampel	% inhibisi (1)	% inhibisi (2)	% inhibisi (3)	Rata- rata± SD
Kontrol Positif	80,597	83,582	82,089	82,089 ± 1,492
Kontrol Negatif	2,985	1,492	4,478	2,985 ± 1,493
Ekstrak kasar	73,134	65,672	70,149	69,652 ± 3,756
Konsentrasi amonium sulfat 25%	37,313	32,836	35,821	35,323 ± 2,279
Konsentrasi amonium sulfat 50%	64,179	59,701	61,194	61,691± 2,280
Konsentrasi amonium sulfat 75%	77,612	80,597	79,104	79,104± 1,492

Tests of Normality

Sampel	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SOD kontrol positif	.175	3	.	1.000	3	1.000
kontrol negatif	.175	3	.	1.000	3	.996
ekstrak kasar	.219	3	.	.987	3	.780
konsentrasi amonium sulfat 25%	.253	3	.	.964	3	.637
konsentrasi amonium sulfat 50%	.253	3	.	.964	3	.635
konsentrasi amonium sulfat 75%	.175	3	.	1.000	3	1.000

a. Lilliefors Significance Correction

➔ **Oneway**

Descriptives

SOD

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
kontrol positif	3	82.0900	1.49000	.86025	78.3886	85.7914	80.60	83.58
kontrol negatif	3	2.9667	1.49500	.86314	-.7271	6.7005	1.49	4.48
ekstrak kasar	3	69.6513	3.75690	2.16905	60.3167	78.9840	65.67	73.13
konsentrasi amonium sulfat 25%	3	35.3233	2.27601	1.31406	29.6694	40.9773	32.84	37.31
konsentrasi amonium sulfat 50%	3	61.6900	2.28049	1.31664	56.0250	67.3550	59.70	64.18
konsentrasi amonium sulfat 75%	3	79.1043	1.49250	.86170	75.3968	82.8119	77.61	80.60
Total	18	55.1409	28.76128	6.77910	40.8383	69.4436	1.49	83.58

Test of Homogeneity of Variances

SOD

Levene Statistic	df1	df2	Sig.
.976	5	12	.470

ANOVA

SOD

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14000.231	5	2800.046	538.853	.000
Within Groups	62.356	12	5.196		
Total	14062.586	17			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: SOD
Tukey HSD

(I) Sampel	(J) Sampel	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
kontrol positif	kontrol negatif	79.10333 [*]	1.86124	.000	72.8516	85.3551
	ekstrak kasar	12.43867 [*]	1.86124	.000	6.1869	18.6904
	konsentrasi amonium sulfat 25%	46.76667 [*]	1.86124	.000	40.5149	53.0184
	konsentrasi amonium sulfat 50%	20.40000 [*]	1.86124	.000	14.1482	26.6518
	konsentrasi amonium sulfat 75%	2.98567	1.86124	.611	-3.2661	9.2374
kontrol negatif	kontrol positif	-79.10333 [*]	1.86124	.000	-85.3551	-72.8516
	ekstrak kasar	-66.66467 [*]	1.86124	.000	-72.9164	-60.4129
	konsentrasi amonium sulfat 25%	-32.33667 [*]	1.86124	.000	-38.5884	-26.0849
	konsentrasi amonium sulfat 50%	-58.70333 [*]	1.86124	.000	-64.9551	-52.4516
	konsentrasi amonium sulfat 75%	-76.11767 [*]	1.86124	.000	-82.3694	-69.8659
ekstrak kasar	kontrol positif	-12.43867 [*]	1.86124	.000	-18.6904	-6.1869
	kontrol negatif	66.66467 [*]	1.86124	.000	60.4129	72.9164
	konsentrasi amonium sulfat 25%	34.32800 [*]	1.86124	.000	28.0762	40.5798
	konsentrasi amonium sulfat 50%	7.96133 [*]	1.86124	.011	1.7096	14.2131
	konsentrasi amonium sulfat 75%	-9.45300 [*]	1.86124	.003	-15.7048	-3.2012
konsentrasi amonium sulfat 25%	kontrol positif	-46.76667 [*]	1.86124	.000	-53.0184	-40.5149
	kontrol negatif	32.33667 [*]	1.86124	.000	26.0849	38.5884
	ekstrak kasar	-34.32800 [*]	1.86124	.000	-40.5798	-28.0762
	konsentrasi amonium sulfat 50%	-26.36667 [*]	1.86124	.000	-32.6184	-20.1149
	konsentrasi amonium sulfat 75%	-43.78100 [*]	1.86124	.000	-50.0328	-37.5292
konsentrasi amonium sulfat 50%	kontrol positif	-20.40000 [*]	1.86124	.000	-26.6518	-14.1482
	kontrol negatif	58.70333 [*]	1.86124	.000	52.4516	64.9551
	ekstrak kasar	-7.96133 [*]	1.86124	.011	-14.2131	-1.7096
	konsentrasi amonium sulfat 25%	26.36667 [*]	1.86124	.000	20.1149	32.6184
	konsentrasi amonium sulfat 75%	-17.41433 [*]	1.86124	.000	-23.6661	-11.1626
konsentrasi amonium sulfat 75%	kontrol positif	-2.98567	1.86124	.611	-9.2374	3.2661
	kontrol negatif	76.11767 [*]	1.86124	.000	69.8659	82.3694
	ekstrak kasar	9.45300 [*]	1.86124	.003	3.2012	15.7048
	konsentrasi amonium sulfat 25%	43.78100 [*]	1.86124	.000	37.5292	50.0328
	konsentrasi amonium sulfat 50%	17.41433 [*]	1.86124	.000	11.1626	23.6661

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