

LAMPIRAN A
DETERMINASI TANAMAN ANGSANA



DINAS KESEHATAN PROPINSI JAWA TIMUR
UPT MATERIA MEDICA
Jalan Lahor No.87 Telp. (0341) 593396 Batu (65313)
KOTA BATU

Nomor : 074 / 0220 / 101.8 / 2013
Sifat : Biasa
Perihal : **Determinasi Tanaman Angsana**

Memenuhi permohonan saudara :
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1. Perihal determinasi tanaman Angsana

Kingdom : Plantae (Tumbuhan)
Subkingdom : Tracheobionta (Tumbuhan berpembuluh)
Super Divisi : Spermatophyta (Menghasilkan biji)
Divisi : Magnoliophyta (Tumbuhan berbunga)
Sub divisi : Angiospermae.
Kelas : Dicotyledonae
Bangsa : Resales
Suku : Papilionaceae/Leguminosae
Marga : Pterocarpus
Jenis : *Pterocarpus indicus Willd.*
Sinonim : *Pterocarpus flavus* Lour.= *Pterocarpus pallidus* BLo.

Asan, Athan (Aceh); Sena (Gayo); Sena, Hasona, Sona (Batak); Kayu merah (Timor); Asana, Sana kapur, Sana kembang (Minangkabau), Sana kembang (Madura); Kenaha (Solor); Aha, Naga, Aga, Naakir (Sulawesi Utara); Tonala (Gorontalo); Candana (Bugis); Na, Nar, (Roti); Lana (Buru)
Kunci determinasi : 1 b - 2 b - 3 b - 4 b - 6 b - 7 b - 9 b - 10 b - 11 b - 12 b - 13 b - 14 a - 15 b - 197 b - 208 b - 219 b - 220 a - 224 b - 225 b - 227 a - 229 b - 230 b - 234 a - 1 b - 5 b - 16 b - 19a

2. **Morfologi** : Habitus : Pohon, tinggi 10-30 m. Batang : Bulat, berkayu, bercabang, putih kotor. Daun : Majemuk, berseling, anak daun 5-13 helai, bulat, ujung runcing, pangkal tumpul, mengkilat, panjang daun 3-10 cm, lebar 2-5 cm, pertulangan menyirip hijau muda, hijau. **Bunga** Majemuk, bentuk tandan, di ujung cabang dan di ketiak daun, berbulu, jingga. Buah Polong, bulat, pipih, bersayap, diameter \pm 5 cm. Biji berisi 2-6 biji, hijau. Bulat, coklat. Akar Tunggang, bercabang, putih kotor.
3. **Nama Simplisia** : Pterocarpi Folium/ Daun Angsana
4. **Kandungan kimia** : Biji dan daun mengandung saponin, flavonoida dan polifenol, di samping itu juga mengandung minyak atsiri . Resin dikenal dengan nama kino (asam kinotanat dan zat warna merah).
5. **Penggunaan** : Penelitian
6. **Daftar Pustaka** :
- Anonim , <http://www/ipteknet.com/> belimbing, diakses tanggal 21 Oktober 2010
 - Anonim, <http://www/warintek.com/> belimbing diakses tanggal 22 Oktober 2010
 - Steenis, CGGJ Van Dr , *FLORA*, 2008, Pradnya Paramita , Jakarta
 - Syamsuhidayat, Sri sugati, Hutapea, Johny Ria.1991, *Inventaris Tanaman Obat Indonesia I* . Departemen Kesehatan Republik Indonesia : Badan Penelitian Dan Pengembangan Kesehatan.

Demikian determinasi ini kami buat untuk dipergunakan sebagaimana mestinya.

Batu, 16 September 2013
Kepala UPT Materia Medica Batu

LAMPIRAN B
HASIL PERHITUNGAN DAN ANALISIS DAUN ANGSANA

Hasil Perhitungan Penetapan Susut Pengerinan Serbuk

Replikasi	Hasil Pengerinan
1	7,75%
2	7,75%
3	7,76%
Rata-rata	7,75%

Hasil Perhitungan Penetapan Kadar Air Simplisia

$$\text{Kadar Air} = \frac{\text{volume air yang terbaca}}{\text{Berat simplisia}}$$

- I. Kadar Air = $\frac{0,808}{10,034} \times 100\% = 8,05\%$
- II. Kadar Air = $\frac{0,84}{10,062} \times 100\% = 8,35\%$
- III. Kadar Air = $\frac{0,912}{10,002} \times 100\% = 9,12\%$

$$\text{Rata-rata kadar air} = \frac{8,05+8,35+9,12}{3} = 8,51\%$$

Hasil Perhitungan Penetapan Kadar Abu Simplisia

- I. Kadar Abu = $\frac{(\text{berat krus+abu})-\text{berat krus kosong}}{\text{berat simplisia}} \times 100\%$
 $= \frac{20,3517-20,2084}{2,0210} \times 100\% = 7,09\%$

$$\text{II. Kadar Abu} = \frac{22,7787-22,6387}{2,0266} \times 100\% = 6,91\%$$

$$\text{III. Kadar Abu} = \frac{18,7853-18,6458}{2,0132} \times 100\% = 6,93\%$$

$$\text{Rata - rata kadar abu} = \frac{7,09\% + 6,91\% + 6,93\%}{3} = 6,98\%$$

Hasil Perhitungan Penetapan Kadar abu Tidak Larut Asam Simplisia

$$\begin{aligned} \text{I. Kadar Abu Tidak Larut Asam} &= \frac{(\text{kertas saring+sisa abu})-\text{kertas saring}}{\text{berat abu mula-mula}} \times 100\% \\ &= \frac{0,6292-0,5764}{0,1445} \times 100\% = 36,54\% \end{aligned}$$

$$\begin{aligned} \text{II. Kadar Abu Tidak Larut Asam} &= \frac{(\text{kertas saring+sisa abu})-\text{kertas saring}}{\text{berat abu mula-mula}} \times 100\% \\ &= \frac{0,5620-0,5105}{0,1411} \times 100\% = 36,49\% \end{aligned}$$

$$\begin{aligned} \text{III. Kadar Abu Tidak Larut Asam} &= \frac{(\text{kertas saring+sisa abu})-\text{kertas saring}}{\text{berat abu mula-mula}} \times 100\% \\ &= \frac{0,5973-0,5453}{0,1410} \times 100\% = 36,87\% \end{aligned}$$

$$\begin{aligned} \text{Rata - rata kadar abu tidak larut asam} &= \frac{36,54\% + 36,49\% + 36,87\%}{3} \\ &= 36,63\% \end{aligned}$$

Hasil Perhitungan Penetapan Kadar Sari Larut Air Simplisia

$$\begin{aligned} \text{I. Kadar Sari Larut Air} &= \frac{(\text{berat cawan+cairan})-\text{berat cawan kosong}}{\text{berat simplisia}} \times 100\% \\ &= \frac{28,891-28,824}{5,021} \times 100\% = 1,33\% \times 5 = 6,65\% \end{aligned}$$

$$\text{II. Kadar Sari Larut Air} = \frac{(\text{berat cawan+cairan})-\text{berat cawan kosong}}{\text{berat simplisia}} \times 100\%$$

$$= \frac{26,477-26,414}{5,026} \times 100\% = 1,25\% \times 5 = 6,25\%$$

$$\begin{aligned} \text{III. Kadar Sari Larut Air} &= \frac{(\text{berat cawan+cairan})-\text{berat cawan kosong}}{\text{berat simplisia}} \times 100\% \\ &= \frac{19,375-19,299}{5,048} \times 100\% = 1,51\% \times 5 = 7,55\% \end{aligned}$$

$$\text{Rata – rata kadar sari larut air} = \frac{6,65\%+6,25\%+7,55\%}{3} = 6,82\%$$

Hasil Perhitungan Penetapan Kadar Sari Larut Etanol Simplisia

$$\begin{aligned} \text{I. Kadar senyawa larut etanol} &: \frac{(\text{berat cawan + ekstrak}) - \text{berat cawan kosong}}{\text{berat simplisia}} \times 100\% \\ &: \frac{20,513-20,32}{5,014} \times 100\% = 3,85\% \times 5 = 19,25\% \end{aligned}$$

$$\begin{aligned} \text{II. Kadar senyawa larut etanol} &: \frac{\text{berat cawan + ekstrak} - \text{berat cawan kosong}}{\text{berat simplisia}} \times 100\% \\ &: \frac{18,233-18,044}{5,053} \times 100\% = 3,74\% \times 5 = 18,7\% \end{aligned}$$

$$\begin{aligned} \text{III. Kadar senyawa larut etanol} &: \frac{\text{berat cawan + ekstrak} - \text{berat cawan kosong}}{\text{berat simplisia}} \times 100\% \\ &: \frac{20,457-20,261}{5,047} \times 100\% = 3,88\% \times 5 = 19,7\% \end{aligned}$$

$$\text{Rata-rata kadar senyawa larut etanol} = \frac{19,25+18,7+19,4}{3} = 19,12\%$$

Hasil Perhitungan Penetapan Rendemen

$$\text{Rumus} = \frac{(\text{berat cawan + ekstrak kental}) - \text{berat cawan kosong}}{\text{berat simplisia}} \times 100\%$$

$$= \frac{582,9-79,8631}{1000} \times 100\% = 50,30\%$$

Hasil Perhitungan Penetapan Kadar Air Ekstrak

$$\text{I. Kadar Air} = \frac{\text{volume air yang terbaca}}{\text{berat simplisia}} \times 100\%$$

$$= \frac{0,65}{10,08} \times 100\% = 6,44\%$$

$$\text{II. Kadar Air} = \frac{\text{volume air yang terbaca}}{\text{berat simplisia}} \times 100\%$$

$$= \frac{0,62}{10,16} \times 100\% = 6,10\%$$

$$\text{III. Kadar Air} = \frac{\text{volume air yang terbaca}}{\text{berat simplisia}} \times 100\%$$

$$= \frac{0,6}{10,31} \times 100\% = 5,82\%$$

$$\text{Rata - rata kadar air} = \frac{6,44\% + 6,10\% + 5,82\%}{3} = 6,12\%$$

Hasil Skrining Fitokimia

Hasil skrining fitokimia simplisia dan ekstrak etanol daun angšana

No	Analisis	Hasil Analisis	Keterangan
1.	Alkaloid	+	Terbentuk endapan putih dan jingga
2.	Flavonoid	+	Lapisan amil alkohol (berwarna kuning) terpisah dengan alkohol klorhidrik
3.	Tanin	+	Terbentuk warna hijau
4.	Saponin	-	Tidak terbentuk busa yang stabil
5.	Kuinon	-	Tidak terbentuk warna merah
6.	Sterol/terpen	+	Terbentuk warna hijau

LAMPIRAN C
KADAR GLUKOSA DARAH (KGD)

Tabel kadar glukosa darah tikus normal (kontrol negatif) yang diberikan suspensi CMC- Na 0,5%

No	BB (g)	KGD₀ (mg/dl)	KGD₁ (mg/dl)	KGD₂ (mg/dl)	KGD₃ (mg/dl)	KGD₄ (mg/dl)	KGD₅ (mg/dl)	KGD₆ (mg/dl)	KGD₇ (mg/dl)	ΔKGD (mg/dl)
1	120	100	121	95	107	122	111	94	88	12
2	120	136	170	129	156	126	143	111	116	20
3	140	124	140	107	97	97	103	93	93	31
4	140	118	112	126	93	119	90	103	102	16
5	140	122	126	131	108	133	120	89	117	5
MEAN		120	133.8	117.6	112.2	119.4	113.4	98	103.2	16.8
SD		13.0384	22.6318	15.8367	25.3121	13.5757	19.8822	8.88819	13.1415372	9.67988

Keterangan

BB : Berat Badan setelah adaptasi 1 minggu

KGD₀ : Kadar Glukosa Darah Tikus Hiperglikemia

KGD₇ : Kadar Glukosa Darah setelah 7 hari Perlakuan

ΔKGD : KGD₀ – KGD₇

Tabel kadar glukosa darah tikus diabetes (kontrol positif) yang diberikan suspensi CMC Na 0,5%

No	BB (g)	KGD₀ (mg/dl)	KGD₁ (mg/dl)	KGD₂ (mg/dl)	KGD₃ (mg/dl)	KGD₄ (mg/dl)	KGD₅ (mg/dl)	KGD₆ (mg/dl)	KGD₇ (mg/dl)	ΔKGD (mg/dl)
1	95	490	130	274	384	388	402	512	600	110
2	120	346	287	294	321	381	472	501	534	188
3	99	359	311	476	357	386	430	455	484	125
4	105	367	600	490	485	498	538	600	584	217
5	100	205	190	280	340	375	510	464	487	282
MEAN		353.4	303.6	362.8	377.4	405.6	470.4	506.4	537.8	184.4
SD		101.184	181.125	110.078	64.4539	51.897	55.7925	57.5786	53.60223876	70.1163

Keterangan

BB : Berat Badan setelah adaptasi 1 minggu

KGD₀ : Kadar Glukosa Darah Tikus Hiperglikemia

KGD₇ : Kadar Glukosa Darah setelah 7 hari Perlakuan

ΔKGD : KGD₀ – KGD₇

Tabel kadar glukosa darah tikus yang diberikan metformin 90 mg/KgBB

No	BB (g)	KGD ₀ (mg/dl)	KGD ₁ (mg/dl)	KGD ₂ (mg/dl)	KGD ₃ (mg/dl)	KGD ₄ (mg/dl)	KGD ₅ (mg/dl)	KGD ₆ (mg/dl)	KGD ₇ (mg/dl)	ΔKGD (mg/dl)
1	110	198	92	302	87	362	243	119	109	89
2	150	476	578	329	311	268	214	156	115	361
3	160	416	455	405	384	356	329	188	117	299
4	150	442	376	368	311	299	285	196	178	264
5	110	339	94	357	211	178	149	143	110	229
MEAN		374.2	319	352.2	260.8	292.6	244	160.4	125.8	248.4
SD		110.672	218.506	39.1114	115.005	75.1918	68.6149	31.8795	29.37175514	101.572

Keterangan

BB : Berat Badan setelah adaptasi 1 minggu

KGD₀ : Kadar Glukosa Darah Tikus Hiperglikemia

KGD₇ : Kadar Glukosa Darah setelah 7 hari Perlakuan

ΔKGD : KGD₀ – KGD₇

Tabel Kadar Glukosa Darah Tikus Diabetes yang diberikan Ekstrak daun angšana 250 mg/kgBB

NO	BB (g)	KGD₀ (mg/dl)	KGD1 (mg/dl)	KGD2 (mg/dl)	KGD3 (mg/dl)	KGD4 (mg/dl)	KGD5 (mg/dl)	KGD6 (mg/dl)	KGD7 (mg/dl)	ΔKGD (mg/dl)
1	190	143	185	314	547	473	393	88	127	16
2	190	146	134	101	146	129	109	122	116	30
3	80	600	600	600	480	360	218	138	198	402
4	80	600	399	479	600	504	425	186	59	541
5	150	600	600	600	600	523	444	327	95	505
MEAN		417.8	383.6	418.8	474.6	397.8	317.8	172.2	119	298.8
SD		249.4898	221.1544	212.8795	190.19674	163.0113	147.1656	93.4515	51.210352	256.9333

Keterangan

BB : Berat Badan setelah adaptasi 1 minggu

KGD0 : Kadar Glukosa Darah Tikus Hiperglikemia

KGD7 : Kadar Glukosa Darah setelah 7 hari Perlakuan

ΔKGD : KGD0 – KGD7

Tabel kadar glukosa darah tikus yang diberikan ekstrak Etanol 70% daun angkana 250 mg/KgBB dan Metformin 90 mg/kgBB cara A

NO	BB (g)	KGD0 (mg/dl)	KGD1 (mg/dl)	KGD2 (mg/dl)	KGD3 (mg/dl)	KGD4 (mg/dl)	KGD5 (mg/dl)	KGD6 (mg/dl)	KGD7 (mg/dl)	ΔKGD (mg/dl)
1	90	135	600	73	191	133	138	142	137	2
2	90	600	600	380	491	546	570	484	223	377
3	100	139	600	254	357	466	412	600	600	461
4	130	135	140	95	80	114	137	164	135	0
5	110	600	461	94	83	574	390	195	141	459
MEAN		321.8	480.2	179.2	240.4	366.6	329.4	317	247.2	74.6
SD		253.9659	199.4748	133.7374	179.8188	225.5300	188.4378	210.295	200.6643	366.5751

Keterangan :

BB : Berat Badan setelah adaptasi 1 minggu

KGD0 : Kadar Glukosa Darah Tikus Hiperglikemia

KGD7 : Kadar Glukosa Darah setelah 7 hari Perlakuan

ΔKGD : KGD0 – KGD7

Tabel kadar glukosa darah tikus yang diberikan ekstrak etanol 70% daun angkana 250 mg/KgBB dan metformin 90 mg/KgBB cara B

NO	BB (g)	KGD0 (mg/dl)	KGD1 (mg/dl)	KGD2 (mg/dl)	KGD3 (mg/dl)	KGD4 (mg/dl)	KGD5 (mg/dl)	KGD6 (mg/dl)	KGD7 (mg/dl)	ΔKGD (mg/dl)
1	110	365	600	600	373	240	97	600	307	58
2	110	351	600	581	450	424	443	600	600	249
3	120	152	358	596	462	430	587	600	194	42
4	100	600	600	565	315	157	176	600	600	0
5	100	156	566	363	359	337	116	222	211	55
MEAN		324.8	544.8	541	391.8	317.6	283.8	524.4	382.4	57.6
SD		184.655625	105.4571	100.4564	62.53559	118.4748	219.0587	169.0467	203.2591	115.7208

Keterangan

BB : Berat Badan setelah adaptasi 1 minggu

KGD0 : Kadar Glukosa Darah Tikus Hiperglikemia

KGD7 : Kadar Glukosa Darah setelah 7 hari Perlakuan

ΔKGD : KGD0 – KGD7

LAMPIRAN D

PRINT OUT ANALISIS SPSS 17.0 KADAR GLUKOSA DARAH

ONEWAY KGD BY KELOMPOK /STATISTICS DESCRIPTIVES
/MISSING ANALYSIS /POSTHOC=LSD ALPHA(0.05).

Oneway

Notes

Output Created		10-Dec-2013 04:22:25
Comments		
Input	Data	D:\SKRIPSI\SPSS\SPSS.TABEL .KGD.sav
	Active Dataset	DataSet1
ANOVA		
	Split File	<none>
	N of Rows in Working Data File	30
Missing Handling	Value Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY KGD BY KELOMPOK /STATISTICS DESCRIPTIVES /MISSING ANALYSIS /POSTHOC=LSD ALPHA(0.05).
Resources	Processor Time	0:00:00.046
	Elapsed Time	0:00:00.057

[DataSet1] D:\SKRIPSI\SPSS\SPSS.TABEL.KGD.sav

KGD

	<i>Sum of Squares</i>	df	<i>Mean Square</i>	F	Sig.
<i>Between Groups</i>	839686.300	5	167937.260	4.398	.006
<i>Within Groups</i>	916440.400	24	38185.017		
Total	1756126.700	29			

Test of Homogeneity of Variances

KGD

<i>Levene Statistic</i>	df1	df2	Sig.
5.883	5	24	.001

KGD

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
KONTROL_NEGATIF	5	-16.8000	9.67988	4.32897	-28.8192	-4.7808	-31.00	-5.00
KONTROL_POSITIF	5	184.4000	70.11633	31.35698	97.3391	271.4609	110.00	282.00
METFORMIN	5	-248.4000	101.57165	45.42422	-374.5179	-122.2821	-361.00	-89.00
ANGSANA	5	-298.8000	256.93326	114.90405	-617.8248	20.2248	-541.00	-16.00
KOMBINASI_A	5	-74.6000	366.57509	163.93737	-529.7631	380.5631	-459.00	461.00
KOMBINASI_B	5	57.6000	115.72078	51.75191	-86.0863	201.2863	-58.00	249.00
Total	30	-66.1000	246.08148	44.92813	-157.9883	25.7883	-541.00	461.00

Post Hoc Tests

Multiple Comparisons

KGD

LSD

(I) KELOMPOK	(J) KELOMPOK	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
KONTROL_NEGATIF	KONTROL_POSITIF	-201.20000	123.58805	.117	-456.2732	53.8732
	METFORMIN	231.60000	123.58805	.073	-23.4732	486.6732
	ANGSANA	282.00000 [†]	123.58805	.032	26.9268	537.0732
	KOMBINASI_A	57.80000	123.58805	.644	-197.2732	312.8732
	KOMBINASI_B	-74.40000	123.58805	.553	-329.4732	180.6732
KONTROL_POSITIF	KONTROL_NEGATIF	201.20000	123.58805	.117	-53.8732	456.2732
	METFORMIN	432.80000 [†]	123.58805	.002	177.7268	687.8732
	ANGSANA	483.20000 [†]	123.58805	.001	228.1268	738.2732
	KOMBINASI_A	259.00000 [†]	123.58805	.047	3.9268	514.0732
	KOMBINASI_B	126.80000	123.58805	.315	-128.2732	381.8732
METFORMIN	KONTROL_NEGATIF	-231.60000	123.58805	.073	-486.6732	23.4732
	KONTROL_POSITIF	-432.80000 [†]	123.58805	.002	-687.8732	-177.7268
	ANGSANA	50.40000	123.58805	.687	-204.6732	305.4732
	KOMBINASI_A	-173.80000	123.58805	.172	-428.8732	81.2732
	KOMBINASI_B	-306.00000 [†]	123.58805	.021	-561.0732	-50.9268
ANGSANA	KONTROL_NEGATIF	-282.00000 [†]	123.58805	.032	-537.0732	-26.9268

	KONTROL_POSITIF	-483.20000 [†]	123.58805	.001	-738.2732	-228.1268
	METFORMIN	-50.40000	123.58805	.687	-305.4732	204.6732
	KOMBINASI_A	-224.20000	123.58805	.082	-479.2732	30.8732
	KOMBINASI_B	-356.40000 [‡]	123.58805	.008	-611.4732	-101.3268
KOMBINASI_A	KONTROL_NEGATIF	-57.80000	123.58805	.644	-312.8732	197.2732
	KONTROL_POSITIF	-259.00000 [†]	123.58805	.047	-514.0732	-3.9268
	METFORMIN	173.80000	123.58805	.172	-81.2732	428.8732
	ANGSANA	224.20000	123.58805	.082	-30.8732	479.2732
	KOMBINASI_B	-132.20000	123.58805	.295	-387.2732	122.8732
KOMBINASI_B	KONTROL_NEGATIF	74.40000	123.58805	.553	-180.6732	329.4732
	KONTROL_POSITIF	-126.80000	123.58805	.315	-381.8732	128.2732
	METFORMIN	306.00000 [†]	123.58805	.021	50.9268	561.0732
	ANGSANA	356.40000 [‡]	123.58805	.008	101.3268	611.4732
	KOMBINASI_A	132.20000	123.58805	.295	-122.8732	387.2732

LAMPIRAN E
PERHITUNGAN SEL β -PANKREAS

Perlakuan	Kelompok	P1	P2	P3	Rata-rata sel	Mean	SD	%Perbaikan
Normal (K-)	K-	60	57	45	54			
	K-	40	52	52	48	46,6667	8,08	-
	K-	35	53	26	38			
Diabetes (K+)	K+	15	10	8	11			
	K+	7	8	7	7,33	8,5533	2,11	-
	K+	10	5	7	7,33			
Metformin 90mg/kgBB (E1)	E1	15	20	12	15,67			
	E1	7	10	10	9	12,3333	3,33	31,58%
	E1	13	13	11	12,33			
Angsana 250mg/kgBB (E2)	E2	21	27	25	24,33			
	E2	34	27	19	26,67	28,5567	5,42	76,32%
	E2	49	23	32	34,67			
Kombinasi A (E3)	E3	13	10	21	14,67			
	E3	13	26	27	22	15,6667	5,89	42,10%
	E3	15	8	8	10,33			
Kombinasi B (E4)	E4	39	37	34	36,67			
	E4	17	24	12	17,67	22,3889	12,41	60,53%
	E4	23	11	6	13,33			

Perhitungan :

$$\begin{aligned} \text{Persentase kerusakan} &= \text{rata-rata sel normal} - \text{rata-rata sel diabetes} \\ &= 46,6667 - 8,5533 = 38,1 \text{ sel} \approx 38 \text{ sel} \end{aligned}$$

Jadi, terdapat 38 sel yang rusak sebanding dengan 100% kerusakan sel β -pankreas

Metformin 90 mg/kgBB

$$\begin{aligned} \text{Persentase kerusakan} &= \text{rata-rata sel rusak} - \text{rata-rata sel kelompok E1} \\ &= 38 - 12,3333 = 25,7667 \text{ sel} \approx 26 \text{ sel} \end{aligned}$$

$$\% \text{ Kerusakan} = \frac{26}{38} \times 100 \% = 68,42\%$$

$$\% \text{ Perbaikan} = 100 \% - 68,42\% = 31,58\%$$

Angsana 250 mg/kgBB

$$\begin{aligned} \text{Persentase kerusakan} &= \text{rata-rata sel rusak} - \text{rata-rata sel kelompok E2} \\ &= 38 - 28,5567 = 9,4433 \text{ sel} \approx 9 \text{ sel} \end{aligned}$$

$$\% \text{ Kerusakan} = \frac{9}{38} \times 100 \% = 23,68 \%$$

$$\% \text{ Perbaikan} = 100 \% - 23,68 \% = 76,32 \%$$

Kombinasi cara A

$$\begin{aligned} \text{Persentase kerusakan} &= \text{rata-rata sel normal} - \text{rata-rata sel kelompok E3} \\ &= 38 - 15,6667 = 22,3333 \text{ sel} \approx 22 \text{ sel} \end{aligned}$$

$$\% \text{ Kerusakan} = \frac{22}{38} \times 100 \% = 57,89 \%$$

$$\% \text{ Perbaikan} = 100 \% - 57,89 \% = 42,10 \%$$

Kombinasi cara B

$$\begin{aligned} \text{Persentase kerusakan} &= \text{rata-rata sel normal} - \text{rata-rata sel kelompok E4} \\ &= 38 - 22,5567 = 15,4433 \text{ sel} \approx 15 \text{ sel} \end{aligned}$$

$$\% \text{ Kerusakan} = \frac{15}{38} \times 100 \% = 39,47 \%$$

$$\% \text{ Perbaikan} = 100 \% - 39,47\% = 60,53 \%$$

LAMPIRAN F
PRINT OUT ANALISIS SPSS SEL β -PANKREAS

Descriptives

RataRata

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
K-	3	46.6667	8.08290	4.66667	26.5876	66.7457	38.00	54.00
K+	3	8.5533	2.11888	1.22333	3.2898	13.8169	7.33	11.00
E1	3	12.3333	3.33500	1.92546	4.0487	20.6179	9.00	15.67
E2	3	28.5567	5.42204	3.13042	15.0876	42.0258	24.33	34.67
E3	3	15.6667	5.89849	3.40550	1.0140	30.3193	10.33	22.00
E4	3	22.5567	12.41364	7.16702	-8.2805	53.3939	13.33	36.67
Tota	18	22.3889	14.33647	3.37914	15.2595	29.5182	7.33	54.00

ANOVA

RataRata

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2895.616	5	579.123	11.612	.000
Within Groups	598.469	12	49.872		
Total	3494.085	17			

RataRata

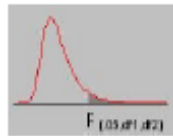
Duncan^a

Kelompok	N	Subset for alpha = 0.05			
		A	B	c	D
K+	3	8.5533			
E1	3	12.3333	12.3333		
E3	3	15.6667	15.6667	15.6667	
E4	3		22.5567	22.5567	
E2	3			28.5567	
K-	3				46.6667
Sig.		.263	.117	.054	1.000

Means for groups in homogeneous subsets are displayed.

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

LAMPIRAN G
TABEL UJI F



F Table for $\alpha = 0.05$ (1/3)

df2/df1	1	2	3	4	5	6	7	8	9	10
1	161.4476	199.5000	215.7073	224.5832	230.1619	233.9860	236.7684	238.8827	240.5433	241.8817
2	18.5128	19.0000	19.1643	19.2468	19.2964	19.3295	19.3532	19.3710	19.3848	19.3959
3	10.1280	9.5521	9.2766	9.1172	9.0135	8.9406	8.8867	8.8452	8.8123	8.7855
4	7.7086	6.9443	6.5914	6.3882	6.2561	6.1631	6.0942	6.0410	5.9988	5.9644
5	6.6079	5.7861	5.4095	5.1922	5.0503	4.9503	4.8759	4.8183	4.7725	4.7351
6	5.9874	5.1433	4.7571	4.5337	4.3874	4.2839	4.2067	4.1468	4.0990	4.0600
7	5.5914	4.7374	4.3468	4.1203	3.9715	3.8660	3.7870	3.7257	3.6767	3.6365
8	5.3177	4.4590	4.0662	3.8379	3.6875	3.5806	3.5005	3.4381	3.3881	3.3472
9	5.1174	4.2565	3.8625	3.6331	3.4817	3.3738	3.2927	3.2296	3.1789	3.1373
10	4.9646	4.1028	3.7083	3.4780	3.3258	3.2172	3.1355	3.0717	3.0204	2.9782
11	4.8443	3.9823	3.5874	3.3567	3.2039	3.0946	3.0123	2.9480	2.8962	2.8536
12	4.7472	3.8853	3.4903	3.2592	3.1059	2.9961	2.9134	2.8486	2.7964	2.7534
13	4.6672	3.8056	3.4105	3.1791	3.0254	2.9153	2.8321	2.7669	2.7144	2.6710
14	4.6001	3.7389	3.3439	3.1122	2.9582	2.8477	2.7642	2.6987	2.6458	2.6022
15	4.5431	3.6823	3.2874	3.0556	2.9013	2.7905	2.7066	2.6408	2.5876	2.5437
16	4.4940	3.6337	3.2389	3.0069	2.8524	2.7413	2.6572	2.5911	2.5377	2.4935
17	4.4513	3.5915	3.1968	2.9647	2.8100	2.6987	2.6143	2.5480	2.4943	2.4499
18	4.4139	3.5546	3.1599	2.9277	2.7729	2.6613	2.5767	2.5102	2.4563	2.4117
19	4.3807	3.5219	3.1274	2.8951	2.7401	2.6283	2.5435	2.4768	2.4227	2.3779
20	4.3512	3.4928	3.0984	2.8661	2.7109	2.5990	2.5140	2.4471	2.3928	2.3479
21	4.3248	3.4668	3.0725	2.8401	2.6848	2.5727	2.4876	2.4205	2.3660	2.3210
22	4.3000	3.4434	3.0491	2.8167	2.6613	2.5491	2.4638	2.3965	2.3419	2.2967

F Table for $\alpha= 0.05$ (2/3)

df2/df1	12	15	20	24	30	40	60	120	∞
1	243.9060	245.9499	248.0131	249.0518	250.0951	251.1432	252.1957	253.2529	254.3144
2	19.4125	19.4291	19.4458	19.4541	19.4624	19.4707	19.4791	19.4874	19.4957
3	8.7446	8.7029	8.6602	8.6385	8.6166	8.5944	8.5720	8.5494	8.5264
4	5.9117	5.8578	5.8025	5.7744	5.7459	5.7170	5.6877	5.6581	5.6281
5	4.6777	4.6188	4.5581	4.5272	4.4957	4.4638	4.4314	4.3985	4.3650
6	3.9999	3.9381	3.8742	3.8415	3.8082	3.7743	3.7398	3.7047	3.6689
7	3.5747	3.5107	3.4445	3.4105	3.3758	3.3404	3.3043	3.2674	3.2298
8	3.2839	3.2184	3.1503	3.1152	3.0794	3.0428	3.0053	2.9669	2.9276
9	3.0729	3.0061	2.9365	2.9005	2.8637	2.8259	2.7872	2.7475	2.7067
10	2.9130	2.8450	2.7740	2.7372	2.6996	2.6609	2.6211	2.5801	2.5379
11	2.7876	2.7186	2.6464	2.6090	2.5705	2.5309	2.4901	2.4480	2.4045
12	2.6866	2.6169	2.5436	2.5055	2.4663	2.4259	2.3842	2.3410	2.2962
13	2.6037	2.5331	2.4589	2.4202	2.3803	2.3392	2.2966	2.2524	2.2064
14	2.5342	2.4630	2.3879	2.3487	2.3082	2.2664	2.2229	2.1778	2.1307
15	2.4753	2.4034	2.3275	2.2878	2.2468	2.2043	2.1601	2.1141	2.0658
16	2.4247	2.3522	2.2756	2.2354	2.1938	2.1507	2.1058	2.0589	2.0096
17	2.3807	2.3077	2.2304	2.1898	2.1477	2.1040	2.0584	2.0107	1.9604
18	2.3421	2.2686	2.1906	2.1497	2.1071	2.0629	2.0166	1.9681	1.9168
19	2.3080	2.2341	2.1555	2.1141	2.0712	2.0264	1.9795	1.9302	1.8780
20	2.2776	2.2033	2.1242	2.0825	2.0391	1.9938	1.9464	1.8963	1.8432
21	2.2504	2.1757	2.0960	2.0540	2.0102	1.9645	1.9165	1.8657	1.8117
22	2.2258	2.1508	2.0707	2.0283	1.9842	1.9380	1.8894	1.8380	1.7831